City of
SACRAMENTO
Department of Utilities

Sewer System Management Plan

2025

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Appendices

LIST OF ABBREVIATIONS/ACRONYMS

AM	Asset Management
BMP	Best Management Practice
City	City of Sacramento
CCTV	Closed-Circuit Television
CIP	Capital Improvement Program
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
CoF	Consequence of Failure
CSS	Combined Sewer System
CWEA	California Water Environment Association
DOU	Department of Utilities
DPM	Design and Procedure Manual
DS	Data Submitter
ERC	Environmental & Regulatory Compliance
ESD	Equivalent Single-Family Dwelling
FOG	Fats, Oils, and Grease
FOIS	Facilities Operations Information System
FSE	Food Service Establishment
GIS	Geographic Information System
I/I	Inflow and Infiltration
KPI	Key Performance Indicator
LRO	Legally Responsible Official
LoF	Likelihood of Failure
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
PACP	Pipeline Assessment Certification Program
POTW	Publicly Owned Treatment Works
QA/QC	Quality Assurance/Quality Control
RDII	Rainfall-Dependent Inflow and Infiltration
SacSewer	Sacramento Area Sewer District
SCADA	Supervisory Control and Data Acquisition
SERP	Spill Emergency Response Plan
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan
SSS	Sanitary Sewer System
SSS WDR	Waste Discharge Requirements for Sanitary Sewer Systems
State WDRs	Statewide General Waste Discharge Requirements for Order No. 2022-0103-DWQ adopted December 6, 2022, also known as WDR
SWRCB	California State Water Resources Control Board
WDID	Waste Discharge Identification Number

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 1 – GOAL & INTRODUCTION

This chapter provides the goals and introduction for the Sewer System Management Plan (SSMP) and complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

1.1 Introduction

The City of Sacramento (City) Department of Utilities (DOU) has prepared this Sewer System Management Plan (SSMP) to meet the requirements of the 2022 Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems Order No. 2022-0103-DWQ (2022 State WDRs). This SSMP describes DOU's proactive programs and processes to effectively manage, operate and maintain the sanitary sewer system to reduce spills and effectively respond to spills in accordance with the 2022 State WDRs.

Attachment D of the 2022 State WDRs specifies the mandatory elements of an SSMP which correspond to each of the chapters as presented below in Table 1-1. Each chapter includes the regulatory requirements of the element, followed by the City's programs and processes for meeting the regulatory requirements.

Table 1-1: SSMP Elements

Element	Description
1	SSMP Goal & Introduction
2	Organization
3	Legal Authority
4	Operation & Maintenance Program
5	Design & Performance Provisions
6	Spill Emergency Response Plan
7	Sewer Pipe Blockage Control Program
8	System Evaluation, Capacity Assurance, & Capital Improvements
9	Monitoring, Measuring, & Program Modifications
10	Internal Audits
11	Communication Program

Supporting information that may be updated regularly is included in the following appendices:

Appendix A – Schedule for SSMP Audit and Update with Planned Action Items
Appendix B – Sewer System Asset Overview
Appendix C – Department of Utilities Organizational Chart
Appendix D – SSMP Contact List

Appendix E – Spill Emergency Response Plan
Appendix F – SacSewer Agreement C2021-0457
Appendix G – Freeflow H20 User Manual
Appendix H – 2025 SSMP Change Log

1.2 State Waste Discharge Requirements

As stated per the 2022 State WDRs (Attachment D):

The goal of the Sewer System Management Plan [SSMP] is to provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee's sanitary sewer system(s), (2) reduce and prevent spills, and (3) contain and mitigate spills that do occur.

The Plan must include a narrative Introduction section that discusses the following items:

Regulatory Context
The Plan Introduction section must provide a general description of the local sewer system management program and discuss Plan implementation and updates.

Sewer System Management Plan Update Schedule
The Plan Introduction section must include a schedule for the Enrollee to update the Plan, including the schedule for conducting internal audits. The schedule must include milestones for incorporation of activities addressing prevention of sewer spills.

Sewer System Asset Overview
The Plan Introduction section must provide a description of the Enrollee-owned assets and service area, including but not limited to:

- *Location, including county(ies);*
- *Service area boundary;*
- *Population and community served;*
- *System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons;*
- *Structures diverting stormwater to the sewer system;*
- *Data management systems;*
- *Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals;*
- *Estimated number or percent of residential, commercial, and industrial service connections; and*
- *Unique service boundary conditions and challenge(s).*

Additionally, the Plan Introduction section must provide reference to the Enrollee's up to-date map of its sanitary sewer system, as required in section 4.1 (Updated Map of Sanitary Sewer System) of Attachment D from Order WQ 2022-0103-DWQ.

1.2 Linkage to Department-Wide Strategy

As the overall management document for the sewer collection system, the SSMP also supports the following goals included in DOU's 2020-2025 Strategic Plan:

- Public Trust: Build and maintain public confidence and understanding through communication, delivery of quality services, responsive customer service, and compliance with environmental regulations.
- Reliability: Deliver reliable service through proactively monitoring and maintaining our assets and reducing system vulnerability by continuous performance measurement.
- Sustainability: Plan for current and future generations by protecting, preserving, and enhancing water resources, the environment, and the community.
- Organizational Performance: Develop and retain an engaged, diverse, and professional workforce in an organization that demands accountability and innovation, ensures cost-effective operations and employee safety.
- Financial Viability: Maintain a sustainable financial structure that responsibly invests in infrastructure, ensures full cost recovery and appropriate reserves, and optimizes financial resources.

1.3 Sewer System Management Plan Update Schedule

In accordance with the 2022 State WDRs, DOU's Environmental and Regulatory Compliance section will conduct audits of SSMP effectiveness and compliance every three years. Audit recommendations will be used to inform updates to the SSMP, which will be performed every six years, as required by the 2022 State WDRs. An SSMP audit and update schedule, along with a schedule for incorporating recommended activities to prevent sewer spills, can be found in Appendix A.

Implementation of SSMP elements is the coordinated effort of multiple DOU sections including, but not limited to:

- Environmental and Regulatory Compliance (ERC)
- Wastewater Collection
- Wastewater Systems Maintenance
- Capital Improvement Program (CIP) Engineering
- Geographic Information System (GIS)
- Asset Management (AM)

1.4 Sewer System Overview

Wastewater collection in the City is provided by both the DOU and the Sacramento Area Sewer District (SacSewer). SacSewer maintains approximately 35 percent of the public collection system within the City limits, primarily in the northwest and southeast sections of the City. DOU maintains the remaining portion of the public collection system, serving approximately 300,000 residents through two different systems. The combined sewer system (CSS) occupies the older, central portion of the City with a total service

area of approximately 11,000 acres and approximately 358 miles of pipe. The separated sewer system is located primarily in the northeast, east, and southwest sections of the City with a total service area of about 22,000 acres and approximately 482 miles of sewer mains. Additional sewer system asset data as required by the State WDRs can be found in Appendix B.

Wastewater conveyed by the City's separated sewer system and the combined sewer system is routed for treatment by SacSewer's publicly owned treatment works (POTW) EchoWater Resource Recovery Facility (EchoWater). Both the interceptor system that conveys wastewater to EchoWater and the EchoWater facility itself, located just south of City limits, are owned and operated by SacSewer. A map showing the City of Sacramento and SacSewer service areas is presented in Appendix B, along with a table containing sewer system asset data. Additional up-to-date maps displaying detailed asset information are available through City GIS maps.

1.5 Unique Service Boundary Conditions

The City of Sacramento is situated at the confluence of the Sacramento River and the American River in the northern Central Valley area. The City's CSS is unique in California, and its collection and treatment system is covered under an individual National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Valley Regional Water Quality Control Board (Region 5) (WDR No. R5-2020-0039, NPDES No. CA0079111). The CSS NPDES permit governs regulatory requirements for the CSS, and while procedures within this SSMP are used for both the CSS and the separated sewer system (SSS), the CSS is not covered under the 2022 State WDRs.

The City maintains an operating agreement with SacSewer to establish planning, financial, and operational roles and responsibilities between SacSewer and the City for both the CSS and SSS. SacSewer's sewer system flows into areas operated by the City, and the City contributes flows to SacSewer's sewer system. Therefore, coordination between SacSewer and DOU are critical to meet the 2022 State WDRs, since all the elements of the SSMP require agency collaboration.

DOU's separated sewer system is within the Sacramento and American River watersheds, which only receive stormwater flow from the City through pump stations due to the levees along the Sacramento and American River. DOU maintains watershed maps distinguishing areas in which drainage is conveyed by pump stations as compared to gravity flow to receiving waters. Pump stations can provide secondary containment during spills to prevent discharge to receiving waters.

DOU's sewer collection system is predominately in an area that drains to DOU's drainage system, however, surface flows in boundary areas of the City can convey spills to Sacramento County's drainage system.

The 2022 State WDR implementation protects water resources, both groundwater and surface water, through the proactive elements. The City's drinking water sources include groundwater wells and surface water from both the American and Sacramento

River. DOU's coordinated departmental spill response ensures prompt collaboration between sewer and drainage agencies, as well as prompt notification to DOU's drinking water treatment plants and well operators.

The map included in Appendix B shows the boundaries of the sewer and drainage agency responsibilities within and adjacent to the City, along with the City's drinking water sources.

1.6 Collection System Maps and Data Management Systems

DOU has a variety of data management systems to retain records and maps related to the collection system. This includes systems for data management for assets, record drawings, agreements, maintenance records, inspection results, and geospatial information.

Facilities Operations Information System (FOIS)

The FOIS is a web-based application available on the City's intranet that serves as DOU's repository for record drawings; improvement plans prepared by staff, outside consultants, and other agencies; specifications; operations and maintenance manuals; facility photographs; and pump stations etc. as they relate to the collection system.

Computerized Maintenance Management System (CMMS)

The Wastewater and Drainage Division utilizes the following CMMS for planning, service requests, scheduling maintenance work (work orders), tracking completed work, asset inventories, and monitoring different types of maintenance performed on sewer assets:

- Maintenance Connection contains both asset data and work done on vertical assets such as treatment plants and sump stations, which are edited and updated directly by Operations and Maintenance staff within Maintenance Connection.
- Cityworks is a Geographic Information System (GIS) based software that contains asset data and work done on horizontal assets such as mainlines, manholes, and service connections. Cityworks is also used to track spills, inspections, food service establishment inspections, and other system evaluation tasks.

These systems collectively manage and maintain data entry, reporting, preventative maintenance scheduling, workflow, quality assurance/quality control, and security. The primary functions of the CMMS systems are the following:

- Maintain service request and maintenance history information for each collection system asset,
- Produce and regularly update the maintenance schedule based on feedback from the cleaning and maintenance operations,
- Generate reports that support data analysis and decision making,
- Provide documentation for use in regulatory compliance reporting, and
- Indicate pipe segments or structures that may be candidates for replacement

or rehabilitation under the Capital Improvement Program (CIP).

GraniteNet

GraniteNet is the software utilized during closed-circuit television (CCTV) inspections to capture in-pipe observations and defect scoring for condition assessment, as well as asset attributes (such as pipe material, diameter, length, etc.).

FreeFlowH2O

FreeFlowH2O processes inspection information downloaded from Cityworks and GraniteNet to determine recommended individual pipe maintenance schedules.

Geographic Information System (GIS) Database

DOU utilizes GIS software from Environmental Systems Research Institute (ESRI) to create maps displaying DOU assets as well as boundaries of adjacent agency's jurisdictions and non-City assets. Staff maintain infrastructure information and asset attributes.

Sump Book

DOU maintains a Sump Book containing details regarding every sewer and drainage pump station maintained by the Wastewater and Drainage Division, including maps showing the pump station locations. Information is also included regarding the number of pumps, horsepower and pumping capacity of each pump, the force main location and discharge locations, and the maximum amount of time the pumps can be out of service before the station overflows (out of service limitations). The Sump Book is updated periodically as pump stations are rehabilitated, added, and/or removed from the system.

CARA

CARA is the City's citywide content management system, and is the official repository used to retain electronic copies of City records, which include maintenance agreements and official records.

Supervisory Control and Data Acquisition (SCADA) Dashboard

DOU's SCADA system is used to manage real-time operations and collect remote data for DOU's sump stations and treatment plants. SCADA is used to remotely monitor and maintain records of operations, such as pump run times, equipment failures, high sump levels, and power status.

Parcel Viewer

Sacramento County's Parcel Viewer maintains parcel data identifying parcel ownership, land use, assigned service districts for sewer services, and other property information.

Acumen

Acumen is a computer system used to deliver and track City staff training. Training records for each employee are maintained in Acumen. Records for other training

delivered in person are maintained separately by DOU.

DOU Information Hub

DOU Information Hub is used as the centralized viewer of performance metrics and asset data consolidated from other data management systems (i.e. GraniteNet, CCMS, GIS) through PowerBI Reports.

DOU SharePoint Site and Nexus Intranet

DOU maintains current standard operating procedures (SOPs) and organizational charts on City intranet sites, such as Nexus and SharePoint. This allows version control across all divisions and sharing of department and city-wide plans, audits, policies, manuals, SOPs, budget books, and other relevant material.

PM Database

The PM Database is a repository of all ongoing CIP projects with the current project status.

eCAPS

The City uses eCAPs to maintain all financial tracking and procurement records.

1.7 Sewer System Ownership and Operation Responsibilities

The City of Sacramento does not own or maintain upper or lower sewer laterals. City Code 13.08.190 states, **"**Sewer lines constructed in private easements or on private property are private sewer lines, and the city shall have no responsibility for the maintenance and repair of the lines."

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 2 – ORGANIZATION

This chapter describes the City organizational structure for developing and implementing the SSMP and the chain of communication for reporting and responding to overflows. The information presented complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

2.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organization chart or similar narrative documentation that includes:

- *a) The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;*
- *b) The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;*
- *c) Organizational lines of authority; and*
- d) *Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county health officer, county environmental health agency, and State Office of Emergency Services.)*

2.2 Organizational Lines of Authority & Contact List

DOU is responsible for construction, design, and operation and maintenance of the separated sewer system.

DOU operates in four divisions: Business Services, Engineering and Water Resources, Water, and Wastewater and Drainage. The management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program can be found in Appendix C.

An updated list of names and phone numbers for specific staff involved with implementing the SSMP is included in Appendix D.

Legally Responsible Officials
Both the Wastewater and Drainage Division Manager and the Wastewater Collection Superintendent are designated as the Legally Responsible Officials (LROs) for the City

separated sewer system and are authorized to certify all electronic reports submitted for the State WDRs.

2.3 Chain of Communication for Reporting Spills

The chain of communication for reporting spills is provided in the Spill Emergency Response Plan (Appendix E), Figure 4.0: Spill Communication Plan. The general response procedure begins when the City receives notification of the spill. The Wastewater Collection Supervisor coordinates with the Wastewater Superintendent and/or other Supervisors to assign the crews necessary to investigate, assess, contain, and clean up the reported spill. When the spill reports are completed, they are submitted to the Californian State Water Resources Control Board (SWRCB) by the data submitters (DSs) listed in the contact list (Appendix D) and then the reports are certified by an LRO.

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 3 – LEGAL AUTHORITY

This chapter of the SSMP discusses the City's Legal Authority, including its Municipal Code and agreements with other agencies. The information presented complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs

3.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan must include copies or an electronic link to the Enrollee's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority to:

- *Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages;*
- *Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure;*
- *Require that sewer system components and connections be properly designed and constructed;*
- *Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee;*
- *Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and*
- *Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.*

3.2 Compliance Summary

Table 3.1 lists the City codes providing the authority required by the 2022 State WDRs as well as the authorities provided by SacSewer's Collection System Ordinance for the operation of the City collection system.

Table 3.1 - Legal Authority Summary

State WDRs for Legal Authority	
City of Sacramento Municipal Code[1]	**SacSewer's Collection System Ordinance**[2]
D13 (iii)(a) Prevent illicit discharges into the sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc.).	
13.08.040 Prohibited discharges **13.08.060** Containment and notification of prohibited discharge **13.08.120** Pretreatment requirements **13.08.130** Prohibited cross connections **13.08.160** Private sewer lines—No infiltration or leaks	**2.** Sewer Use
D13 (iii)(b) Require that sewers and connections be properly designed and constructed.	
13.08.145 Mitigation of drainage impacts; design and procedures manual for water, sanitary sewer, storm drainage, and water quality facilities **13.08.170** Required connection to city sewer system **13.08.360** Application for installation **13.08.370** Approval of plans **13.08.380** Inspection of installation—Property of city **15.24** Amendments to the California Plumbing Code	**2.6** Pretreatment Facilities
D13 (iii)(c) Ensure access for maintenance, inspection, or repairs for the portions of the lateral owned or maintained by the Public Agency.	
13.08.240 Structures overlying public utilities **13.08.290** Inspections **13.08.310** Control manhole for industrial wastes	**2.11** Easement Access **9.1** Right to Enter
D13 (iii)(d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages.	
13.08.040 Prohibited discharges **13.08.090** Food service establishment (FSE) requirements **13.08.100** Interceptors for other businesses	**2.4** Prohibited Discharges **2.5** Prohibited Discharge Locations **2.6** Preliminary Treatment Facilities **2.7** Grease Management Practices **2.8** Grease Interceptors
D13 (iii)(e) Enforce any violation of its sewer ordinances.	
8.04 Nuisances Generally **13.08.060** Enforcement **13.08.270** Discontinuance of Service **13.08.340** Violations **13.16.020** Purpose and intent **13.16.050** Discharge of nonstormwater prohibited **13.16.080** Discharge in violation of permit **13.16.090** Illicit connection prohibited	**9.** Enforcement
D13 (vii)(d) Requirements to install grease removal devices design standards, maintenance requirements, and reporting requirements.	
13.08.100 Interceptors for other businesses **15.24** Amendments to the California Plumbing Code[3] that references section Uniform Plumbing Code	**2.6** Preliminary Treatment Facilities **2.9** Sand/Grit Interceptors
D13 (vii)(e) Authority to inspect grease producing facilities and enforcement authorities.	
8.04 Nuisances Generally **8.04.050** Right of entry **8.04.110** Nuisance abatement **13.08.060** Enforcement **13.08.290** Inspections	**9.** Enforcement

[1] The numbers refer to applicable City Municipal Code sections.
[2] Numbers refer to the chaptered sections of the SacSewer Consolidated Ordinance as of effective date June 7, 2024
[3] The Uniform Plumbing Code (UPC) is adopted by reference. Sections of the 1014.0 and 1015.0 of the UPC cover the design requirements for grease removal devices.

3.3 Codes, Ordinances, and Agreements

The legal authority required for the SSMP by the 2022 State WDRs is contained within the City's municipal code. Several chapters of the municipal code include various elements of the required authority and are available at https://codelibrary.amlegal.com/codes/sacramentoca. The required ordinances are included in Title 1 General Provisions, Title 8 Health and Safety, Title 13 Public Services, and Title 15 Buildings and Construction. The City operates its sewer collection system in accordance with the SacSewer's Collection System Ordinance (https://www.sacsewer.com/ordinances/) and a Master Interagency Agreement (Appendix F).

3.4 Enforcement of Code Authority

Enforcement authority is provided in City Code Title 13 for the following program elements:

- Pipe Blocking Substances
- Illicit Discharge
- Proper Design and Construction
- Access Agreements
- Any applicable sewer ordinance or service agreement

Environmental and Regulatory Compliance and Operations and Maintenance maintain guidance documents regarding escalation procedures. Enforcement action is dependent on the severity and frequency of the violation and may include any of the following:

- Education
- Verbal Warning
- Notice of Violation
- Notice to Comply
- Administrative Fees
- Cost Recovery
- Discontinuance of Service

All enforcement activities are conducted in accordance with City's Nuisance Code (Chapter 8, Section 4).

3.5 Emergency Spill Response Coordination

The City wastewater and drainage sections operate within the same division of DOU, with ongoing collaboration for emergency preparedness and spill response. Annual training is provided to wastewater and drainage staff with roles and responsibilities for emergency spill response, as outlined in Chapter 6 of this SSMP and the Spill Emergency Response Plan. The Wastewater and Drainage Division works with DOU Engineering and GIS staff to identify and prevent unintentional cross connections of City sewer and stormwater infrastructure.

Agreements for coordination during emergency spill response can be found within the *Amended and Restated Sacramento Regional Wastewater Management Program Master Interagency Agreement* (Contract 2021-0457) attached as Appendix F as well as the Stormwater Quality Improvement Plan for both the City of Sacramento and Sacramento County. SacSewer hosts annual collaboration meetings between local sewer agencies, including City of Sacramento, to discuss topics related to spill response and other SSMP elements.

3.6 Access for Maintenance

Public utility easements are legal agreements that allow utility providers access to a portion of a property to install and maintain utilities, and may be recorded in subdivision maps, parcel maps, and/or individual property deeds. Utility easements are binding to the property itself and apply after changes of ownership.

If an easement cannot be identified in any of the above listed documents, City code enables access to property for inspection, maintenance, and nuisance abatement. Multiple codes may apply, depending on the specific circumstances, and issuance of a court order may be required.

Additionally, the Design and Procedure Manual states that new mains shall be located in City right-of-ways dedicated to public streets. Any variance from standards in the Design and Procedure Manual must be submitted for evaluation by Development Services staff.

The City of Sacramento does not own or maintain upper or lower sewer laterals. City Code 13.08.190 states, “Sewer lines constructed in private easements or on private property are private sewer lines, and the city shall have no responsibility for the maintenance and repair of the lines.”

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 4 – OPERATIONS & MAINTENANCE PROGRAM

This chapter of the SSMP discusses the City's Wastewater and Drainage Division Operations and Maintenance (O&M) Procedures. The information presented complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

4.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan must include the items listed below that are appropriate and applicable to the Enrollee's system.

Updated Map of Sanitary Sewer System
An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries.

Preventive Operation and Maintenance Activities
A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors.
The scheduling system must include:

- *Inspection and maintenance activities;*
- *Higher-frequency inspections and maintenance of known problem areas, including areas with tree root problems;*
- *Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.*

The data collection system must document data from system inspection and maintenance activities, including system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.

Training

- *In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:*
- *The requirements of this General Order;*
- *The Enrollee's Spill Emergency Response Plan procedures and practice drills;*
- *Skilled estimation of spill volume for field operators; and*
- *Electronic CIWQS reporting procedures for staff submitting data.*

Equipment Inventory
An inventory of sewer system equipment, including the identification of critical replacement and spare parts.

4.2 Preventative Operation and Maintenance

The Preventative Maintenance Program includes regular inspection and maintenance activities guided by system data collected.

Collection System
Scheduling of preventative maintenance and inspection activities for the collection system are guided by the following asset information:

- Pipe size
- Previous inspection results based on observations of:
    - Roots
    - Levels of Fats, Oil, & Grease (FOG)
    - Debris
    - Structural defects
- Historical knowledge of spills or capacity limitations

The following data management systems are utilized to document asset and inspection information for the determination of assigned maintenance activities and schedules:

System	Function
Cityworks	Records inspection data for each pipe following maintenance activities, based on field observations
GraniteNet	Records defect and observation data for each pipe following CCTV inspection
Freeflow H20	Processes inspection information downloaded from Cityworks and GraniteNet to determine recommended individual pipe maintenance schedules

Sewer maintenance field crews utilize work order inspections in CityWorks to document the volume of roots, grease, and debris found in each pipe during scheduled cleaning. Additionally, pipe defects and observations are recorded during CCTV inspections through GraniteNet.

Freeflow H20 (Freeflow) imports cleaning and CCTV inspection information to be evaluated through an algorithm that generates recommendations to alter assigned pipe maintenance frequencies, based on programmed conditions as documented in the Freeflow User Guide, which is included in Appendix G.

Example: Sewer maintenance crew records a Cityworks inspection for “Heavy” amounts of grease found in a pipe with a current assigned cleaning frequency of 12 months. Freeflow processes this information to determine a new recommended cleaning schedule of 6 months, which is then presented to the scheduler/planner for approval. Once approved, the pipe’s assigned frequency is changed. Freeflow will then

alert the scheduler/planner when the pipe is coming due for maintenance so that it can be placed on a workorder and assigned to sewer crews.

Root Control

Older residential areas with mature trees present elevated potential for root intrusion. Requests are made by CCTV operators and collection field crews to address root intrusion found during inspections that require recurring targeted root removal beyond scheduled cleaning. Mechanical root control (also referred to as rodding) is used when a pipe has a history of roots. Rodding work orders cycle on an annual and bi-annual basis, depending on the amount of roots found in the last inspection.

Fats, Oils, and Grease Control

Areas with known FOG issues, based on historical knowledge and Cityworks inspection data, are placed on a more frequent maintenance schedule as discussed in the Preventative Maintenance section above. Additional details on the City's FOG program can be found in Chapter 7.

Closed Circuit Television (CCTV) Inspection

DOU utilizes a national industry standard known as the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) as a scoring tool for recording and coding pipeline defects. Pipe defects and observations used to generate PACP scores are stored in GraniteNet, as discussed earlier in this chapter.

CCTV inspections for condition assessment are conducted on a scheduled basis based on pipe age, diameter, and past defects and observations recorded. The CCTV schedule operates separately from the maintenance schedule, though data from CCTV inspections are processed ongoing to inform potential maintenance schedule changes. Two categories of defects may be identified during inspection, either structural or O&M. Structural defects for hinge cracks and fractures, holes and voids, and missing pipe walls recorded as grade 4 and above prompt Freeflow to recommend a repair. Defects associated with O&M activities, such as pipe blocking substances found, may prompt a recommendation to expedite the next scheduled cleaning.

CCTV inspections are also performed following the removal of pipe blockages for all spills and plugged mains. The post-blockage inspection allows the Supervisor and/or Lead Worker to determine the cause of the blockage and whether the pipe requires additional maintenance or if repair, rehabilitation, or replacement is needed. If a repair is warranted, Wastewater staff completes the repair. If an issue is detected that cannot be remedied by a repair by Wastewater crews, the pipe is referred to Engineering for evaluation through creation of a CIP work order in Cityworks. Wastewater and CIP staff meet regularly to discuss current and potential projects.

Additionally, CCTV inspections are performed on approximately 5 percent of recently cleaned pipes for quality assurance/quality control (QA/QC), and on an as needed basis for Engineering projects and studies.

Manhole Inspections

Visual manhole inspections are conducted by field crews during the course of regular maintenance and CCTV activities. Additional inspections are conducted through the use of a manhole inspection camera, as needed. During manhole inspections, if defects are found a repair work order will be created.

Pump Stations

Sump maintenance schedules and asset information are stored in Maintenance Connection, a separate CMMS from collections. Wastewater and Drainage staff perform a monthly inspection of DOU's pump stations to assess the operation of the pumps, structures, and wet wells. The monthly inspections are based on the "Plant Operator Station Policy" incorporated here by reference.

Routine maintenance tasks scheduled or assigned through Maintenance Connection are specific to each individual pump station, and procedures vary from station to station. Maintenance strategies are based on knowledge of unique problems, inspection observations, and manufacturers' specifications for the equipment at each sanitary sewer pump station. Additional inspection and maintenance activities are assigned when problems are identified.

Pump stations are monitored remotely through DOU's Supervisory Control and Data Acquisition (SCADA) Network that provides real time station status. Remote access allows for offsite control and monitoring of pump stations and supports the deployment of operations and maintenance staff to address problems that may occur.

4.3 Staff Training

Equipment and operations training in the Wastewater and Drainage Division is initially provided by the vendor or manufacturer of the equipment. Ongoing technical training is provided through on-the-job training and rotation among the different maintenance crews and equipment. DOU also utilizes regional and statewide training available through seminars and conferences.

DOU crews receive annual maintenance training by supervisory staff on topics such as rodding, jet cleaning, CCTV, and repairs procedures. Spill response training is also provided annually and focuses on spill emergency response as described in the Spill Emergency Response Plan. Activities in the spill response training include practice drills, spill estimation, and reporting procedures. Staff responsible for submitting data to CIWQS receive additional training on reporting requirements and procedures.

The City Standard Specifications require that all contractors and subcontractors be experienced with sanitary sewer work and that they fully comply with all laws, regulations, and standards governing sewer work, sanitation, and public health.

4.4 Major Equipment and Critical Spare Parts Inventories

Wastewater Collections is assigned a fleet of specialized vehicles for operations and maintenance which include vehicles performing similar functions in order to maintain access to equipment necessary for spill response. DOU Logistics performs an annual evaluation of inventory to determine replacement and purchasing needs.

The inventory of spare parts and additional materials necessary for ongoing maintenance and spill response is housed at warehouses and storerooms at multiple DOU locations. DOU Procurement coordinates the purchase of replacement parts. When a CIP project is completed, O&M is made aware of parts needed to have on hand for future potential repair needs.

DOU continually evaluates and analyzes critical parts inventories for the pump stations. DOU maintains multiple spare submersible pumps for use in the event of a pump station failure. DOU also maintains a fabrication shop that can fabricate critical and hard to replace parts for pumps and station equipment. This can reduce downtime typically associated with ordering and receiving parts from suppliers. DOU pump stations include redundancy of critical systems to reduce the impact of failure.

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 5 – DESIGN & PERFORMANCE PROVISIONS

This chapter of the SSMP identifies the design and performance provisions used by the sanitary sewer system and complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

5.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan must include the following items as appropriate and applicable to the Enrollee's system:

Updated Design Criteria and Construction Standards and Specifications
Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria.

Procedures and Standards
Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

5.2 Design Standards

The City Department of Utilities (DOU) has design guidelines and standard specifications that provide guidance for planners, engineers, and construction personnel for its sewer system. The design guidelines and standards are mandated under the legal authority granted in City Code under Section 13.08 and require designs to meet applicable standards of the Uniform Plumbing Code.

The following City of Sacramento documents specify design criteria, construction standards, and specifications for both City sewer facilities and private facilities connecting to the City sewer facilities:

- Design and Procedure Manual (DPM)
- Onsite Design Manual
- Standard Specifications

The Standard Specifications and design manuals are periodically updated. The most recent version of the DPM, Onsite Design Manual, and Standard Specifications are posted on the City's website. A review is conducted every three years to determine if changes are necessary, and if changes are needed, a schedule is developed for updates.

For any new DOU facilities, the developer or design-consultant submits a preliminary design report based on relevant sewer master plan and proposed flows. After finalizing the preliminary design report, the construction documents based off the preliminary design report are submitted for review. When the City receives the design and construction documents, they are reviewed to verify that the proposed system infrastructure components provide adequate hydraulic capacity and also meet the needs for maintenance and resiliency.

During construction, DOU reviews any additional submittals such as approval for specific system components or any Requests for Information to clarify construction plans and specifications. DOU provides additional information or approves/denies equipment requests.

Design and Procedure Manual

The DPM provides general design guidelines for new sewer facilities, both pump stations and pipelines for sewer collection systems in Sections 9.

The DPM procedures ensure that design for new DOU sewer facilities constructed both by private developers or through City projects have sufficient hydraulic capacity. DOU ensures hydraulic capacity for new sewer facilities by specifying requirements for assessment prior to design, and having design standards including the following:

- Geotechnical investigation requirements in areas of shallow groundwater to prevent infiltration of groundwater into pipelines
- A feasibility study to evaluate hydraulic capacity
- Additional analysis for unusual and/or potentially large water users, such as food processing facilities, heavy industrial facilities, car washes, etc.
- Inclusion of evaluation for rainfall dependent infiltration and inflow

The design standard relies on the following standard:

- Equivalent single family dwelling units (ESD) Flow Factor of 310 gallon per day per ESD (gpd/ESD), which includes groundwater infiltration

Onsite Design Manual

The Onsite Design Manual provides minimum design standards and guidelines for the planning, design, and approval of sewer connections to City systems. The Onsite Design Manual includes provisions to ensure that new sewer system connections are designed in accordance with the proactive goals of this SSMP for system resilience by requiring new installation to be designed with maintenance considerations, analysis to ensure development will not result in capacity deficiencies, and proactive measures in place to prevent or reduce impacts of spills. The following are some of the included provisions:

- Requirements for sewer studies
- Access and easement standards
- Best management practices for facilities that can generate fats, oil, or grease
- Prohibition of stormwater connections to the separate sanitary sewer system
- Requirements for new taps

Standard Specifications

The City's standard specifications for public construction include the requirements for construction of City facilities and capital improvement projects overseen by the City. The City's Standard Specifications are included in construction documents. Some of the procedures specified to ensure system resiliency, reduce or prevent spills, or prevent inflow and infiltration include:

- Design standards to prevent inflow and infiltration, such as requiring watertight structures
- Material standards
- Procedures for adjusting manholes heights
- Requirements for contractors to prevent spills, and specified responsibilities related to the containment and cleanup of spills

5.3 Inspection and Testing Standards

The City's Standard Specifications include procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

Testing includes:

- Specific testing standards in areas where groundwater is expected
- Tests for leakage and obstructions
- CCTV inspections for all new installations with acceptance criteria

Sewer system construction is overseen by City inspectors or City-contracted inspectors (from DOU and/or Public Works) for DOU capital improvement projects and development related sewer construction. The inspector's role is to verify consistency with the construction plans and specifications, and review results of testing conducted in accordance with the specifications. Construction contracts include a one-year warranty provision covering deficiencies in the product and/or work performed. Warranty inspections on completed projects are scheduled and monitored by the Construction Coordinator, with CCTV inspections performed by Operations and Maintenance staff.

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 6 – SPILL EMERGENCY RESPONSE PLAN

This chapter of the SSMP provides an overview of the City's Spill emergency response procedures. The information presented complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

6.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan must include an up-to-date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to:

- *Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;*
- *Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;*
- *Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;*
- *Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;*
- *Address emergency system operations, traffic control and other necessary response activities;*
- *Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;*
- *Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;*
- *Remove sewage from the drainage conveyance system;*
- *Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;*
- *Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;*
- *Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;*
- *Conduct post-spill assessments of spill response activities;*
- *Document and report spill events as required in this General Order; and*
- *Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.*

6.2 Summary of Spill Response

DOU's spill response is described in the Spill Emergency Response Plan, included in Appendix E, which contains all parts of spill emergency response including training, containment, notification, and post-spill documentation and assessment procedures. Post-spill assessments are completed on all spill response activities to collect information for the prevention and/or mitigation of future spills, and to provide any necessary feedback and additional training to ensure proper documentation and volume estimation. The Spill Emergency Response Plan is assessed annually for effectiveness and is updated as needed.

6.3 Notification, Monitoring, and Reporting Requirements

The Spill Emergency Response Plan includes procedures that comply with the notification, monitoring and reporting requirements of the 2022 State WDR, State law and regulations. The Spill Emergency Response Plan includes notification procedures so that primary responders and affected entities are informed of spills in a timely manner, and as appropriate, based on specifics of the spill (such as volume, location, etc.).

6.4 Training

City staff receive on-the-job training regarding steps that should be taken to contain, remove, and prevent the discharge of untreated and partially treated wastewater to waters of the State or any drainage conveyance and to minimize or remediate public health impacts and adverse impacts on beneficial uses of waters of the State.

Annual training is provided for wastewater and drainage staff with roles and responsibilities for emergency spill response, as outlined the Spill Emergency Response Plan. The training includes field staff response activities, volume estimation, notification and regulatory reporting requirements, and procedures set forth in the Spill Emergency Response Plan. Contractor personnel are trained and advised to immediately contact City staff in the event of a spill.

6.5 Traffic and Crowd Control and Other Activities

The Wastewater Collection Standard Operating Procedures include necessary procedures to address emergency operations, such as traffic and crowd control and other necessary response activities.

6.6 Coordination

The Spill Emergency Response Plan contains procedures and contact lists for interagency coordination to expedite spill response, containment, and recovery. Coordination is planned in advance with the City Drainage section and other potentially

affected utility agencies. The City's Spill Emergency Response Plan was submitted for review by the adjacent sewer agency (SacSewer) and the City's Drainage Superintendent to verify roles and responsibilities for coordination prior, during, and after a spill event. Contact information for storm drain agencies and other utility agencies/departments who are critical for interagency coordination is reviewed during the annual assessment to support prompt coordination.

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 7 – SEWER PIPE BLOCKAGE CONTROL PROGRAM

This chapter of the SSMP provides a description of the sewer pipe blockage program for the SSMP and complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

7.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and, debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed.

The procedures must include, at minimum:

- *An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;*
- *A plan and schedule for the disposal of pipe-blocking substances 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 substances generated within a sanitary sewer system service area;*
- *The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;*
- *Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;*
- *Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;*
- *An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and*
- *Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.*

7.2 Sewer Pipe Blockage Control Program Determination

DOU maintains and regularly reviews data on spills to determine causes of spills related

to pipe-blocking substances. Historically, DOU has found that fats, oils, and grease (FOG), rags, and debris are contributors to spills.

In an effort to continue reducing spills resulting from pipe blockages, DOU employs a Sewer Pipe Blockage Control Program that includes the following components:

- A public education and outreach program for the public on sewer pipe blockages
- Routine, scheduled cleaning in areas where FOG has been identified during inspections or where FOG was identified as contributing to a spill
- Inspection program for Food Service Establishments (FSEs)
- Legal authority

7.3 Public Outreach Program

The City implements commercial and residential FOG outreach and educational programs as follows:

Commercial (Restaurants)

The commercial FOG outreach and education activities target FSEs (i.e., restaurants). The outreach activities were designed to educate restaurant owners and managers about the City's codes regarding the need for grease traps and interceptors, the need to maintain these traps and interceptors, and the City's inspections and enforcement methods.

DOU maintains a website that provides information about restaurant responsibilities and encourages restaurant owners/managers to work in partnership with the City to help ensure that the sewer system functions at its best. DOU distributes flyers that are left with the managers and owners during FSE inspections to help them train staff on proper FOG disposal methods and grease trap and interceptor maintenance. These materials are also available on DOU's website for ease of access by restaurant owners, managers, and/or staff, as needed.

Residential

The residential outreach activities aim to educate residents about the causes of blockages and what action residents can take to reduce the incidence of blockages.

DOU uses the following methods for public education of City of Sacramento residents on blockages:

- Maintenance of DOU website and social media channels
- Bill inserts
- Door hangers, as needed
- Community events
- Earned and paid media
- Other outreach opportunities, as available or based on review of blockage incidents

DOU continues to work with regional partners, such as SacSewer, as well as various associations when opportunities arise to ensure the message about proper FOG disposal is communicated throughout the region.

Public Outreach Schedule
DOU conducts an annual sewer blockage awareness campaign to promote proper disposal of pipe-blocking substances, in addition to maintaining a website and social media channels. The sewer blockage awareness campaign includes an annual bill insert and annual messaging through DOU social media. Campaign approaches are revised based on reviewing data on causes of spills through annual coordination between DOU's Public Information Officer and the Operation and Maintenance Superintendent (or designee).

7.4 FOG Disposal for Residents and Commercial Businesses

DOU maintains resources for the public to be informed of licensed grease haulers on DOU's website www.sacramentofatfreedrains.com. In addition, the City of Sacramento Recycling and Solid Waste distributes information on proper disposal options for waste materials, including kitchen oil and grease through the City of Sacramento Waste Wizard application and other distributed printed materials. The City website provides information on acceptable disposal facilities, such as household hazardous waste facilities that accept cooking oil, and links for the facilities' locations and hours of operation.

7.5 FOG Disposal for DOU Operations

DOU utilizes hydro vacuum trucks to clean and remove pipe blocking substances from the sewer system as part of preventative maintenance activities and spill response. Substances removed from the sewer system are disposed of on an as-needed basis, when trucks reach capacity limits of the waste they can hold. Waste from the trucks is deposited at Freeport Dump, located at 7788 Freeport Blvd in Sacramento. Additionally, DOU is permitted to dispose of waste at SacSewer's EchoWater facility, located at 8521 Laguna Station Rd in Elk Grove.

7.6 Legal Authority

Table 3.1 in Chapter 3 of this SSMP lists the City codes that provide the required legal authority to prohibit FOG discharges into the sewer system and the authority to identify measures that prevent sewer spills and blockages caused by FOG.

7.7 Requirements for Grease Removal Devices

Title 15 of the Municipal Code includes requirements for the installation of grease removal devices (such as traps or interceptors), design standards for the grease

removal devices, maintenance requirements, record keeping and reporting requirements. The City's Community Development Department within the Building Division verifies that building permit applications for applicable new construction and remodel projects follow the design standards for grease removal devices as listed in the Uniform Plumbing Code, section 1014 Grease Interceptors. In addition, the City requires review by the Sacramento County Environmental Management Department (EMD) - Environmental Health Division prior to approving a building permit for a restaurant.

7.8 Inspection & Enforcement Authority

The City has the authority to inspect grease-producing facilities, enforce provisions of applicable sewer use ordinances, and sufficient staff to inspect and enforce the FOG provisions of applicable City ordinances. Refer to Table 3.1 in Chapter 3 of this SSMP for a summary of municipal codes related to inspection and enforcement authority including, but not limited to:

- 8.04 Nuisances Generally
- 8.04.050 Right of entry
- 8.04.110 Nuisance abatement
- 13.08.060 Enforcement
- 13.08.290 Inspections

The DOU Wastewater and Drainage Division oversees a FOG Control Inspection Program with two dedicated full-time FSE inspectors and a Supervisor managing the process for completion of scheduled inspections. This inspection staff has the primary responsibility of performing routine inspections and conducting enforcement to ensure FSEs are in compliance with the City's ordinances. Inspection staff are also responsible for verification of the maintenance and performance of the FSE's grease removal device. Inspectors utilize a checklist of best management practices FSEs should be following to prevent pipe blocking substances from entering the sewer system, and coach businesses if improvements need to be made, with follow up visits to ensure corrections are implemented.

FSEs are assigned an inspection schedule based on presence of grease producing equipment and inspection history, with the majority of FSEs inspected on an annual basis. Establishments which require less frequent inspections would be those containing cooking devices producing a minimal amount of FOG, such as only a microwave on-site.

Scheduling is maintained and assigned to FOG inspectors through CMMS workorders which automatically generate based on assigned frequency. Inspection staff will conduct follow-up inspections and enforcement of FSEs that are found not maintaining their grease removal devices or implementing proper best management practices (BMPs). Information regarding escalation procedures for violations related to pipe blocking substances and illicit discharges can be found in Chapter 3 of this SSMP.

7.9 Areas Subject to FOG Blockages and Cleaning

The preventative maintenance program includes FOG identification through cleaning inspection results, CCTV inspection observations, and FOG inspector processes. Preventative maintenance scheduling for each mainline is determined by an algorithm that uses cleaning inspection results to alter the frequency an asset should be jet cleaned to reduce the risk of a spill occurring. Inspection results entered by field staff which contain Heavy notations of FOG will result in adjusted cleaning schedules (ex: 3-month frequency assigned to a pipe that was previously on a 6-month schedule). Additionally, the scheduler/planner can manually adjust cleaning frequency assigned to an asset when alerted that there is a known risk of FOG which has not been otherwise captured in recent cleanings (ex: CCTV crew finds FOG deposits or inspectors discover risk of FOG entering system during FSE inspection).

7.10 Source Control Measures

The source control measures for areas of the collection system that are subject to blockages include the various public outreach, restaurant inspections, and enforcement and maintenance activities described previously in this chapter. DOU staff utilize the performance metrics listed in Chapter 9 of this SSMP, along with analysis of the details of each spill to identify any new pipe blocking substances to ensure control measures and program elements address all known contributing factors.

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 8 – SYSTEM EVALUATION, CAPACITY ASSURANCE, & CAPITAL IMPROVEMENTS

This chapter of the SSMP presents the City's System Evaluation and Capacity Assurance Plan that will determine condition assessment and prioritization of system elements. The information presented complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

8.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan must include procedures and activities for:

- *Routine evaluation and assessment of system conditions;*
- *Capacity assessment and design criteria;*
- *Prioritization of corrective actions; and*
- *A capital improvement plan.*

System Evaluation and Condition Assessment

The Plan must include procedures to:

- *Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;*
- *Identify and justify the amount (percentage) of its system for its condition to be assessed each year; - once every 10 years – not justified, not a percent*
- *Prioritize the condition assessment of system areas that:*
  - *Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;*
  - *Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;*
  - *Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;*
- *Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;*
- *Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;*
- *Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and*
- *Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.*

Capacity Assessment and Design Criteria

The Plan must include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:

- *Dry-weather peak flow conditions that cause or contributes to spill events;*
- *The appropriate design storm(s) or wet weather events that causes or contributes to spill events;*
- *The capacity of key system components; and*
- *Identify the major sources that contribute to the peak flows associated with sewer spills.*

The capacity assessment must consider:

- *Data from existing system condition assessments, system inspections, system audits, spill history, and other available information;*
- *Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions; Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;*
- *Increases of erosive forces in canyons and streams near underground and aboveground system components due to larger and/or higher-intensity storm events;*
- *Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and*
- *Necessary redundancy in pumping and storage capacities.*

Prioritization of Corrective Action

The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.

Capital Improvement Plan

The capital improvement plan must include the following items:

- *Project schedules including completion dates for all portions of the capital improvement program;*
- *Internal and external project funding sources for each project; and*
- *Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies*.

8.2 System Evaluation and Condition Assessment

Wastewater system infrastructure repair, rehabilitation, and replacement are an integral part of DOU's engineering project delivery and operations and maintenance (O&M) activities for the wastewater collection system. DOU has thorough system evaluation and condition assessment processes to guide repair, rehabilitation, and replacement priorities.

DOU evaluates the sanitary sewer system assets using the following practices and technologies:

- Closed-circuit television (CCTV) inspections
- Visual inspections
- Non-destructive testing
- Destructive testing

DOU Engineering, Asset Management (AM), and O&M teams coordinate to plan and prioritize assets for evaluation. All mainlines and major assets have an established inspection/reinspection schedule assigned in CMMS. Condition assessments for assets besides gravity mainlines, such as force mains and sump stations, are conducted by O&M staff regularly through assigned preventative maintenance schedules recorded in CMMS. Condition assessments conducted by third-party consultants are overseen by Engineering staff.

All gravity mainlines are inspected at a maximum of once every 15 years. Pipe defects are recorded using NASSCO's Pipeline Assessment Certification Program (PACP) grading system and the results of the grading system are used to determine if system conditions could contribute to the potential for exfiltration or if conditions exist that would result in a sewage spill.

PACP grading is provided in two categories: maintenance and structural scores. The PACP maintenance scores are used to inform cleaning schedules in the Freeflow H20 scheduling system, as described in Chapter 4. If on-going maintenance issues continue that are not prevented by increased frequency of cleaning, O&M staff will evaluate if a repair or replacement project is warranted as a proactive measure to prevent spills. PACP structural scores along with the CCTV inspection results are also evaluated to determine if a repair or replacement project may be necessary due to observed defects that could result in exfiltration or a spill. PACP structural defects recorded as grade 4 and above are all evaluated by the CCTV Operator to determine if a repair work order is necessary, or if inspection frequency should be increased.

Consequence of failure (CoF) and likelihood of failure (LoF) evaluations are used by staff to determine the priority of the repair or replacement. O&M staff consider a variety of inputs after any asset inspection or reported issues of system conditions (e.g. repeated spills in a geographic area) to determine CoF and LoF to evaluate repair, rehabilitation, and replacement needs as presented in the table below. Some of the significant parameters included in the CoF and LoF evaluations that are related to risk of a spill are included in the table below. CoF and LoF approaches differ by asset type and assigned division so that it is integrated with staff's workflow processes and unique considerations of the different asset types. For example, a PACP structural defect of a 5 for a mainline would result in the scheduling of a repair to be performed within a specified timeframe. O&M supervisors review the location of the deficiencies and criticality of the asset to assign work order schedules and staff work assignments.

Likelihood of Failure Considerations	Consequence of Failure Considerations
NASSCO PACP grading scores and descriptions	Location of the asset and any defect, including proximity to sensitive areas and likelihood that a spill could reach sensitive receptors
Observations recorded during preventative maintenance activities and inspections	Potential spill volumes if failure occurs
Asset Information (e.g. age, material and size of the asset)	Likely catastrophic failure (e.g. sinkhole)
Capacity deficiency	Criticality of the asset
Work order history	

Specific spill considerations used for the prioritization of corrective actions and/or condition assessment frequency include the following:

- Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies
- Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas
- Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List

CIP and AM staff holistically evaluate the sewer system using data provided from the inspection results through an asset management model that performs a system-wide risk assessment for gravity mains using InfoAsset Planner (or an equivalent) that will be updated at least every 5 years. A system-wide evaluation was last completed in 2024, which calculated LoF and CoF scores. CoF and LoF analyses are documented in technical reports, spreadsheet evaluations, DOU-maintained databases, third-party tools, or described in work order prioritization rationales.

DOU maintains maps of areas with high groundwater elevations, environmentally sensitive areas, waterways, drainage features, and bacterial-related impairments. These maps can be overlaid against sewer assets and are taken into account when the results of the condition assessment are reviewed during the holistic evaluation conducted by AM and CIP staff. AM and CIP staff may recommend higher frequency of inspections in areas of concern.

Repair or replacement projects identified by O&M are scheduled through the creation of a repair work order and all projects are documented in CMMS along with all inspection records for assets. If the corrective action cannot be implemented promptly, the inspection frequency will be increased or other measures will be put in place to monitor the situation depending on the LoF and CoF. If the repair or replacement of an asset cannot be completed by O&M staff (i.e. specialized equipment needs, repair is greater than $20,000, or engineering design services are required), then a CIP work order is generated by the O&M supervisor. CIP work orders are also generated by CIP staff based on the LoF and CoF scores from system evaluations or the capacity assessments described below.

CIP work orders are prioritized using the process described below in Section 8.4. In some cases, a temporary repair by O&M will be conducted while waiting for a CIP work order.

For all system evaluation and condition assessment processes, DOU maintains documents and record keeping of all condition assessment inspections, risk information, and other methods used in the identification of projects for repair, rehabilitation, or replacement, which may include desktop evaluations, risk models, and other tools. Any gaps in condition assessment needs identified during audits or annual reviews are added to the schedule in Appendix A to describe the process to establish condition assessment frequencies and prioritization.

O&M, CIP, and Engineering have regular meetings to discuss system evaluation and condition assessment results to collaborate on next steps and current status information.

8.3 Capacity Assessment and Design Criteria

Pipes are sized to convey sewer flows today and into the future, based on factors such as historic and current flow rates, zoning designations, and anticipated buildout of development projects. The City of Sacramento's current design criteria is based on peak wet weather flow conditions that includes region-specific estimates for groundwater and rainfall-dependent inflow and infiltration (RDII) for a 10-year storm event.

Capacity assessments evaluate the sewer system to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity by assessing the following:

- Wet-weather peak flow conditions with groundwater and RDII
- Dry-weather peak flow conditions
- Deficiencies identified from historic conditions or older design/construction standards as compared to current design standards
- The capacity of key system components such as large volume trunk or interceptor lines, large volume pump stations

The capacity assessments identify information gaps, existing conditions that may cause or contribute to spills, and evaluate capacity under future predicted conditions. Engineering staff document capacity assessment procedures and results through technical memorandums, which provide a general overview of hydraulic conditions. The data generated through initial capacity assessments is used as a screening tool to determine if a more detailed dynamic assessment is warranted and also used to assess capacity when new development is proposed.

Capacity assessments are informed by the following considerations:

- Data from system condition assessment results, system inspections, system audits, spill history, and other available information
- Regional evaluations of infiltration and inflow

Capacity assessment are based on the best available data from electronic records and the City's GIS database. Capacity assessments are conducted in accordance with the processes in City of Sacramento Design and Procedure Manual (DPM) as described in Chapter 5. The DPM is regularly updated, and during those updates the following are evaluated for consideration:

- Review of storm events and regional coordination regarding design-storm event sizing
- Design standards are adequate to ensure system resilience

Basins noted with capacity deficiencies based on modeling, historical knowledge, system observations, customer reports, flow meter data, development needs, or other available information are prioritized to be studied further using refined data and dynamic hydraulic modeling to have improved understanding of potential capacity limitations. The refined basin studies are used to improve data used in comprehensive Basin Master Plans, identify potential capacity improvements or identify additional study needs. All the information from capacity assessments is continuously incorporated into the 5-year or 30-year budgeting plans for CIP.

Because portions of the Sacramento area are at risk of flooding and subject to high groundwater, capacity assessments include regional estimates from likely sources of infiltration and inflow either based on regional knowledge (i.e. groundwater levels) or direct observations from flow metering. Evaluations of design storm sizing is updated based on regional coordination. Coordination on impacts of climate change on storm depths and intensity to inform potential changes to infiltration and inflow is an on-going effort coordinated between the City of Sacramento and SacSewer. Results of regional coordination on climate change impacts and resiliency will be incorporated into the DPM during the routine update process.

Capacity assessment for the combined sewer system is described in more detail in the CSS Long Term Control Plan. The CSS Long Term Control Plan has an evaluation of climate change and impacts to changing precipitation patterns.

8.4 Prioritization of Corrective Action

Findings of the condition assessments and capacity assessments are utilized in the project prioritization process.

In addition to the methodology outlined in this chapter, O&M will provide direct notification to engineering staff of assets in need of repair, replacement, or rehabilitation that are outside the capability of O&M staff to perform internally.

A CIP Work Order is generated by either O&M or Engineering staff based on the condition assessment or capacity limitations identified. The CIP Work Orders are prioritized using an overall risk score (consequence of failure and likelihood of failure). The CIP Work Orders are tracked in Cityworks with the current status and reviewed during regular coordination meetings between O&M and engineering staff. An overall ranking is used to prioritize the CIP Work Orders that takes into account:

DOU considers the following criteria for prioritizing a CIP project:

- Structural Assessment Results and Design Life/Best Replacement Practices
- Likelihood of Failure based on PACP structural scores
- Consequence of Failure based on a variety of factors, including but not limited to:
    - Severity of the consequences of potential spills
    - Proximity to waterways
    - Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas
    - Hold a high level of health/safety and economic consequences

- Regulatory considerations
    - Required by health, safety, or environmental regulatory requirements
    - Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List

- Other factors for project needs are based on optimization of funds, including, but not limited to:
    - Reduces maintenance costs
    - Improves reliability and reduces service interruptions
    - Construction costs
    - Addresses existing capacity limitations
    - Meets demands of increased growth
    - Ability to fund projects utilizing grants or other revenue.

Capacity assessments are also used to inform the development of long-term planning via the 30-year CIP budget and improvements needed for future build-out projects based on best available data.

8.5 Capital Improvement Plan

Engineering staff manages a 5-year and a 30-year CIP list that is updated annually. The 5-year list is based on the above prioritization process, asset replacement needs, capacity assessment needs, long-term planning needs, and other inter-department or external-agency cost-share needs (e.g. SacSewer). The CIP includes a fund (Capital Reserve Fund) for unplanned emergency projects. Once funding is approved for the 5-year CIP list, then prioritized projects are earmarked for available funding. The 30-year CIP list is used to project long-range rate planning needs, and is inclusive of all needs at all priority levels.

After funding is secured for a prioritized project, the CIP project is formally established with the creation of a Project Report, which contains the project scope and objectives, describes the project costs and funding sources, provides a preliminary project schedule, includes an alternative analysis, and identifies the project stakeholders including external stakeholders such as SacSewer. The project status and phase is tracked by the project manager. Project status is discussed regularly with O&M.

Project managers maintain projects reports and project contracts, which specify project schedules including completion dates.

CIP Funding

The City's five-year Capital Improvement Program document contains funding source information and is available at https://www.cityofsacramento.gov/finance/budget and is published annually.

CHAPTER 9 – MONITORING, MEASUREMENT, & PROGRAM MODIFICATIONS

This chapter of the SSMP discusses the City's Monitoring, Measurement, and Program Modifications. The information presented complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

9.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan must include an Adaptive Management section that addresses Plan-implementation effectiveness and the steps for necessary Plan improvement, including:

- *Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities;*
- *Monitoring the implementation and measuring the effectiveness of each Plan Element;*
- *Assessing the success of the preventive operation and maintenance activities;*
- *Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and*
- *Identifying and illustrating spill trends, including spill frequency, locations and estimated volumes.*

9.2 Audit Findings

Audit findings, and a schedule of recommended activities to address identified deficiencies, are incorporated into this SSMP within Appendix A. Audit findings are shared with relevant sections and stakeholders within DOU. Implementation is monitored ongoing through routine SSMP meetings that assess and track progress of proactive and corrective actions. Annual progress on audit findings and schedule of corrective actions are maintained by the Environmental and Regulatory Compliance Section.

9.3 Effectiveness Assessment of SSMP Elements

Table 9-1: Performance Metrics on the following pages lists metrics which will be evaluated to assess the effectiveness of each element of the SSMP.

Table 9-1: Performance Metrics

Element	Effectiveness Assessment
1 - SSMP's Goals and Introduction	1. Has the schedule been adhered to for conducting SSMP audits and addressing corrective actions from the audit? 2. Has the schedule for updating the SSMP been adhered to and a change log been maintained? 3. Is the sewer system management program description in Chapter 1 and are the asset management data within the SSMP Appendix B updated annually, during the annual report by the Environmental & Regulatory Compliance Section? 4. Are the sanitary sewer system asset maps for the specified assets up to date within DOU's GIS, based on best available knowledge?
2 - Organization	1. Are the organizational charts updated annually in the SSMP appendices? 2. Is the contact information updated annually, and is there a contact list for spill responsibilities maintained for on-call assignments? 3. Are there at least two LRO assigned to ensure back-up responsibilities? 4. Do the assigned LRO personnel meet the criteria, as described in the 2022 State WDR? 5. For Appendix C, are personnel updates reviewed annually or when there is an LRO update, and are any changes reflected in the SSMP Change Log? 6. Is more than one staff member trained on all duties within SSMP elements as reflected in the SSMP Contact List?
3 - Legal Authority	1. Has an annual review of the City's codes and ordinances been conducted? 2. Has a review of spill causes, spill volumes, or enforcement actions related to effectiveness of legal authority been conducted, and were there any gaps identified?
4 - Operation and Maintenance Program	1. Are the agency's maintenance, operations, and engineering work orders periodically reviewed for accuracy and completeness? Does the agency monitor "open," "overdue," or "not yet completed" work orders to ensure completion of tasks? 2. Is a review of work orders performed annually and provided to ERC by O&M? 3. Hot Spots – what percent of the system is on a higher frequency schedule, and due to what problems? 4. Training – Annual review of training events to assess the following: a. Has all training been completed as scheduled? b. Have consistent records of training and attendance been consistently documented and maintained? 5. Equipment Inventory – Annual review of equipment inventory to assess the following: a. Have any inventory deficiencies or omissions been discovered and rectified? b. Has the agency experienced any lack of critical spare parts that inhibited a spill response? 6. Adaptive management – Are procedures updated when gaps are found? 7. Was QAQC process followed for post cleaning assessment?

5 - Design and Performance Provisions	1. Has the City in the last year reviewed any gaps, needs, or changes to the design and construction standards, specifications, and inspection procedures?
6 - Spill Emergency Response Plan	1. Was annual training conducted and documented for the SERP? 2. Were contractors working on the sanitary sewer system trained on the SERP? 3. Was an annual review conducted of a sampling of field response forms? If gaps were identified, were changes in training and procedures made? 4. Were any changes to the Spill Emergency Response Plan needed? 5. Was an annual review of interagency contacts during spill response performed? 6. Did training include volume estimation, notification, and reporting requirements? 7. Were training logs of all attendees kept? 8. Were skill checks performed on SERP training? 9. Has an annual review of the contact list been conducted?
7 - Sewer Pipe Blockage Control Program	1. Has the FOG inspection schedule been adhered to? 2. Were any spills due to grease on assets downstream of an FSE? 3. Was public outreach conducted to responsible parties regarding sewer pipe blockages? 4. Are outreach materials available to educate residents on blockages? 5. Are educational materials available to FSE inspectors? 6. Was public outreach conducted in coordination with the collection system team? Were corrective issues addressed through progressive enforcement?
8 - System Evaluation, Capacity Assurance, Capital Improvements	1. How many spills were caused by lack of capacity? 2. Were repairs completed in their specified timeframe? 3. Was an annual review conducted by Engineering and Operations of CIP work orders? 4. How many spills were caused by pump station failure? 5. Are conditions that cause and contribute to spills incorporated into CIP long range planning? 6. Are prioritization of CIP informed by required criteria? High level of environmental consequence, adjacent to surface water, in the vicinity of impaired water bodies? 7. Has the agency's 5 year capital improvement plan adhered to?

9 - Monitoring, Measuring, Program Modifications	1. Annual KPIs: spill count by category, spill rate per 100 miles of pipe, median spill volume, volume spilled and volume recovered, spill causes, miles of pipe cleaned, miles of pipe inspected, # of staffed positions, # of pipes with last inspected date greater than 15 years, % of pipe by inspection frequency category, spill response time (notification to arrival time), duration of spill (start to end time) 2. Has the schedule of SSMP gaps been adhered to? 3. Has an annual review of KPIs been conducted?
10 - Internal Audits	1. Was the audit performed by the deadline? 2. Were audit deficiencies incorporated into a schedule? Is that schedule being followed? 3. Was the audit report uploaded into CIWQS and certified by the LRO?
11 - Communication	1. Was input on the SSMP solicited? 2. Is the SSMP available to the public? 3. Does the agency have signage or other means available to notify the public about risks related to a sewage spill? 4. Was there annual outreach to satellite systems regarding communication for a spill?

9.4 Performance Monitoring and Program Changes

DOU will annually evaluate the performance of its wastewater collection system using the performance measures discussed in Table 9-1: Performance Metrics, above. The data will be updated and analyzed to determine whether the elements set forth in this SSMP are effective in accomplishing the established goals. The City may also use other performance measures in its evaluation. Elements of the SSMP will be modified, as appropriate, based on the results of this annual analysis of performance measures. Additionally, elements of the SSMP may be revised based on the results of audits conducted, as described Chapter 10 of this SSMP.

CHAPTER 10 – INTERNAL AUDITS

This chapter describes the methods the City will utilize in evaluating the effectiveness of the SSMP and making revisions to the program. The information presented complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

10.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of the General Order.

10.2 SSMP Audit Schedule and Procedures

In accordance with the SSS WDRs, DOU will conduct internal audits every three years, and will include system operators in its preparation. At a minimum, the audit will include the following activities:

- Evaluate the implementation and effectiveness of the Sewer System Management Plan in preventing spills;
- Evaluate compliance with the General Order;
- Identify Sewer System Management Plan deficiencies in addressing ongoing spills and discharges to waters of the State; and
- Identify necessary modifications to the Sewer System Management Plan to correct deficiencies.

Audit findings and recommended corrective actions will be included in a final report, with a proposed schedule to address identified deficiencies.

Audit due dates and a schedule for planned actions can be found in Appendix A.

SEWER SYSTEM MANAGEMENT PLAN

CHAPTER 11 – COMMUNICATION PROGRAM

This chapter describes the City SSMP communication program. The information presented complies with Attachment D – Sewer System Management Plan Required Elements of the State WDRs.

11.1 State WDRs

As stated per the 2022 State WDRs (Attachment D):

The Plan must include procedures for the Enrollee to communicate with:

- *The public for:*
  - *Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and*
  - *The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.*
- *Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for:*
  - *System operation, maintenance, and capital improvement-related activities.*

11.2 Public Communication Regarding Spills

Procedures for communicating with the public in the event of spills requiring the closure of public areas, or that enter a source of drinking water, can be found in the Spill Emergency Response Plan, included in Appendix E.

11.3 SSMP Public Input Opportunities

The SSMP will be updated every six years, as required by the SSS WDRs, and certified by the City Council at a public meeting. The SSMP is posted to the City of Sacramento website. Public comments on the SSMP are solicited through the posting of the agenda item for the City Council meeting when the SSMP is submitted for review and approval.

11.4 Communication with Connected Sewer Systems

The City of Sacramento coordinates with public sewer systems that are within the jurisdiction or adjacent to DOU's operated sewer system. The boundaries of the DOU's sewer systems are shown in Appendix B. The following public separated sewer systems are adjacent to or within the City of Sacramento:

- SacSewer
- CalExpo

- Sacramento State
- UC Davis Medical Center
- County Parks Department
- County Water Agency

The City coordinates with adjacent sewer systems through the following processes:

- DOU and SacSewer have an MOU that establishes roles and responsibilities for operation and maintenance in areas of joint responsibility.
- Communication with satellite agencies during spills is described in the Spill Emergency Response Plan.
- When public connections are proposed, DOU's development review section works with the property owners to ensure the proposed connection and satellite system is consistent with design standards as described in Chapter 5.
- DOU staff routinely conduct public outreach activities to inform owners/operators of O&M responsibilities during maintenance activities and spill response.
- The City maintains a 311 line for public reports of any system deficiencies or system maintenance needs.

List of Appendices

Appendix A –
Schedule for SSMP Audit and Update with Planned Actions

Sewer System Management Plan & Subsequent Update Due Dates					
System Name	WDID Number	Original Plan Required Due Date	Required Plan Update Due Date	Required Plan Update Due Date	Required Plan Update Due Date*
City of Sacramento Utilities CS	5SSO10901	5/2/2009	5/2/2014	5/2/2019	5/2/2025
City of Sacramento Combined CS	5SSO10901-C	8/2/2009	8/2/2014	8/2/2019	8/2/2025

Audit Due Dates								
System Name	WDID Number	Original Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	End of Required 3-Year Audit Period**
City of Sacramento Utilities CS	5SSO10901	5/2/2011	5/2/2013	5/2/2015	5/2/2017	5/2/2019	5/2/2021	5/2/2024
City of Sacramento Combined CS	5SSO10901-C	8/2/2011	8/2/2013	8/2/2015	8/2/2017	8/2/2019	8/2/2021	8/2/2024

*** Per Section 5.5 and Attachment E1, Section 3.11 of the General Order, Plan updates are due within six years after the required due date of the Enrollee's last Plan Update.**

**** Per Section 5.4 and Attachment E1, Section 3.10 of the General Order, the Audit Report is due within six months after the end of the required 3-year audit period.**

(Page last updated 01/09/2023)

Source: California Water Boards Sewer System Management Plan and Program Audit Due Dates Look Up
https://www.waterboards.ca.gov/water_issues/programs/sso/lookup/

City of Sacramento

SSMP Schedule of Planned Actions

Legend: ⇔ Ongoing task; ♦ Permit Deliverable

Activity/Task	Permit Ref	SSMP Chapter Ref	Scheduled FY24/25	Scheduled FY25/26	Scheduled FY26/27	Due Date/ Status/Other Notes
Submit CIWQS Annual Report	5.11		⇔♦	⇔♦	⇔♦	Due each year by April 1
Conduct SSMP Internal Audit	5.4 ; Attachment D	1 ; 10	⇔♦			Every 3 years. Audit Period ends 5/2/24. Audit report due within 6 months.
Update SSMP	5.5	1		⇔♦		Every 6 years. Next update due 5/2/25
Submit Electronic Sanitary Sewer System Service Boundary Map, as required by WDRs	5.14			♦		LRO must submit to State Water Board between dates of July 1, 2025 and Dec 31, 2025.
Annually review and assess effectiveness of the Spill Emergency Response Plan, and update as needed	Attachment D	6	⇔♦	⇔♦	⇔♦	
Continue preventative maintenance and CCTV inspection to determine if higher frequency inspection and maintenance is required for known problem areas	Attachment D	4	⇔	⇔	⇔	
Annual training for systems operations and maintenance staff on the requirements of the General Order, Spill Emergency Response Plan, spill volume estimation, and CIWQS reporting procedures for staff submitting data	Attachment D	4 ; 6	⇔♦	⇔♦	⇔♦	
Continue public education and outreach program that promotes proper disposal of pipe-blocking substances	Attachment D	7	⇔♦	⇔♦	⇔♦	
Continue system evaluation and condition assessment to identify and prioritize corrective actions	Attachment D	8	⇔	⇔	⇔	
Continue capacity assessment to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity	Attachment D	8	⇔	⇔	⇔	
Annually evaluate performance of wastewater collection system using Performance Measures to identify spill trends which may indicate a need to adjust SSMP activities	Attachment D	9	⇔♦	⇔♦	⇔♦	

Element	Item No.	Audit Findings	Description	City of Sacramento Proposed Action Items	Schedule
D-2	1	Open Positions (see Appendix 1, Table 6)	The Audit revealed the City currently has a total of 5 vacant open positions for O/M (1 lead and 4 service workers) which have proved difficult for Utilities management to backfill in a timely manner; the City should evaluate workload associated with reissued SSS WDR to determine necessary staffing levels to stay in compliance.	Evaluate workload and incorporate in rate planning efforts.	11/2/24 - 5/2/2027
D-4	1	Critical Parts Ordering	The City has significant internal issues procuring backup supplies and equipment impacting O/M and critical spare parts for the sanitary sewer collection system.	Review procurement process for critical parts.	11/2/24 - 5/2/2027
D-4	2	Critical Parts Inventory	The City could further improve its existing list of identified critical parts/inventory for the sanitary sewer system.	Establish inventory for critical parts.	11/2/24 - 5/2/2027
D-4	3	Standard Operating Procedures (SOPs)	The City could further improve its critical Standard Operating Procedures (SOPs), including standardizing them for consistency for all O/M staff, incorporating Superintendent expectations for pertinent Reissued Order requirements (SERP, etc.), reviewing them periodically with field staff before/during trainings for ensuring any required necessary improvements/changes are incorporated.	Review SOPs for consistency with Reissued SSS WDR, and establish schedule for revising SOPs.	11/2/24 - 5/2/2027
D-4	4	Pump Station Manholes	The City could further improve identification of all lowest upstream manhole locations that could spill for all pump station assets	Review process for evaluating lowest upstream manhole locations. As basin models are updated, improved data will be incorporated into GIS.	11/2/24 - 5/2/2027
D-4	5	Open Work Orders	The City could further improve auditing open work orders.	Establish annual QA/QC process to evaluate open work orders.	4/1/2026
D-4	6	Force Main Sewers	The inspection and the City's previous Audit revealed by the City lacks a force main condition assessment program including a formal maintenance program/inventory for all air release valves and having adequate spare/repair parts in stock including larger diameter force main sewer (pipe/couplings) for emergency repairs.	Establish and evalute Pilot Program for Force Main Sewer Evaluations.	11/2/24 - 5/2/2027
D-4	7	Pump Station Emergency Plans	The City lacks individual emergency response plans for each of all pump stations for ensuring proactive emergency preparedness and effective emergency response operations for spills	Finalize template for Emergency Response Plans and complete 10. Develop a prioritization process for completing remaining Emergency Response Plans.	11/2/24 - 5/2/2027
D-4	8	Sewer Root Control	The City could further improve its ongoing root control program efforts.	Evaluate effectiveness of root control options. Determine if SOP should be developed. Summarize approach of root control maintenance processes in updated SSMP.	2026
D-6	1	Training/Records (see Appendix 1, Table 6):	The inspection revealed the City could further improve its existing Spill Emergency Response Plan training/records for internal field staff/contractors expanding on training content, competency checks, and trainer qualifications. The City should incorporate upgrades to its internal training records and document this improvement in its SSMP Change Log and 2025 SSMP Update when completed.	Training tracking, competency records will be tracked and evaluated annually. Process will be described in updated SSMP.	2025
D-8	1	Capital Improvement Program	The inspection including detailed discussions about the City's extensive sewer Capital Improvement Programs (CIPs) covering both its separate and combined sanitary sewer systems. The City should ensure its Capital Improvement Plan (CIP) description for the separate sewer system include sufficient information about the City's strategies and projects for incorporation into the City's next upcoming SSMP Update (due before 5/2/2025). This information should at a minimum include capital project descriptions, schedules, completion dates planned, funding sources, and verification of joint coordination between operations and engineering for the separate sanitary sewer system to comply with Att. D-8 of the Reissued WDR. The City should also provide a list of completed capital projects for the separate sanitary sewer system (planned/completed past 3 years) into its SSMP Update and a list of specific capital project commitments planned for the next 3 years prior to completion of its next required SSMP Audit, due by 11/2/2027.	Describe process in updated SSMP.	May 2025
D-8	2	Capacity/Funding:	The Pre-Inspection Conference revealed the City lacks a formal program for ensuring adequate capacity/funding for the separate sewer system. The City stated it is currently refining its existing capacity evaluation program with established funding to continue this effort.	Describe process in updated SSMP.	May 2025
D-8	3	Climate Impacts/Vulnerabilities:	The Audit revealed the City should expand its assessment of areas in the system potentially vulnerable to climate impacts. These enhancements could be considered for inclusion in the next SSMP Update once implemented.	Describe process in updated SSMP.	May 2025
E-1	1	Notification, Monitoring, Reporting, Record Keeping	To improve implementation, the City should address each of the following Area of Concern (AOC) revealed during the Audit prior to completing the next SSMP Update including development of improved internal procedures for ensuring notification and reporting deadlines are not missed to avoid future violations of the Reissued WDR.	Training will be updated to emphasize importance of spill start time, reporting deadlines, and spill investigation expectations to improve internal documentation.	2025

Appendix B –
Sewer System Asset Overview

Sewer System Overview

Information below pertains to City of Sacramento's separated sewer system. Combined system data is not included.

Location, including county(ies)	Sacramento County (see map for additional details)
Population and community served[1]	Approx 160,000 residents
Sewer mains total length[2]	4.7 miles force mains + 473.8 miles gravity mains
Number of pump stations[2]	44
Number of siphons[3]	6
Structures diverting stormwater to the sewer system	Not applicable
Estimated number or percent of residential, commercial, and industrial service[4] connections[4]	Approx 48,000 connections (97% Residential ; 3% Commercial)

Sources:

[1] Population provided by GIS Specialist using Census data. Data pulled January 2025

[2] DOU Information Hub Sewer System Dashboard. Data pulled 4/9/25

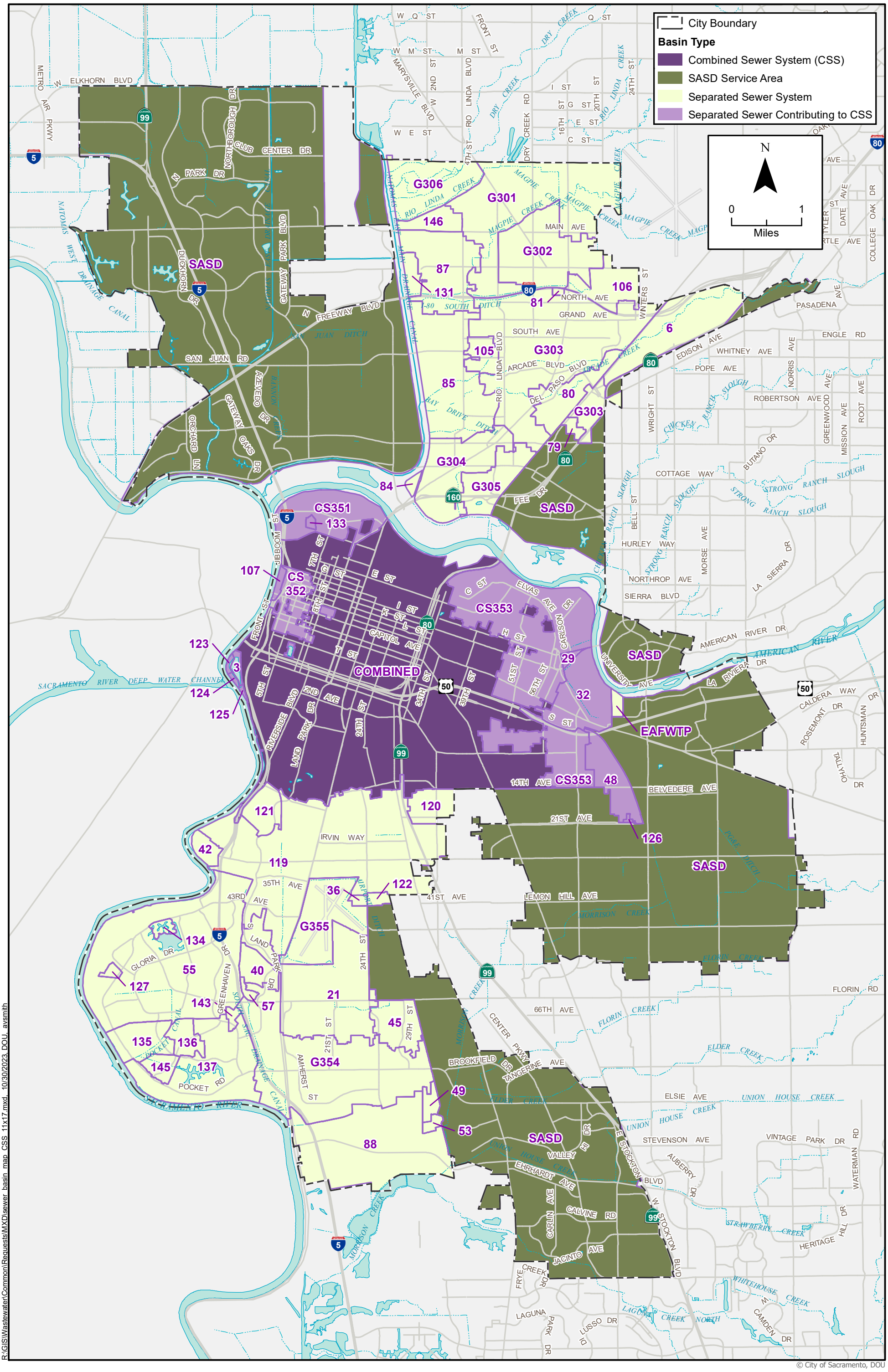
[3] Provided by GIS Specialist through internal query process. Data pulled March 2025

[4] Residential and commercial connection information provided by CCB database administrator, then filtered to separated system by GIS Specialist. Data pulled March 2025

City of SACRAMENTO
Department of Utilities

VICINITY MAP

City of Sacramento Sewer System

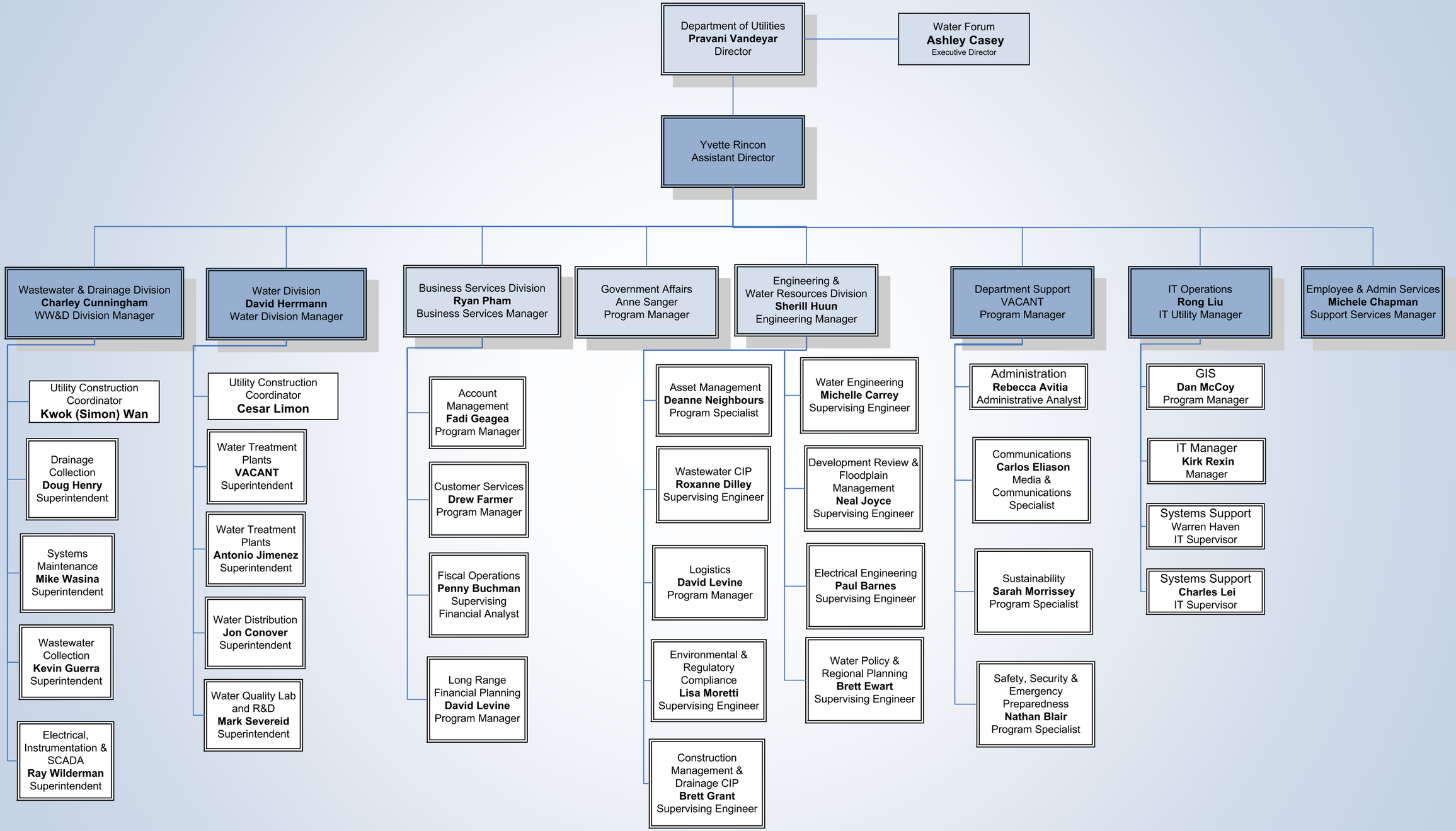


R:\GIS\Wastewater\Common\RequestsMXD\sewer basin map CSS 11x17.mxd, 10/30/2023, DOU, avsmith

Appendix C – Department of Utilities Organizational Chart

Department of Utilities

January 29, 2025



Appendix D –
SSMP Contact List

SSMP CONTACT LIST

Title	Name	Phone	e-mail *	SSMP Element(s) Area(s) of Responsibility
Wastewater and Drainage Division Manager	Charley Cunningham, **LRO**	(916) 808-5518	CCunningham	1, 2, 4, 6, 7, 8, 9, 10, 11
Wastewater Collection Superintendent	Kevin Guerra, **LRO**	(916) 808-4022	KGuerra	1, 2, 4, 6, 7, 8, 9, 10, 11
Wastewater Collection Supervisor	Kevin Waller, **LRO**	(916) 808-6905	KWaller	2, 4, 6, 7, 8, 9, 10, 11
Wastewater Collection Supervisor	Paolo Ferro	(916) 808-6698	PFerro	4, 6, 7, 8, 11
Wastewater CCTV Supervisor	Dave Sorenson	(916) 808-6233	DSorenson	4, 6, 7, 8, 11
Wastewater Supervisor Operations & Maintenance	Seth Ogden	(916) 808-6904	SOgden	4, 6, 7, 8, 11
Wastewater Repairs Supervisor	Matt Hart	(916) 808-6699	MHart	4, 6, 7, 8, 11
Systems Maintenance Superintendent	Mike Wasina	(916) 808-7830	MWasina	4, 6, 7, 8, 11
Supervising Plant Operator	Phil Meyer	(916) 808-5286	PMeyer	4, 6, 7, 8, 11
Supervising Plant Operator	Philip Myers	(916) 808-5229	PMyers	4, 6, 7, 8, 11
Supervising Plant Operator	Grant Moore	(916) 808-7955	GEMoore	4, 6, 7, 8, 11
Drainage Collection Superintendent	Doug Henry	(916) 808-6955	DHenry	4, 6, 11

Title	Name	Phone	e-mail *	SSMP Element(s) Area(s) of Responsibility
Wastewater Drainage Program Specialist	Elizabeth Navarrete, **DS**	(916) 808-6923	ENavarrete	1, 2, 4, 6, 7, 8, 9, 10, 11
Wastewater Drainage Administrative Analyst	Rondina Hom, **DS**	(916) 808-4956	RHom	4, 6, 7, 8, 9, 10, 11
Wastewater Drainage Administrative Analyst	Kyla Shufelberger, **DS**	(916) 808-7076	KShufelberger	4, 6, 7, 8, 9, 10, 11
Wastewater Collection Administrative Technician	Alfred Sarra, **DS**	(916) 808-4017	ASarra	4, 6
Engineering Division Manager	Sherill Huun	(916) 808-1455	SHuun	All
Environmental & Regulatory Compliance Supervising Engineer	Lisa Moretti	(916) 808-5390	LMoretti	All
Environmental & Regulatory Compliance Administrative Analyst	Amy Farmer, **DS**	(916) 808-6944	AEFarmer	All
Environmental & Regulatory Compliance Program Specialist	Michael Fontana, **DS**	(916) 808-1450	MFontana	3, 4, 6, 11
Business Services Division Manager	Ryan Pham	(916) 808-4928	RPham	1
Safety Officer	Stephanie Mendenhall	(916) 212-7691	SMendenhall	4, 6
Media and Communications Specialist	Carlos Eliason	(916) 808-6839	CEliason	7
Public Affairs Administrative Analyst	Emma Burke	(916) 808-7157	EBurke	7

Title	Name	Phone	e-mail *	SSMP Element(s) Area(s) of Responsibility
Asset Management Program Specialist	Jonathan Nottage	(916) 808-3537	JNottage	8
Information Technology Manager	Rong Liu	(916) 808-1979	RLiu	1
GIS Supervisor	Nathan Jennings	(916) 808-7857	NJennings	1
Wastewater CIP Supervising Engineer	Roxanne Dilley	(916) 808-1458	RDilley	5, 8, 9, 10
Senior Engineer	Humberto Amador	(916) 808-5411	HAmador	5
Development Review and Floodplain Management Supervising Engineer	Neal Joyce	(916) 808-1912	NJoyce	5
Water & Sewer Superintendent	Ray Wilderman	(916) 808-8067	RWilderman	4, 6, 8

* All e-mails are on the domain: @cityofsacramento.org
LRO- Legally Responsible Official
DS- Data Submitter
Chart last updated 1/28/2025

Appendix E –
Spill Emergency Response Plan

SANITARY SEWER SYSTEM

SPILL EMERGENCY RESPONSE PLAN

PREPARED BY: CITY OF SACRAMENTO, DEPARTMENT OF UTILITIES

JUNE 2023

TABLE OF CONTENTS

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FIGURES

ATTACHMENTS

Acronyms, Abbreviations and Definitions

Cal OES – California Governor's Office of Emergency Services (formerly called California Emergency Management Agency)

CDFW – California Department of Fish and Wildlife

Central Valley Water Board - Central Valley Regional Water Quality Resources Board

CIWQS (California Integrated Water Quality System)- The State Water Board's electronic database used to enter regulatory required reports and information related to spills from the sewer system.

Central Valley Regional Water Quality Control Board - Central Valley Water Board

Combined Sewer System (CSS) – The collection and conveyance system for wastewater and storm water in a single pipe to a treatment facility. The City of Sacramento's CSS includes the collection system, pump stations, storage facilities, the Combined Wastewater Treatment Plant, Pioneer Reservoir Treatment Plant, and other miscellaneous ancillary facilities.

Combined Sewer System Outflow (CSS Outflow) - A release of untreated or partially treated combined wastewater and storm water from the CSS due to surcharge from wet weather or system blockage.

Combined System Overflow (CSO) – a discharge of wastewater and stormwater flows from a combined sewer system discharge point and/or treatment facility to the Sacramento River as regulated under the CSS NPDES Permit. CSOs discharged from the Combined Wastewater Treatment Plant and Pioneer Reservoir Treatment Plant are referred to as treated CSOs.

County Health Department – Sacramento County Department of Health and Human Services

Drainage Conveyance System – A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater and non-stormwater flows. This excludes any storm drain facilities connected to the CSS (these facilities are considered to be combined sewer facilities).

Exfiltration - Exfiltration is the underground exiting of sewage from a sanitary sewer system through cracks, offset or separated joints, or failed infrastructure due to corrosion or other factors.

ERC – Environmental & Regulatory Compliance

LRO – Legally Responsible Officer

NPDES – National Pollutant Discharge Elimination System

O&M – Operations & Maintenance

PIO – Public Information Officer

Private Sewer Lateral – A customer's private sewer line that connects to the city sewer main, including that portion of the private sewer line located within the public right-of-way.

Regional San - Sacramento Regional County Sewer District

Sac Sewer - Sacramento Area Sewer District

Sanitary Sewer System - A sanitary sewer system is a system that is designed to convey sewage, including but not limited to, pipes, manholes, pump stations, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a wastewater treatment plant headworks, including:

- Laterals owned and/or operated by the Enrollee;
- Satellite sewer systems; and/or
- Temporary conveyance and storage facilities, including but not limited to temporary piping, vaults, construction trenches, wet wells, impoundments, tanks and diversion structures.

Sanitary Sewer System (SSS) – Includes all pipes, valves, pump stations, manholes, siphons, wet wells, diversion structures and/or other pertinent infrastructure, owned and operated by the City of Sacramento that is upstream of a wastewater treatment plant headworks.

SCADA – Supervisory Control and Data Acquisition

Sewage – Sewage and its associated wastewater, is untreated or partially treated domestic, municipal, commercial and/or industrial waste (including sewage sludge), and any mixture of these wastes with inflow or infiltration of stormwater or groundwater, conveyed in a sanitary sewer system.

SOP – Standard Operating Procedures

Spill - A spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a spill under this General Order if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

SSMP – Sanitary Sewer Management Plan

SSS WDR – Statewide Waste Discharge Requirements General Order for Sanitary Sewer

State Water Board – California State Water Resources Control Board

Surface waters – Creeks, streams, ponds, lakes, and rivers, regardless of flow or whether water exists during dry conditions. These do not include drainage conveyance systems.

Waste - Waste, as defined in Water Code section 13050(d), includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

SECTION I. Introduction

This Spill Emergency Response Plan (Response Plan) for the City of Sacramento (City) provides operational procedures to be followed in the event of a spill from the City-operated collection system for the separated sewer system (SSS) or the combined sewer system (CSS). **Figure 1.0** and **Figure 2.0** on the following pages show each system's area within the City's boundaries. This Response Plan was prepared in accordance with the State Water Resources Control Board's (State Water Board) Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems Order 2022-0103-DWQ (SSS WDR).

This Response Plan includes procedures for the following, as required per the SSS WDR in Attachment D, Section 6 in the referenced sections:

- Spill Notification (Section II.7)
- Spill Containment and Mitigation (Section II.3)
- Documentation and Reporting (Section II.6 and Section II.7)
- Emergency System Operations (Section II Spill Response Procedures)
- Inter-Agency Coordination of Activities (Section II.2 and Section II.10)
- Post-Spill Assessments of Spill Response Activities (Section II.6)
- Training (Section III)

The SSS WDR defines a spill, previously referred to as a sanitary sewer overflow (SSO), as any discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. These include:

- Spills that reach surface water
- Spills that exit the sanitary sewer system that do not reach waters of the United States
- Wastewater backups into buildings and onto private property that are caused by blockages or flow conditions within the publicly-owned portion of the sewer system.

Spills do not include:

- Sewage discharges into temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.)
- Exfiltration, sewage that has flowed out of a pipe through a crack, break, or other pipeline defect and is confined to the subsurface areas. These are not considered spills *if the sewage has not migrated to a surface water*.

The CSS is regulated under a National Pollutant Discharge Elimination System (NPDES) permit and the United States Environmental Protection Agency Combined Sewer Overflow (CSO) Control Policy. CSOs from the CSS treatment plants and permitted outfalls to the Sacramento River are not considered spills and are not included in this plan. However, spills that generate from the CSS collection system are included in this plan.

Figure 1.0: *City of Sacramento Sewer System*

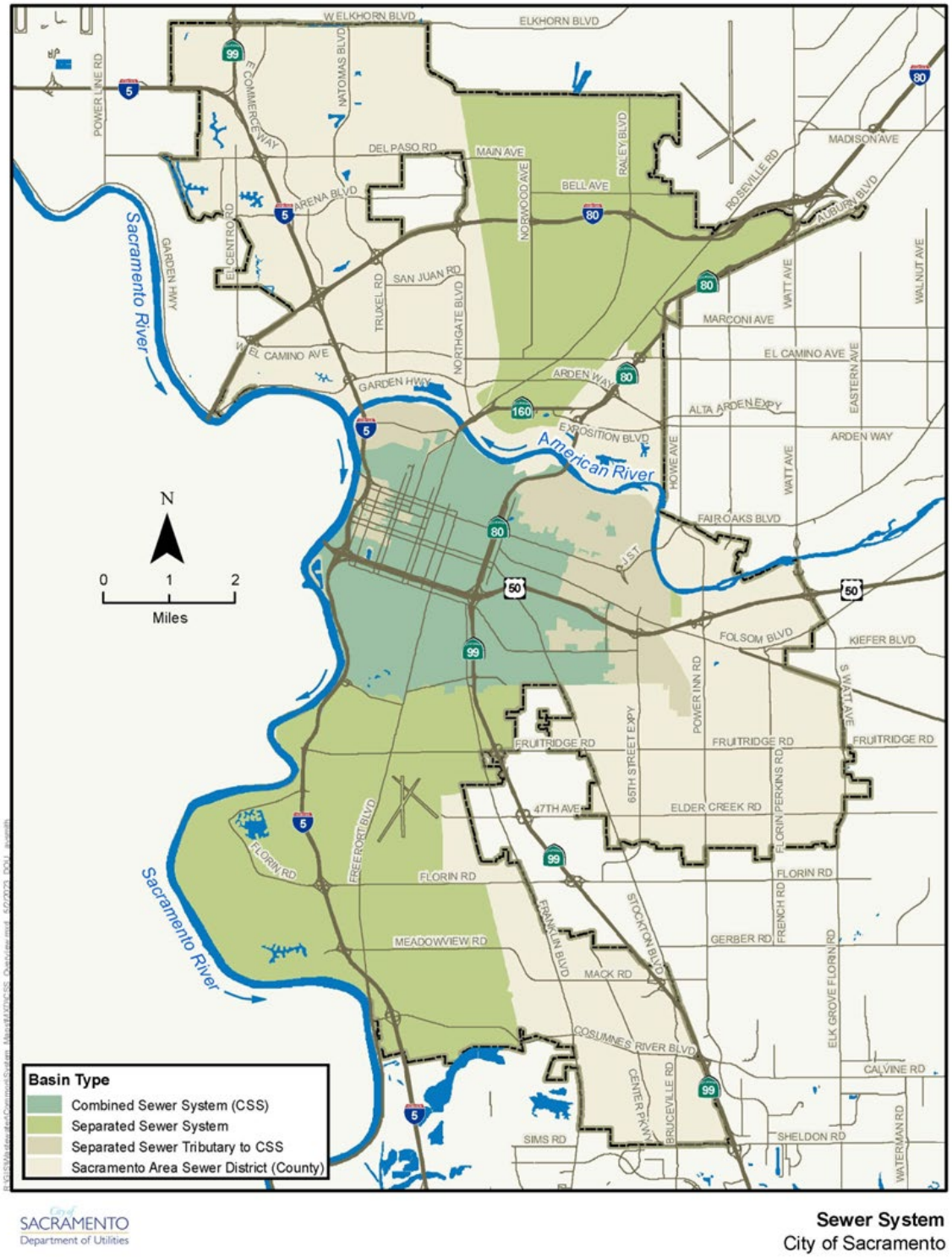
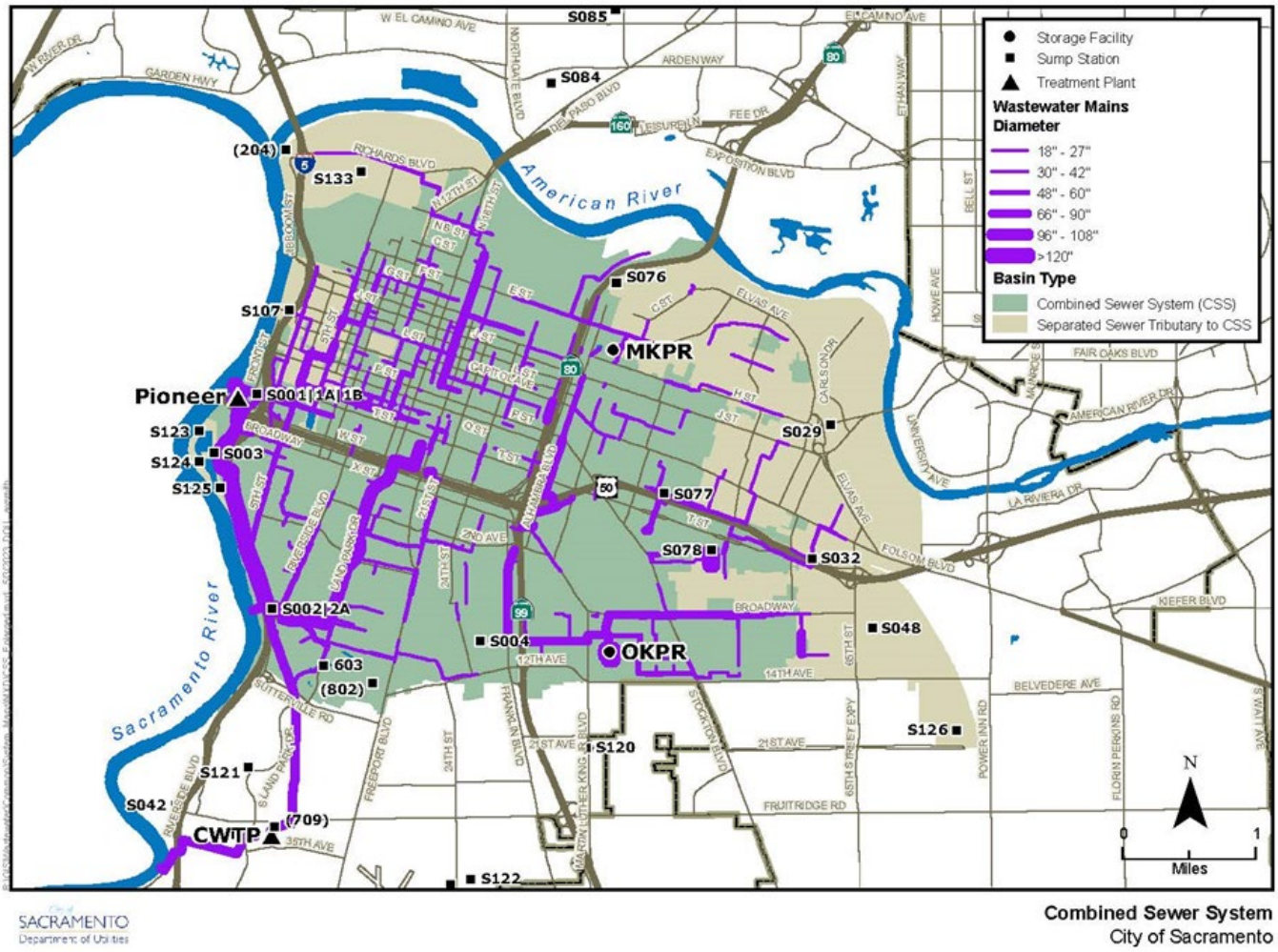


Figure 2.0: *City of Sacramento Combined Sewer System*



1.0 Purpose and Scope

The purpose of this Response Plan is to identify the necessary procedures for notification, response, reporting, and clean-up of spills that may occur in the sewer collection system. The Spill Emergency Response Plan describes the internal procedures followed during spill response and the necessary communication with external agencies. When responding to spills, the primary goals are to:

1.0) Protect public health
2.0) Protect local waterways, and
3.0) Prevent property damage.

These primary goals are in alignment with the SSS WDR's requirements that Enrollee's respond to spills in a timely manner that minimize water quality impacts and nuisance. Through implementation of this plan, the City will take all necessary steps for:

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

This Spill Emergency Response Plan operates in conjunction with the City of Sacramento Department of Utilities Emergency Operations Plan. This document is also referenced in and relates to various City Drainage and Wastewater Operations and Maintenance (O&M) Standard Operating Procedures (SOPs). These SOPs are routinely updated as needed. Additionally, this Response Plan operates in conjunction with the wastewater operating agreements between Sacramento Area Sewer District (Sac Sewer), Sacramento County Regional Sanitation Agency (Regional San), and City of Sacramento.

2.0 Spill Detection

Generally, the City is notified of a spill via phone call from the public, receipt of a pump station or SmartCover alarm, or an observation by City staff during the normal course of their work.

Public Observation and Emergency Communications

Public observation is the most common way the City is notified of spills. Contact information for reporting these events is available in numerous public outreach materials, including the phone book, the City's website at www.cityofsacramento.org, and the City's Mobile 311 Self-Service Application.

During Normal Work Hours

All reports of spills are routed through the City's "311" reporting number to Control 1 Operator staff. This includes emergency calls received by the Fire Department or by the Police Department Dispatch, 911 Emergency calls, Department of Utilities Customer Service calls, or calls to other City services offices. The Control 1 Operator receives the call, obtains the relevant information from the caller, and communicates the incident to Wastewater or Drainage Field Crew staff. Field Crews will then notify the supervisor.

After Normal Work Hours

All after-hours emergency calls to "311" are directly routed to the on-call Wastewater or Drainage Supervisor, who then dispatches a Field Crew. The home and/or cell phone numbers of relevant O&M staff are kept on file and available for use for making contact during potential emergencies.

Sump Station Alarms

Sump station equipment failures or other sump station operating conditions can result in spills in the upstream or downstream pipe network connected to the sump station. Accordingly, each station is equipped with a Supervisor Control and Data Acquisition System (SCADA) alarm system, which detects and sends alarms in response to sump failures, high and low wet well levels, and power outages. Some sump stations also have an audible alarm and signage indicating the City's contact information should an alarm be sounding. The SCADA control system is continually monitored.

In the event of a triggered alarm at a wastewater sump station, the respective sump station SCADA system notifies the City's Control 12 center. A Control 12 operator will then dispatch System Maintenance staff to evaluate the potential equipment failure or adverse station operating condition. System Maintenance staff will immediately notify the Wastewater Collection On-Call Supervisor should the wastewater sump station equipment failure or operating condition impact the pipes connected to the facility.

O&M Staff Observation

Wastewater and Drainage O&M staff conduct periodic inspections of the wastewater and drainage collection system facilities as part of their routine work. This is also done during wet-weather Rain Patrol. Both emergency and non-emergency problems within the collection system for SSS and CSS facilities are reported to the appropriate Wastewater Supervisor.

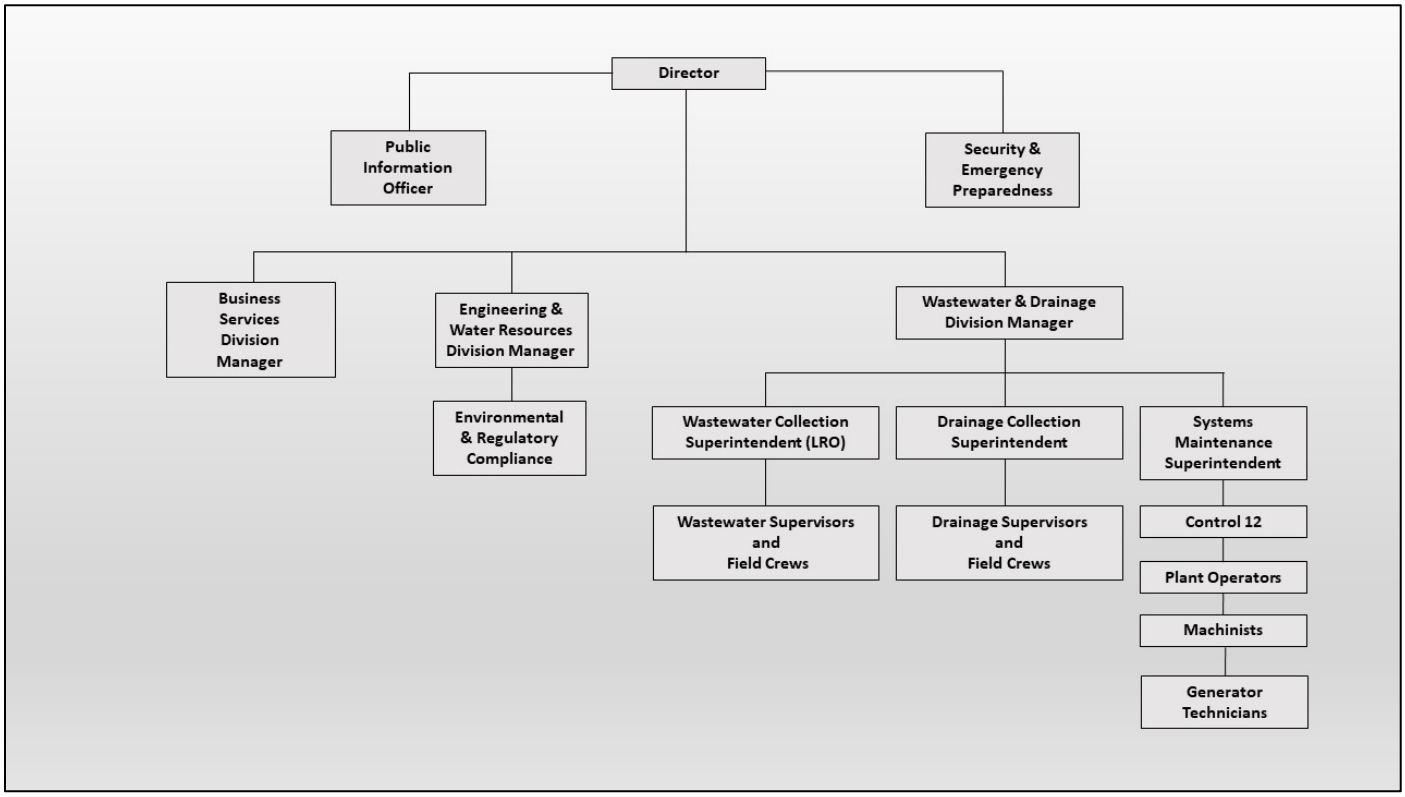
Sewer "SmartCover" Manhole Covers

The City has strategically installed several SmartCover® manhole covers throughout the wastewater collection system that continuously monitor the water level within a given manhole. When the water level rises above the predetermined threshold due to water intrusion from rain or a downstream blockage in the pipe, an alarm is sent directly to a Wastewater O&M Supervisor. This enables the City to receive advance notice of increasing sewer flows so that corrective action may be conducted before a spill occurs.

3.0 Roles and Responsibilities

Figure 3.0 illustrates the organization of the City's Department of Utilities. Figure 3.0 is followed by a general description of staff and responsibilities. Response Plan activities involve personnel throughout the organization.

Figure 3.0: *Organization Chart for the City of Sacramento Department of Utilities*



Division personnel function as the first responders for all reports of spills in any location within the City, including rivers, canals, and streams.

Staff Responsibilities

Department of Utilities Director – Under the direction of the City Manager, the Director establishes policy, plans strategy, leads staff, allocates resources, delegates responsibilities, and authorizes outside contractors to perform services.

Department of Utilities Public Information Officer (PIO) – The PIO coordinates public communication during spill events. This includes notifying television, print news media, and/or web-based outlets. The PIO provides other public notifications as needed to inform citizens of where and when a spill occurs.

Security and Emergency Preparedness – The Security and Emergency Preparedness Section of the Department of Utilities is responsible for providing the Department with Security and Emergency services, including Emergency/ Security training, planning and implementation of these measures.

Division Managers – The managers for Business Services, Engineering and Water Resources, and Operations & Maintenance divisions direct the preparation of wastewater collection system planning documents, manage capital improvement delivery system, manage the operation and maintenance programs, document new and rehabilitated assets, and coordinate development and implementation of the Sanitary Sewer Management Plan (SSMP).

Environmental & Regulatory Compliance (ERC) – Environmental & Regulatory Compliance staff oversees, coordinates, and assists with regulatory compliance with State Water Board or Central Valley Regional Water Quality Control Board (Central Valley Water Board) permits and provides support for the analysis of water quality sampling results.

Wastewater Collections

Wastewater Collections Superintendent – The Wastewater Superintendent functions as the Legally Responsible Official (LRO) for the City for the SSS WDR and for reporting CSS Outflows to the State Board's reporting database (CIWQS) for the CSS Permit (NPDES No. CA0079111). In addition, the Wastewater Superintendent oversees wastewater collection field operations and maintenance activities, prepares and implements contingency plans, leads emergency response, and provides notifications and reports for all spills. The Wastewater Superintendent keeps customer service and dispatch staff updated as needed during ongoing spill events.

Wastewater Collection Supervisors and Field Crews – Wastewater Supervisors and Field Crews complete both preventative and reactive maintenance activities to reduce or mitigate spills. They respond to notification of spills and mobilize sewer cleaning equipment, by-pass pumping equipment, and portable generators as needed. They may also collect water quality field readings and samples when directed to do so. They are responsible for preparing documentation of all spill response and mitigation activities to support accurate reporting.

Drainage

Drainage Collection Superintendent – The Drainage Superintendent oversees drainage system operations and maintenance activities, prepares, and implements contingency plans, and leads emergency response for spills that enter the drainage system. The Drainage Superintendent is responsible for contacting the California Department of Fish and Wildlife for guidance with cleaning activities in receiving waters.

Drainage Collection Supervisors and Field Crews – Drainage Supervisors and Field Crews respond to reports of spills entering the drainage collection system. They also conduct spill

mitigation and cleanup activities when needed or oversee cleanup activities when a responsible party performs a spill cleanup within the drainage system.

Systems Maintenance

Systems Maintenance Superintendent – Systems Maintenance Superintendent functions as the Legally Responsible Official (LRO) for the City for reporting CSS Overflows to the State Board's reporting database (CIWQS) for the CSS Permit (NPDES No. CA0079111). In addition, the Systems Maintenance Superintendent oversees drainage and sewer pump station operations and maintenance activities, prepares, and implements contingency plans. The Systems Maintenance Superintendent keeps staff updated as needed during ongoing spill events. The Systems Maintenance Superintendent also provides emergency power when needed during any emergencies.

Supervising Plant Operator – The Supervising Plant Operator is responsible for making operational reports regarding CSS Overflows (CSS discharges to the river) but does not make regulatory reports for spills within the collection system. The Supervising Plant Operator oversees the policies, permits and personnel involved with the CSS pumping and treatment facilities.

Plant Operators and Field Crews – Plant Operators and Field Crews are responsible for drainage and wastewater sump station operations and CSS treatment plant operations. Drainage Supervisors, Plant Operators, and Field Crews work together to conduct preventative and corrective maintenance activities at sump stations, and mobilize cleaning equipment, by-pass pumping equipment, and portable generators as needed for sump stations. Plant operators support drainage and wastewater O&M staff during spill events to contain spills within the drainage system and prevent discharges to waterways when possible.

Machinists and Generator Technicians – Machinists and Generator Technicians are responsible for the set up and operation of a variety of machine tools to produce, repair, and maintain mechanical instruments and industrial machines relating to the City's drainage and wastewater infrastructure.

Dispatch

Control 1 – During normal business hours, Control 1 operators receive spill related calls from 311. The Control 1 operator will dispatch Wastewater or Drainage Field Crews for spill response. Control 1 does not operate during off hours.

Control 12 – Control 12 is responsible for overseeing operations of the City's drainage and sewer sump stations. During normal business hours, Control 12 operators may receive spill related calls directly due to signage on sumps. The Control 12 operator will dispatch Wastewater or Drainage Field Crews. Control 12 does not operate during off hours. Control 12

operators are notified when the City's SCADA system detects a triggered alarm occurring at a City sump station. The Control 12 operator has the ability to shut down the respective sump station to contain spills that may be contained within the drainage system.

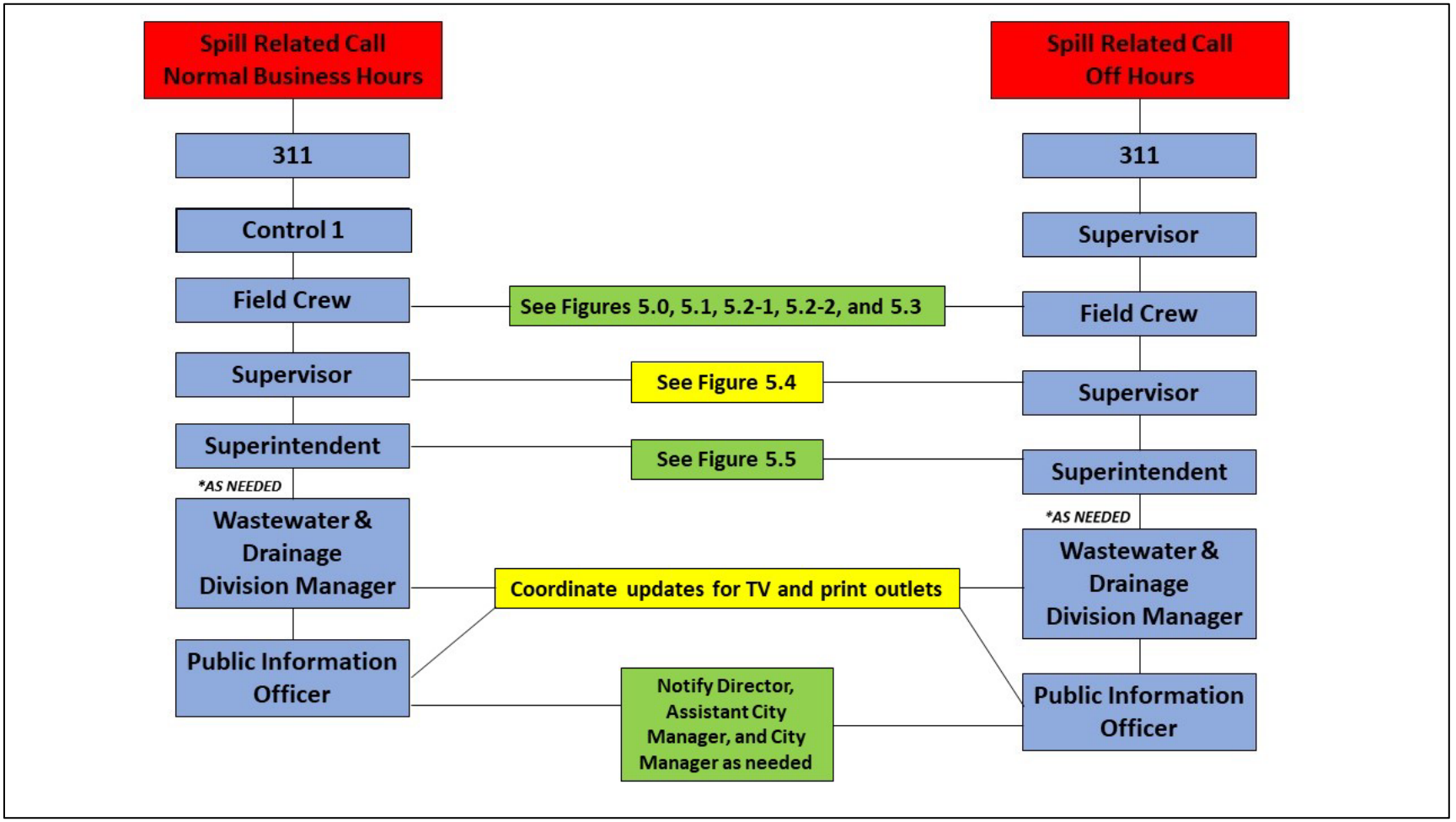
311 - 311 is the main dispatch for all City O&M staff. The public and City employees can call the 311 customer service number to report a spill. 311 is the preferred method for internal reporting. During normal business hours, the 311 operator will route the call to Control 12. The Control 12 operator will then directly contact Wastewater or Drainage Field Crew staff for spill-related calls. During off hours, 311 311 is also referred to as Control 10.will directly contact a Wastewater or Drainage Supervisor as Control 12 does not operate during off hours.

Chain of Communication for Reporting Spills

The overall chain of communications for the City to report spills to the State is shown in **Figure 4.0** below. The general response procedures begin when the City receives notification of a spill. The Wastewater O&M Supervisor coordinates with the Drainage O&M Supervisor to assign the crews necessary to assess, contain, and correct the reported spill.

4.0 Spill Communication Plan

Figure 4.0: Spill Communication Plan



For Category 1 and 2 spills, the following notifications must be made to the authorities listed in the table below.

Required Communication	Contact Agency	Time Requirement	Contact Method
Notification	California Office of Emergency Services (Cal OES)	As soon as possible, but no later than two (2) hours.	Telephone - (800) 852-7550 (Obtain a control number from Cal OES)
Reporting	Central Valley Regional Water Board	Reporting – Draft Spill Report in CIWQS within three (3) business days of the spill	Reporting – CIWQS Notification by Telephone or Email - (916)-464-3291 RB5sSpillReporting@waterboards.ca.gov (Courtesy only, not regulatory requirement)

SECTION II. Spill Response Procedures

When responding to a spill, the primary goals, by priority, are: (1) to protect public health, (2) to protect local waterways, and (3) to prevent property damage.

Spill response procedures are described within this section (and summarized again in checklists at the end of the section), as well as outlined in **Figures 5.0** through **5.5.**

O&M staff work with contractors working on City sewer system facilities to make certain they are aware of this Response Plan and of any pertinent contact phone numbers.

1.0 Spill Response Responsibilities

To meet the response goals listed above, response personnel will implement procedures as warranted and prioritized by the nature of each incident. Some site-specific and situation-specific considerations include, but are not limited to, the following:

- Time of the day
- Day of the week
- Time of the year
- Current and projected weather forecasts
- Proximity and impact to local waterways
- Containment status
- Estimated spill volume
- Size and type of sewer main
- Location and accessibility of equipment
- Employee availability
- Equipment availability
- Public or private right-of-way impaction

Safety

Wastewater and Drainage Field Crews must follow City safety procedures at all times. This includes wearing appropriate personal protective equipment (PPE) at all times, using pedestrian or traffic barriers, and utilizing traffic controls as needed.

Supervisors – Response Summary

The Wastewater Supervisor is responsible for calling the reporting party to clarify the situation and to collect any additional available information that may allow O&M staff to respond in the most efficient manner.

The Wastewater O&M Supervisor will also do the following:

- Dispatch a Field Crew to respond and assess the spill site.
- Contact the reporting party to let them know of the Field Crew's estimated time of arrival at the spill site.
- Upon initial contact by Field Crew, note the Field Crew's time of arrival at the spill site.
- Follow the notification procedures in **Figures 5.4** and **5.5** if the Superintendent is unable to provide notifications. These include the following:
    - Notify the Drainage Superintendent in the event of a spill that has entered a waterway or a high-use public area (such as a school, daycare, or mall) to ensure public health warnings are deployed and to coordinate with the Sacramento County Health Department
    - Notify Drainage Superintendent (or Drainage on-call contact) if spill has entered the drainage system and/or surface waters (i.e. river, canal, creek, or wet basin).
    - Notify Control 12 to turn off drainage sump, in the event of a spill that has entered a drainage sump.
    - Notify drinking water plants via the Voluntary Spill Notification Program.
- Coordinate with Risk Management if spill/backup is in homes or businesses.
- Continue to oversee spill response activities and coordinate any additional resources that may be needed.

Wastewater O&M Field Crew – Response Summary

- Contact the reporting party and collect as much information as possible upon arrival at the spill site.
- Assess the spill site.
- Contact Supervisor and provide arrival time and spill information.
- Contain the spill and mitigate its impact.
- Restore the affected infrastructure and clean up the spill.
- As to the cause of the spill, assess the need for enforcement or cost recovery for spill response.
- If responsibility for spill is not the City's, discuss maintenance responsibilities with responsible party.
- Post warning signs if the spill cannot be mitigated quickly and is in an area where there is the potential for human contact to notify the public of the spill and minimize public access to, and/or contact with, the spilled sewage.
- Documentation of the spill (SSO Checklist, State SSO Form, and City Incident/Loss Report, and photographic evidence).

2.0 Initial Response

During the initial response, the dispatched Field Crew will determine the probable cause and assess the extent of the spill, and what resources are needed to contain and clean up the spill. It is important to obtain as much information as possible at the time the spill is occurring, without precluding mitigation of the spill.

For spills that are the result of a sump station failure (e.g., power, mechanical, or control failure), the initial response will be similar to what is listed in this section. Specifically, Plant Operators will provide information to the Wastewater O&M Supervisor regarding the location, approximate size, cause of the spill, and the time the spill started.

The initial assessment of the spill site must answer the following questions:

1. What sewage systems did the spill exit from (combined sewer system or separated sewer system)?

   What is the estimated volume of the spill?

2. Where is the spill located and where will it flow to if not contained?

   Determine if the spill entered the public right-of-way, a drainage facility, or a local waterway. Determine if the spill may enter a drainage sump station.

3. What is the probable cause of the spill?

   Verify with visual inspection, whenever possible, the cause of the spill. For example: is the spill the result of a grease blockage, a broken pipe, root blockage, debris accumulation, or is the spill the result of a failure involving a sump station? Determine if further investigation is necessary.

4. Where is the cause of spill located?

   Determine if the spill was caused within the City-maintained separated system or combined sewer system (CSS), within the Sac Sewer or Regional San maintained collection system, or within a private lateral.

5. Are additional resources needed?

   Identify if the spill requires additional mitigation measures, such as additional traffic control to correct a traffic hazard (e.g., displaced manhole cover, street collapse, street flooding, downed power lines, etc.).

Inter-Agency Coordination of Activities

During spills that impact other stormwater jurisdictions, local maintaining agencies, or wastewater agencies; City Drainage and Wastewater Field Crews will coordinate pre-cleanup, active cleanup, and post-cleanup activities of a spill event. Employee contact lists for both normal and standby working hours are shared weekly between agencies such as Sac Sewer, Region San, and City Drainage and Wastewater O&M staff. Regulatory reporting may also need to be coordinated between agencies. In most cases, regulatory reporting is conducted by the responsible agency of the spill. However, City Drainage or Wastewater staff may conduct reporting on behalf of another agency if needed.

Adjacent stormwater or wastewater agencies will notify the City of either a private spill or spill that may be affecting portions of the City-owned drainage system. This can be done by notifying 311 or directly contacting City Drainage O&M staff using the shared contact lists. City Drainage staff will then oversee cleanup activities and confirm cleanup was completed.

During private spills reported to adjacent wastewater agencies, the wastewater agencies will provide the City with essential information then leave cleanup and enforcement activities to the City. During a spill that is caused by an outside agency's infrastructure, City Drainage O&M staff will allow access to areas of the underground drainage system or sump stations where the responsible agency will conduct all cleanup activities.

3.0 Contain and Mitigate

The Field Crew responding to a spill must make every effort to contain the flow if it has the potential for entering the drainage system, a public right-of-way, a local waterway, or if it has already entered the drainage system.

For spills resulting from a wastewater sump station equipment failure or other operational condition, the Supervising Plant Operator will immediately contact the on-call Wastewater O&M Supervisor after the Plant Operator's initial response. The Wastewater O&M Supervisor will coordinate with a Drainage O&M Supervisor to assign an appropriate crew to respond, contain, and mitigate the spill. The Supervising Plant Operator will also contact appropriate staff to repair failed pump station equipment.

During dry weather, the drainage system can be used to store the spill if it can be plugged downstream of the spill or if the downstream drainage sump station can be shut down by calling Control 12 and requesting the associated sump station be shut down (refer to **Figures 5** through **5.5**).

The Field Crew will decide how to proceed based on the following:

- Proceed with clearing the blockage in order to restore the flow if:

The spill is small and will not reach a storm drain before the work to clear the plug has been completed.

- Proceed with the containment measures if:

  The spill is moderate or large, has not reached a storm drain or a waterway, and containment is anticipated to be simple.

- Call for additional assistance, proceed with clearing the blockage, and implement containment measures as soon as possible or with the assistance of other crews if:

  The spill is moderate or large and containment is anticipated to be difficult, or the spill has entered a storm drain or a waterway.

If the location of the blockage causing the spill is not within the City's jurisdiction or if the source causing the spill is within a private lateral, the Field Crew will contain and mitigate the spill to the extent feasible (depending on the size and location of the spill) and standby until representatives of the responsible party arrive and the spill containment and clean-up can be transferred to the responsible party. This includes communication and coordination with neighboring storm and sewer agencies as applicable.

The Sac Sewer maintains sewage lines within Sacramento City limits and Regional San owns and operates the interceptor conveyance system that conveys sewage flows to the Sacramento Regional Wastewater Treatment Plant (see **Figure 1.0**). Sac Sewer and Regional San are responsible for the response, clean-up, and reporting of spills located within their respective jurisdictions. As part of ongoing coordination with Sac Sewer and Regional San, the City will notify the appropriate personnel (on a situation-by-situation basis) in the event of a spill caused by Sac Sewer or a Regional San facility to transfer responsibility of containment.

Spill Containment Measures

The Field Crew should contain as much of the spill as possible by using the following steps:

- Contain the spill by plugging downstream drainage facilities, including storm drains, by using air plugs, sandbags, plastic mats, and/or other dam construction material (if the spilled sewage has entered the drainage channel), as appropriate. If spill may enter the drainage system, contain the spill by locking out the downstream drainage sump station.
- Contain and/or direct the spilled sewage using dike, dam, sandbag, or earthen berms into landscaped or undeveloped areas.
- Pump around the cause of the spill to convey the wastewater to the nearest downstream sanitary sewer manhole or facility.

- Contact the Wastewater O&M Supervisor if the spill is caused by a private sewer lateral, and wastewater has endangered public health, to obtain approval to contact the proper water agency to shut off the water supply to the affected property.
- Restrict and redirect vehicle traffic using responding equipment, traffic cones, street closures, or the assistance of the Police Department, if necessary.

4.0 Restore Flow and Clean-up Spill Site

Restore Flow

The Field Crew will use appropriate equipment and cleaning tools to remove the blockage from the system. If the blockage cannot be cleared within a reasonable period of time or if the sewer requires construction repairs to restore flow, then the Field Crew should initiate containment measures (including possible bypass pumping) and contact the Wastewater O&M Supervisor to request assistance.

High velocity cleaners can be used to clean grease or sand, to cut roots, and to remove debris collecting in small pipes or flat slow-moving sewer lines. Different nozzles are available depending on the suspected type of sewer issue. A debris catcher should be used downstream of the cleaning operation whenever possible to clear the line and to better identify the cause of the blockage.

Recovery, Clean-Up, and Disinfection

The recovery and cleanup of the spill begins when the flow has been restored and the spill has been contained and/or returned to the sanitary sewer to the extent possible. The City's Risk Management Division, which provides 24/7 response and handles emergency cleaning and disinfection of homes and businesses damaged from backups caused by a blockage or flow conditions with the publicly owned portion of the sewer system.

The Field Crew, in coordination with the Wastewater O&M Supervisor with support from the Drainage O&M Supervisor as needed, will determine appropriate cleaning method:

- Use a Vac-Con or a Combination Sewer truck for recovery of the spilled sewage and wash down water used to clean the spilled sewage; or
- In the worst-case scenario, wash the spill to the downstream drainage pump station and use a bypass pump to divert the collected spill and wash water to the sanitary system; use a Combo machine to vacuum out and disinfect the drainage sump station.

Cleaning methods for situations that may not fall into one of the two categories above will be determined and implemented on a situation-by-situation basis. In addition to any cleaning method utilized, one or more of the following tasks may be necessary:

- Clean up of debris originating due to the spill.
- Disinfection of contaminated areas.
- Use of masking agents to control odor.
- In the event a spill occurs at night, inspect the location of the spill at the earliest possible time the following day looking for any signs of sewage solids and sewage-related materials that may warrant additional cleanup activities.

General dry-weather condition procedures for spills affecting private property, hard surface areas, landscaped and unimproved natural vegetation, and natural waterways, are listed below, followed by modified procedures for wet-weather conditions.

Hard Surface Areas

- Collect sewage solids and sewage-related materials either by hand or with the use of rakes and brooms.
- Take reasonable steps to contain and vacuum up the wastewater and return it to the wastewater collection system.
- Wash down the affected area with clean water until the water runs clear.
- Disinfect all areas that were contaminated by the spill using the disinfectant solution of household bleach diluted with water at a ratio of 10 parts water for 1 part household bleach or other appropriate disinfectant.
- Apply minimal amounts of the disinfectant solution using a hand sprayer.
- Document the volume of disinfectant used.
- Allow area to dry.
- Repeat the process if additional cleaning is required.

Landscaped and Unimproved Natural Vegetation

- Collect sewage solids and sewage-related materials either by hand or with the use of rakes and brooms.
- 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.
- Return the wastewater to the wastewater collection system to the extent possible.
- Allow the area to dry.
- Repeat the process if additional cleaning is required.

Natural Waterways

If a spill enters a waterway with wildlife habitat, the Drainage Superintendent will contact the California Department of Fish and Wildlife (CDFW) for guidance with appropriate cleanup of spills in these sensitive environments. Efforts to mitigate the effects of a spill that reaches surface waters should be considered on a case-by-case basis. Drainage O&M staff will work

closely with CDFW when/if recovering wastewater from a waterway. Regardless of the amount of wastewater recovered from a waterway, recovery efforts may not mitigate the damage to a waterway from the spill. Surface water conditions may also be worsened by recovery efforts.

The Wastewater Superintendent will coordinate with the Environmental and Regulatory Compliance section, Engineering and Water Resources Division staff for additional guidance with sampling and assessment of impact of the spill on the affected waterway using the City's SSO Water Quality Monitoring Plan as needed. As with spills in other locations, cleanup should proceed quickly in order to minimize negative impact. Use of portable aerators may be used when complete recovery of the sanitary sewer overflow is not practical and severe oxygen depletion in the impacted surface waters is expected.

Wet-Weather Modifications

In addition to the procedures outlined above, spills that occur during wet-weather conditions have the following procedure:

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

5.0 Public Health Warnings and Spill Notification Information

The Field Crew must use appropriate measures to limit access to the spill site and notify the public of the spill as needed. For example, when the spill cannot be mitigated quickly and is in an area where there is the potential for human contact. Public health warnings will be posted, in coordination with the County Health Department as needed, to ensure that land or receiving waters contaminated with sewage are clearly identified with warning signs to prevent public use.

Public Health Warnings

- Restrict pedestrian and vehicular traffic away from contact with spilled sewage using cones, traffic arrow board, caution tape, and barricades.
- Make certain public notification signs are on the barricades; if not, notify the Wastewater O&M Supervisor.
- Do not remove the signs until directed by the Wastewater O&M Supervisor.
- Post warning signs at visible access locations to creeks, streams, and drainage channels that have been contaminated because of the spill.
- Check the warning signs every day to ensure that they are still in place.
- Do not remove the warning signs until directed by the Wastewater O&M Supervisor.
- The Wastewater O&M Supervisor, coordinating with the Environmental Health and Safety team, will determine that the risk of contamination has subsided before authorizing the removal of the warning signs.

- The PIO, after receiving approval from the City Manager to contact local media, may decide to issue broader public notice of the spill when significant areas may have been contaminated by sewage.

The Field Crews will collect information to provide the following spill information to be used to report to Cal OES:

- Estimated spill volume (gallons);
- Estimated spill rate from the system (gallons per minute);
- Estimated discharge rate (gallons per minute) directly into waters of the State or indirectly into a drainage conveyance system;
- Spill incident description:
    - Brief narrative of the spill event, and
    - Spill incident location (address, city, and zip code) and closest cross streets and/or landmarks;
- Name and phone number of contact person on-scene;
- Date and time the Enrollee was informed of the spill event;
- Name of sanitary sewer system causing the spill;
- Spill cause or suspected cause (if known);
- Amount of spill contained;
- Name of receiving water body receiving or potentially receiving discharge; and
- Description of water body impact and/ or potential impact to beneficial uses.

6.0 Water Quality Sampling and Testing

Water quality sampling and testing of receiving waters, under certain circumstances, can provide additional understanding of the impact of a spill that has entered a waterway. Per the SSS WDR, water quality sampling must be performed no later than 18 hours after the Enrollee's knowledge of a potential discharge to a surface water that is 50,000 gallons or greater. Water quality results are required to be uploaded into CIWQS for Category 1 spills that are 50,000 gallons or more. The Water Quality Monitoring Plan for Category 1 spills is included as Attachment 2. The City may consider collecting samples for spills less than 50,000 gallons reaching surface waters that may endanger human health, potentially cause a fish kill, or is of a magnitude that warrants sampling. Sampling of spills should be performed when it is safe to do so and should not interfere with stopping the spill. Sampling may be conducted by City staff or a contractor.

The Wastewater O&M Supervisor will coordinate with the City's Department of Utilities' Environmental and Regulatory Compliance staff when water quality sampling of receiving waters is necessary.

Field testing by O&M field crews using ammonia strips, field meters for electrical conductivity, and other strategies may be used in the field to determine when clean-up has been sufficiently completed or to determine the extent of the impact.

7.0 Spill Observation Requirements

In accordance with the spill-specific monitoring requirements per Attachment E1 of the SSS WDR, the following visual observations shall be gathered and documented to be able to evaluate the spill location and spread, conduct a spill volume estimation, and evaluate the receiving water.

Spill Location and Spread

Wastewater O&M staff shall visually assess the spill location(s) and spread using photography, GPS, and other best available tools. Staff responding to the specific spill event shall document the critical spill locations with a map. Additionally, photography and GPS coordinates for the system location shall be collected where the spill originated, multiple appearance points of a single spill event, and the points closest to the spill origin.

Photographs shall be collected where possible for the following:

- drainage conveyance system entry locations,
- the locations of discharge into surface water, as applicable,
- extent of spill spread, and
- the locations of cleanup.

Spill Volume Estimation

Spill volume is estimated using volume estimation techniques such as:

- Geometric volume estimations based on visual observations and LiDAR surface data;
- Volume calculator using excel;
- Debris volume estimation;
- Observation of flows exiting a manhole compared to known flow rates in similar situations;
- Pickhole estimation calculator based on height leaving the pickhole; and
- Water meter readings.

Receiving Water Visual Observations

Through visual observations and use of the best available spill volume-estimating techniques and field calculation techniques, Wastewater O&M staff shall gather and document information for spills discharging to surface waters. These include:

- Estimated spill travel time to the receiving water,
- For spills entering the separated drainage system, estimated spill travel time from the point of entry into the separated drainage system to the point of discharge in the receiving water, and
- Estimated spill volume entering the receiving water and,
- Photography to show:
    - Waterbody bank erosion
    - Floating matter
    - Water surface sheen from oil or grease
    - Discoloration of the receiving water
    - Impact to the receiving water

8.0 Post Response Investigation

The objective of the investigation is to determine the "root cause" of the spill and to identify corrective action(s) needed that will reduce or eliminate the potential recurrence of a spill.

The investigation will be conducted by staff as directed by the Wastewater O&M Supervisor. The investigation will include the following as needed:

- Reviewing past maintenance records,
- Reviewing available photographs,
- Reviewing the latest closed-circuit television (CCTV),
- Conducting a CCTV inspection,
- Reviewing the video and logs to determine the condition of the line segment,
- Interviewing staff who responded to the spill, as well as affected customers and residents, and
- Completing the State Sewer Overflow Forms (see Attachment 1).

The results of the investigation should identify any needed corrective actions and be documented on the State Sewer Overflow Form.

Post Spill Event Debriefing

Every spill event can be used as an opportunity to evaluate these response and reporting procedures. Each spill event is unique, with its own elements and its own challenges, including volume, cause, location, terrain, and other parameters.

All spills that are certified in CIWQS are reviewed and debriefed by the LRO and associated staff. This review can be conducted with staff from various departments of the City, including those from Drainage, Wastewater, Environmental and Regulatory Compliance, System Maintenance, and more when applicable. Staff discuss overall response and procedures used

during implementation. Staff also discuss aspects that were effective as well as improvements that could be made in responding to and mitigating future spill events.

9.0 Regulatory Notification and Reporting

During a spill event, the Supervisor, or the highest-level staff person available, is required to begin the appropriate regulatory notification and reporting procedures. The Certified Spill Reports are required to be submitted in CIWQS by the LRO. See notification timelines for each spill category below. Also see **Figure 5.4** and the Notification Summary Checklist for additional information.

Table 1: Spill Category Notification Requirements

Spill Category	Gallon Amount	Cal OES Notification
Category 1	Any amounth that reaches a surface water.	Within 2 hours of knowledge of the spill.
Category 2	1,000 gallons or greater that does not reach a surface water.	Within 2 hours of knowledge of the spill.
Category 3	Equal to or greater than 50 gallons but less than 1,000.	None.
Category 4	Less than 50 gallons.	None.

Category 1 Spills

A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under the SSS WDR that results in a discharge to:

A surface water, including a surface water body that contains no flow or volume of water, or a drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.

Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.

- Cal OES notification must be made within 2 hours of knowledge of the spill.
- A draft spill report must be submitted within (3) business days of the knowledge of the spill.
- Submit a Certified Spill Report within fifteen (15) calendar days of the spill end date.

- Submit the Technical Report within forty-five (45) calendar days after the spill end date for a Category 1 Spill in which 50,000 gallons or greater discharged to surface waters.
- Submit Amended Spill Report within 90 calendar days after the spill end date.

Category 2 Spills

A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under the SSS WDR that does not discharge to a surface water. A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.

Cal OES notification must be made within 2 hours of knowledge of spill of 1,000 gallons or greater, discharging or threatening to discharge to Waters of the State.

- A draft spill report must be submitted within three (3) business days of the knowledge of the spill.
- Submit Certified Spill Report within fifteen (15) calendar days of the spill end date.
- Submit Amended Spill Report within 90 calendar days after the spill end date.

Category 3 Spills

A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water. A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.

- No Cal OES notification needed.
- Submit monthly Certified Spill Report to the online CIWQS Sanitary Sewer Database within 30 calendar days after the end of the month in which the spills occur.
- Submit Amended Spill Reports within 90 calendar days after the Certified Spill Report due date.

Category 4 Spills

A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water. A spill of less than 50 gallons, out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a category 4 spill.

- No Cal OES notification needed.
- If, during any calendar month, Category 4 spills occur, certify monthly, the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills into the online CIWQS Sanitary Sewer System Database, within 30 days after the end of the calendar month in which the spills occurred. Upload and certify a report, in an acceptable

digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur.

All notification and reporting dates and times must be documented on and filed together with the finalized State Sewer Overflow Form in the Wastewater Division administrative offices. Final documentation will be submitted electronically to the State Water Board's online database CIWQS.

Spills to surface waters 50,000 gallons or greater

A Technical Report must be prepared and submitted to the CIWQS Online SSO Database within 45 calendar days of the spill end date and must be certified by the City's Legally Responsible Official (LRO) for any spills of greater than 50,000 gallons that reach surface waters. Pursuant to Section 3.3.1 of the SSS WDR Monitoring and Reporting Program, the Spill Technical Report must include the following the four minimum elements:

1. *Spill Causes and Circumstances:*

- Complete and detailed explanation of how and when the spill was discovered.
- Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions.
- Diagram showing the spill failure point, appearance point(s), and final destination(s).
- Detailed description of the methodology employed, and available data used to calculate the volume of the spill and, if applicable, the spill volume recovered.
- Detailed description of spill cause(s).
- Description of the pipe material, and estimated age of the pipe material, at the failure location.
- Description of the impact of the spill.
- Copies of original field crew records used to document the spill.
- Historical maintenance records for the failure location.

2. *Enrollee's Response to Spill*

- Chronological narrative description of all actions taken by enrollee to terminate the spill.
- Explanation of how Spill Emergency Response Plan was implemented to respond to and mitigate the spill.
- Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.
    - Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable.
    - Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences.

- Necessary modifications to the Spill Emergency Response Plan to incorporate lessons learned in responding to and mitigating the spill.

3. Water Quality Monitoring

- Description of all water quality sampling activities conducted.
- List of pollutant and parameters monitored, sampled and analyzed as required in section 2.3 (Receiving Water Monitoring) of Attachment E-1.
- Laboratory results, including laboratory reports.
- Detailed location map illustrating all water quality sampling points.
- Other regulatory agencies receiving sample results (if applicable).

4. Evaluation of Spill Impact

- Description of short-term and long-term impact(s) to beneficial uses to surface water.

10.0 Spill Response Procedure Flow Charts, Checklists, and Contact List

The following flow charts describe the City's process when responding to spills.

Figure 5.0: *Spill Response Procedure Flow Chart*

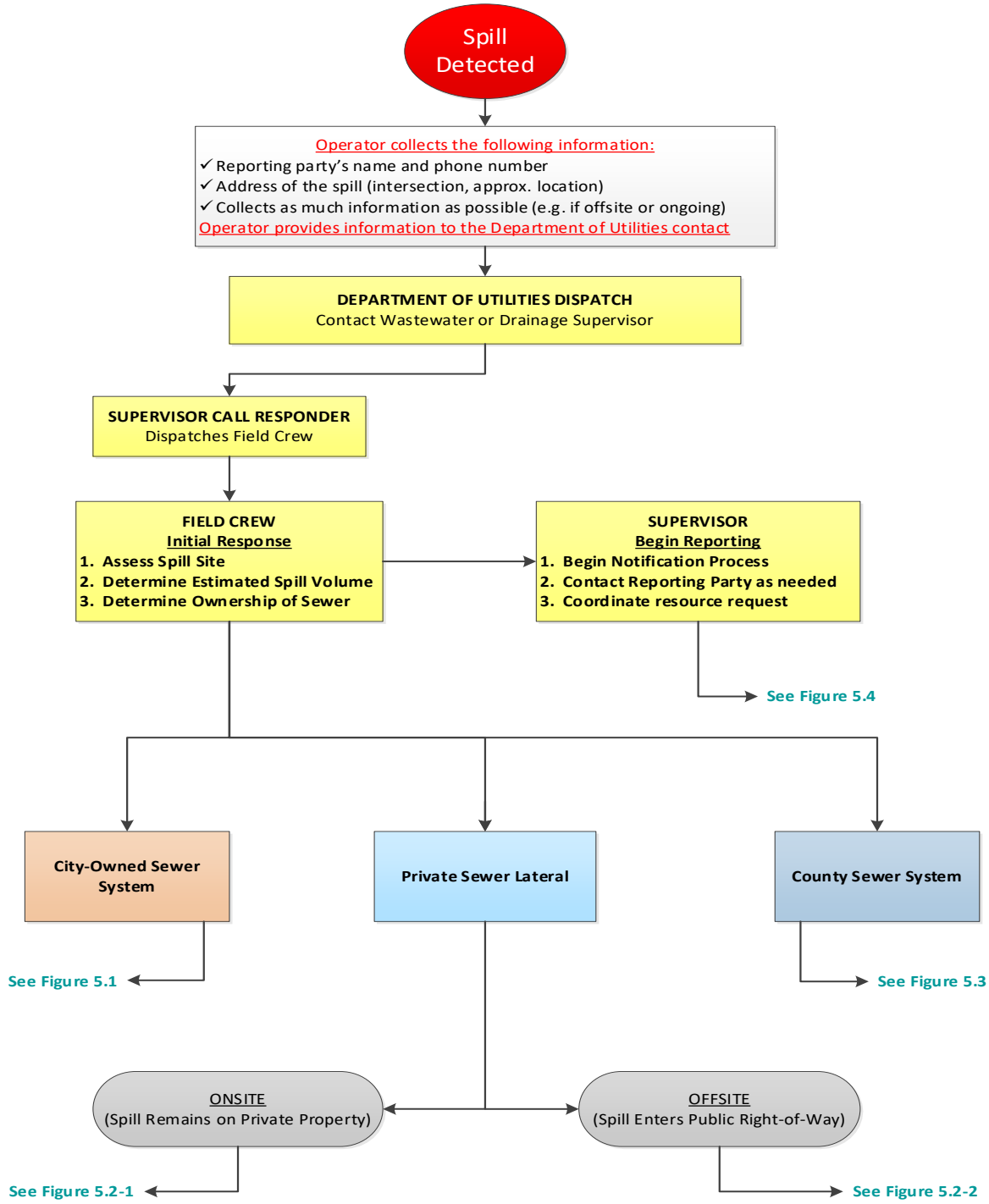
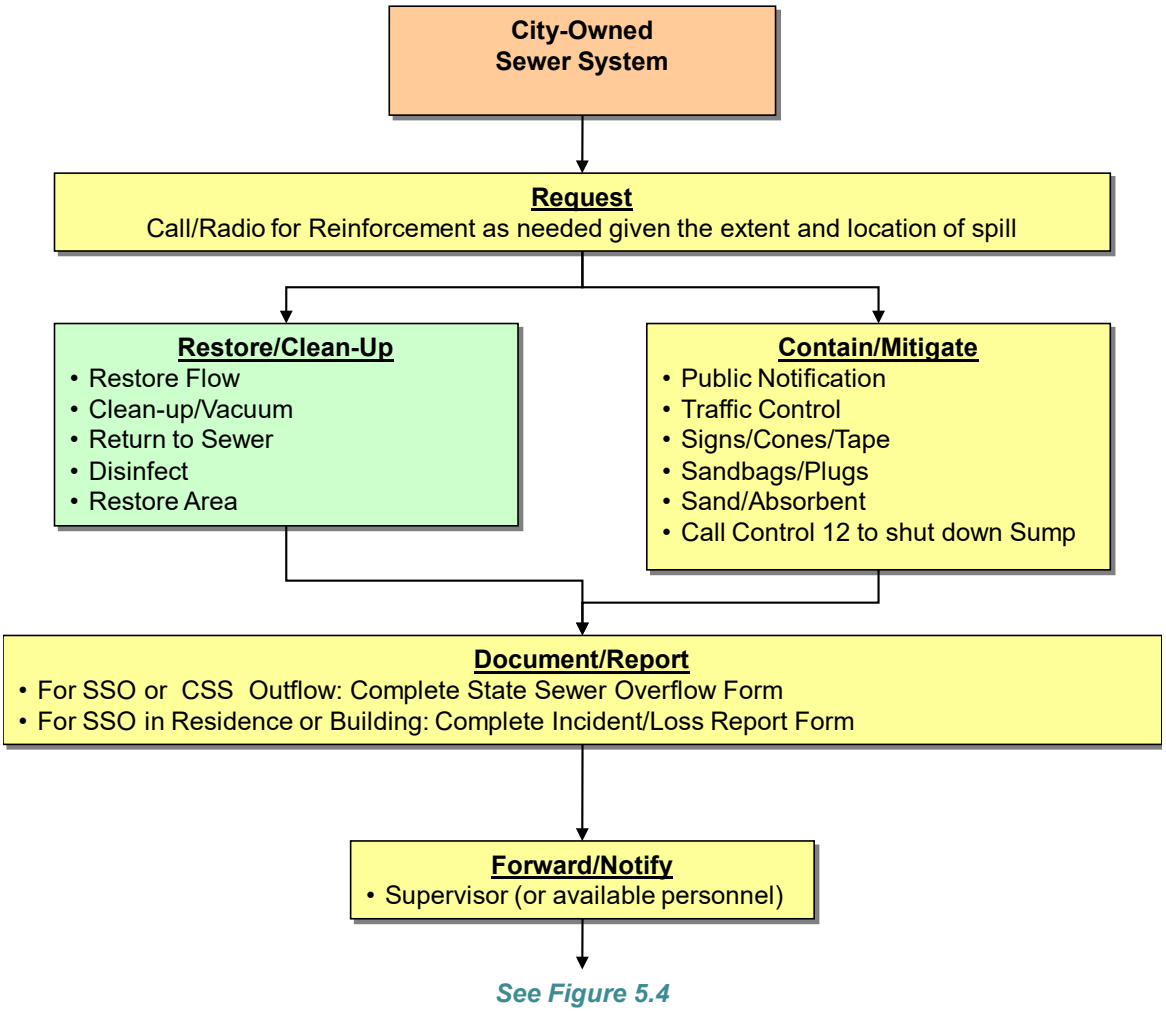


Figure 5.1: *Division Response Flow Chart for Spills Caused by City-Owned Sewer System*



See Figure 5.4

Figure 5.2-1: *Division Response Flow Chart for Private Lateral Onsite Spills*

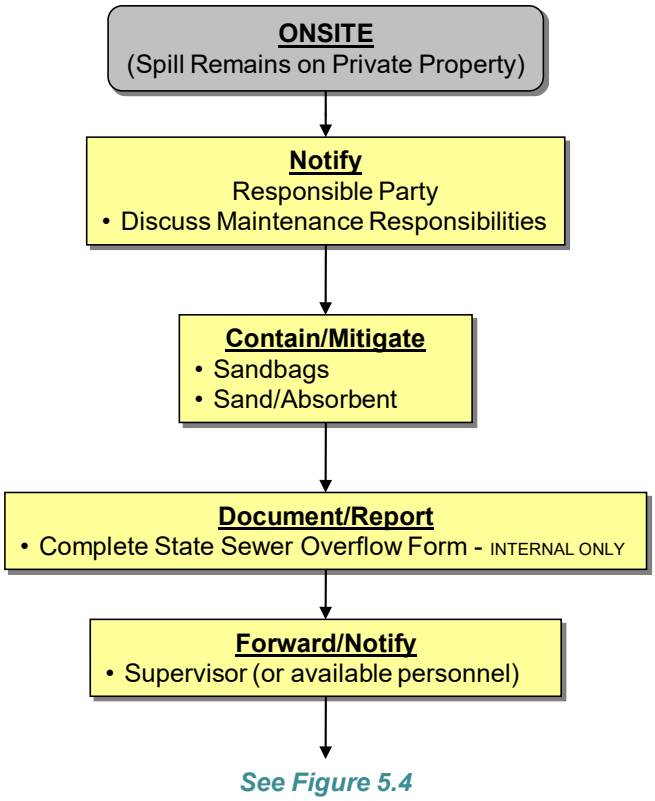
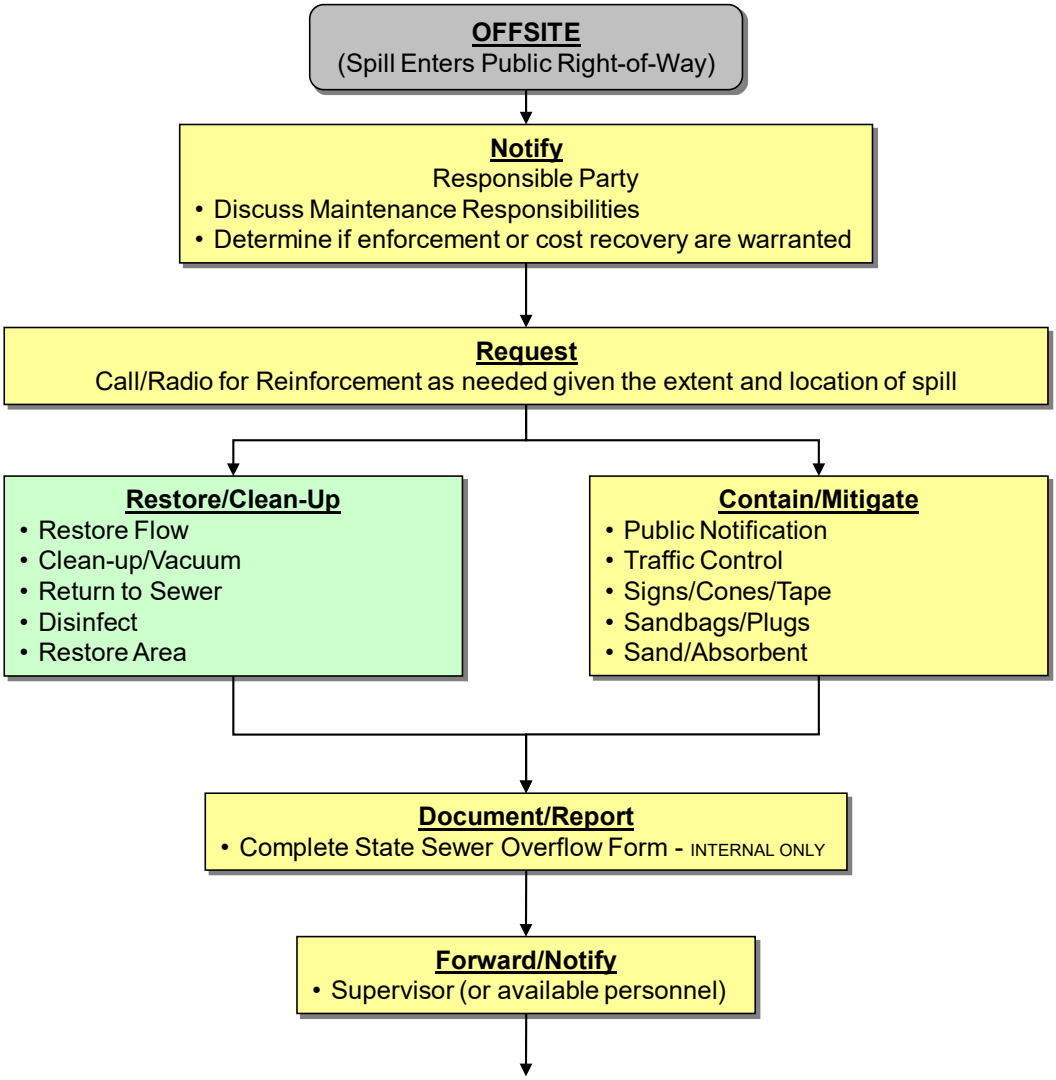


Figure 5.2-2: *Division Response Flow Chart for Private Lateral Offsite Spills*



See Figure 5.4

Figure 5.3: *Division Response Flow Chart for Spills Caused by County Sewers*

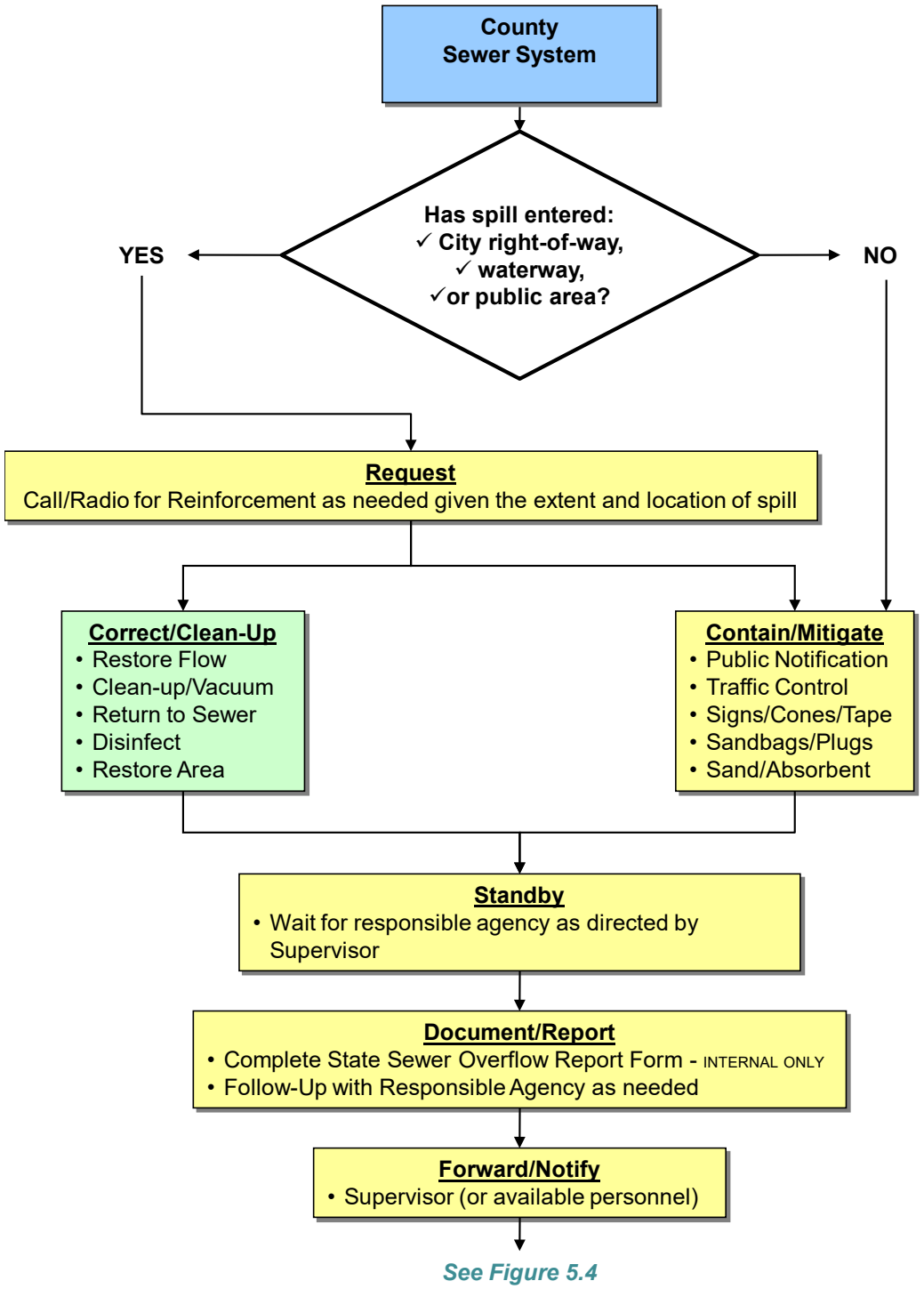


Figure 5.4: Division Supervisor Notification and Documentation Flow Chart

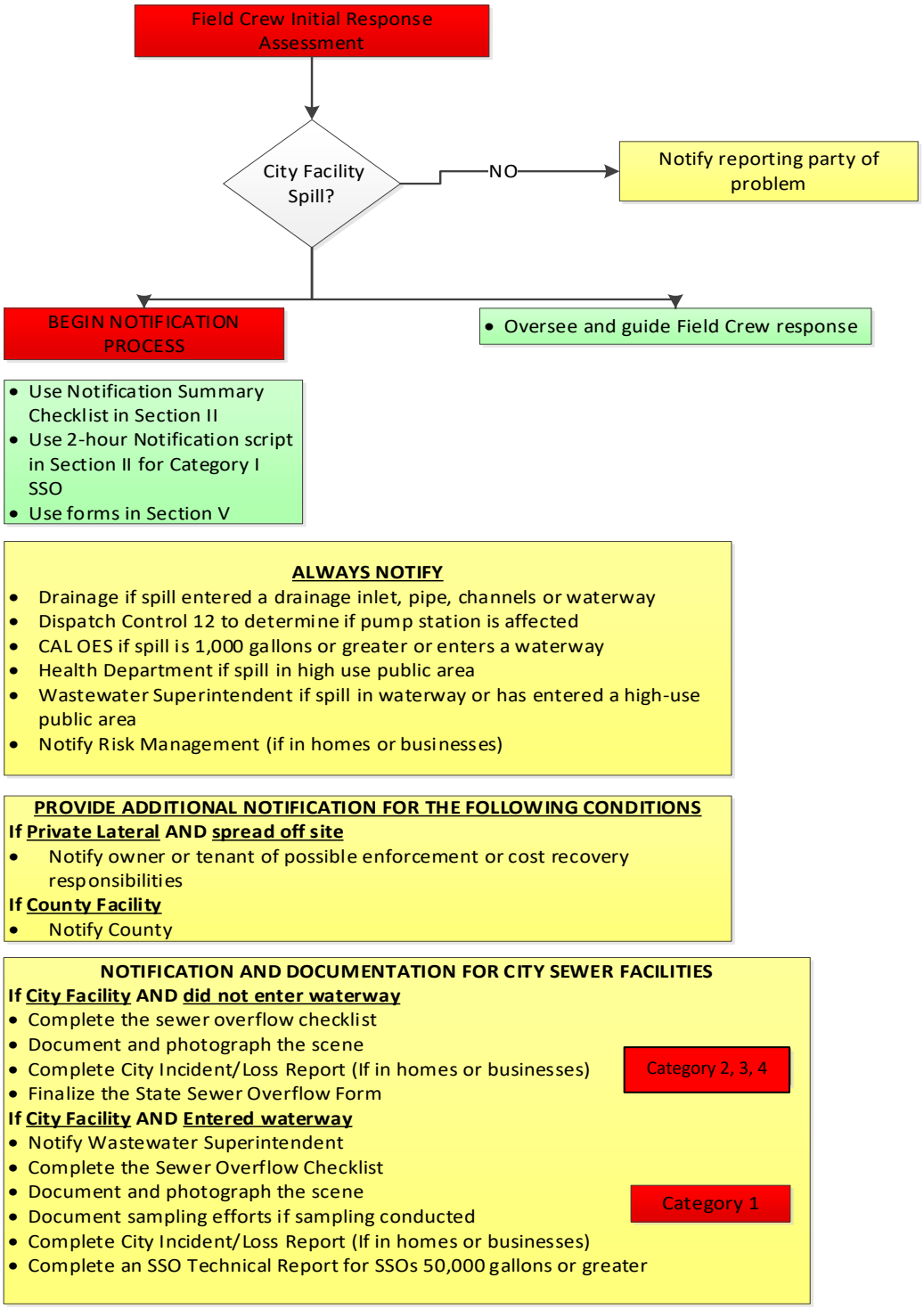
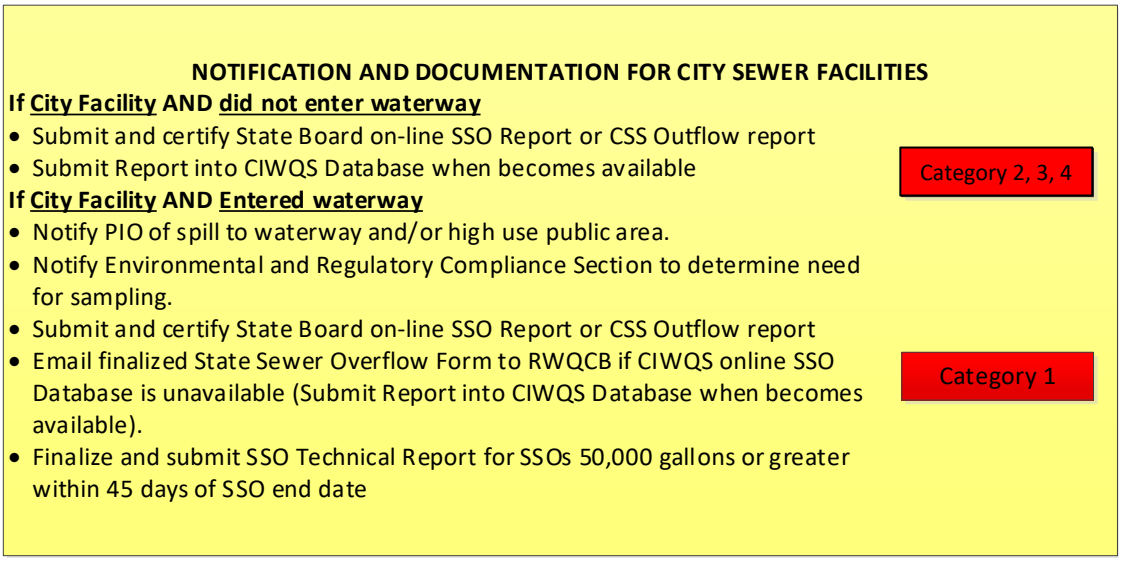


Figure 5.5: Division Superintendent or Designee Notification and Reporting Flow Chart



Wastewater Collection Field Crew Checklist

- ❑ Is this a spill event?
- ❑ What is the initial estimate of the spill volume?
- ❑ Where is spill located and traveled to– has it entered the public right-of-way, City drainage facility, County drainage facility, or waterway?
- ❑ What is the probable cause of the spill – grease, roots, debris, broken pipe, etc.?
- ❑ Which facilities are affected – County, City separated sewer, private lateral, CSS?
- ❑ Do you need additional resources?
- ❑ Call supervisor with collected information.
- ❑ If a supervisor is unavailable and notifications are needed, begin providing notifications following the Notification Summary Checklist.
- ❑ Notify responsible party for private lateral spills.
- ❑ Inspect manholes to determine location of blockage.
- ❑ Contain spill:
    - If necessary, barricade with caution tape.
    - Implement traffic control.
    - Place plugs and/or sandbags in storm drain.
    - Post public health warnings, as directed by Supervisor.
- ❑ Photograph incident to show:
    - Location of where spill started from
    - Drainage conveyance system entry locations (if applicable)
    - Locations of discharge into surface waters (if applicable)
    - Extent of spill spread
    - Containment measures put in place
    - Documentation of clean up
- ❑ Clear blockage.
- ❑ Clean up and disinfect as needed.
- ❑ In coordination with ERC, determine if enforcement or cost recovery is needed.
- ❑ Complete work orders for any needed follow-up work.

Wastewater Collections Notification Summary Checklist

ALWAYS				Phone
IF	**Entered drainage system**	CALL	Drainage Superintendent	916-808-6955 916-769-1720
IF	**Pump station affected**	CALL	Control 12	916-808-5226
IF	**Entered a high-use public area**	CALL	County Public Health Officer	916-875-5881 sacdhs@saccounty.net
		CALL	Public Information Officer	916-808-6839
		DO	Post signs or barricades to notify the public	
		CALL	County Haz Mat	916-875-6900
IF	**Spill is from Sac Sewer Collection System**	CALL	24-Hour SacSewer Dispatch or SacSewer On-call Contact	916-875-6730 (or weekly phone list)
IF	**Spill is from Regional San Interceptor System**	System Maintenance SPO CALL	Regional San Plant Control Center	916-875-9406 or 916-875-9400
IF	**Spill enters Sacramento County Drainage**	CALL	Sacramento County 311	916-875-4311 (or weekly phone list)
		CALL	Or Sac County Drainage (Dept of Water Resources) Stormwater Utility Manager	916-876-6456 (Office) 916-531-3764 (Cell)
IF	**Private Lateral**	CALL	Owner or tenant	
IF	**Spill is from a City Collection System and In homes/businesses**	CALL	City Risk Management	916-808-5278
		DO	Complete City Incident/Loss Report	Internal
IF	**CIWQS Online SSO Database Unavailable**	Email	Central Valley Regional Water Quality Control Board (CVRWQB) RB5sSpillReporting@waterboards.ca.gov	(916) 464-3291

ALSO				Phone
IF	**Entered drainage channel and/or surface water**	CALL	Wastewater Operations & Maintenance Superintendent	916-808-4022 (office) 916-233-8600 (cell)
		CALL	Operation and Maintenance Division Manager	916-808-5518 916-803-8455
		Control 12 CALL	Voluntary Spill Notification Program SRWTP EAFWTP	 916-808-4961 916-808-3120
		CALL	CAL OES within 2 hours of report of spill	1-800-852-7550
		Drainage CALL	Sacramento County Office of Emergency Services (County Haz Mat)	916-875-6900
		DRAINAGE CALL	Department of Fish and Wildlife	916-445-0411
		CALL	Public Information Officer	916-808-6839 279-759-1528
		DO	Determine if water quality sampling is warranted (required if >50,000 gallons) and coordinate with ERC Illicit Discharge Program Lead	916-808-1450 925-963-0538
IF	**>1,000 gallon spill**	CALL	CAL OES within 2 hours of report of spill	1-800-852-7550
IF	**Enters Local Maintaining Agency jurisdiction's Waterway**	Drainage CALL	Local Maintaining Agency Contact	

*check with the Drainage Superintendent first, as this notification may have already been made

Category 1 & 2 – Spill Notification Scripts

2 Hour Notification for CAL OES

Phone Call to CAL OES

This phone call serves as notification of a wastewater spill in the City of Sacramento of _____ gallons has entered the _____waterway or drainage channel. The location of the spill is _____ _____. The City's Field Crews are on site to mitigate and further monitor SSO impact to the waterway.

Staff will be asked the following questions when notifying Cal OES of a spill:

1. Name and phone number of the person notifying the California Office of Emergency Services.
2. Estimated spill volume (gallons).
3. Estimated spill rate from the system (gallons per minute).
4. Estimated discharge rate (gallons per minute) directly into waters of the State or indirectly into a drainage conveyance system.
5. Spill incident description.
6. Name and phone number of contact person on-scene.
7. Date and time the Enrollee was informed of the spill event.
8. Name of sanitary sewer system causing the spill.
9. Spill cause or suspected cause (if known).
10. Amount of spill contained.
11. Name of receiving water body receiving or potentially receiving discharge.
12. Description of water body impact and/ or potential impact to beneficial uses.

Following the initial notification to Cal OES and prior to the LRO certification of the spill report in the online CIWQS Sanitary Sewer System Database, the City will provide updates to Cal OES if any of the following information changes substantially:

- Estimated spill volume (increase or decrease in gallons initially estimated);
- Estimated discharge volume discharged directly into waters of the State or indirectly into a drainage conveyance system (increase or decrease in gallons initially estimated); and;
- Additional impact(s) to the receiving water(s) and beneficial uses.

SECTION III. Spill Emergency Response Training

City personnel who have a role in responding to, reporting, and/or mitigating a wastewater collection system spill will receive training on the contents of this Response Plan. All new employees will receive training before they are placed in a position where they may have to respond. Current employees will receive annual refresher training on this Response Plan and the procedures to be followed.

All contractor personnel who have a role in responding to, reporting to the City, and/or mitigating wastewater collection system spills will receive training on the contents of the Response Plan.

At a minimum, in-house training will include the following items with appropriate documentation indicating the staff that received the training.

1. Review Spill Response **Figures 5.0** through **5.5**. Ensure everyone understands the differences and the steps to be taken with each.
2.

Review Spill Estimation Procedures

3. Review regulatory requirements, notification, and reporting procedures.
4. Discuss safety issues and procedures.

Training Record Keeping

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

Attachment 1: Forms

Category 1

Category 2

Category 3 & 4

City of Sacramento Public Injury/Property Loss Report (Red Border Form)

Category 1 Form

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CATEGORY 1

State Sewer Overflow Form

Work Order #: _____
(CMMS: PRIORITY 1 – HIGH) - ALWAYS

Spill Location Name: _____

Address: _____

Service Request #: _____
(If none, explain why)

Gallons: _____ **Category:** _____

State SPILL ID#: _____
(Only needed for Category 1, 2 or 3 spills)

North Area ____ **South Area** _____ **Combo** ____

Pictures Taken: Yes _____ **No** _____
If No Reason _____

Weather Conditions: Dry _____ **Rain** _____

Name of Person Completing Form:
_____

Reviewed by Supervisor: _____

Date Approved By Superintendent: ___/___/____

Date City Notified / Discovered the Spill: ___/___/____

Superintendent Signature: _____

1. Spill type:

Is the SPILL less than 1,000 Gallons, and any spill reaching a storm drain is fully recovered?

NO

Is the SPILL a 1,000 Gallons or more?

YES

If spill reached a storm drain pipe, was all of the wastewater fully captured and returned to the sanitary sewer system?

NO

Did the spill reach a waterway?
(If spill not fully recovered from storm drain system, it must be assumed the spill reached a waterway)

YES → **CATEGORY 1**

SEE ATTACHED INFORMATION SHEET FOR CATEGORY 1

Submit **Draft Report ASAP** [Max. **3 Business Days**]

Submit **Final Certified Report** [Max. **15 Days** of SPILL End Date]

SUBMIT BY: ____ / ____ / ____

SUBMIT BY: ____ / ____ / ____

SUBMITTED ON: ____ / ____ / ____

SUBMITTED ON: ____ / ____ / ____

Confirmation # _____

IF ENTIRE SPILL VOLUME IS NOT FULLY RECOVERED FROM STORM DRAIN SYSTEM, THEN IT IS A CATEGORY 1

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CATEGORY 1

State Sewer Overflow Form

1. Name and Title (Contact person who can answer specific questions about this SPILL):

1.(a) Kevin Guerra, Superintendent, Wastewater Collections

1.(b) Contact Person Phone Number: (916) 808-4022

2. Spill Location Name / Address of Spill: _____

REMINDER: MILITARY TIME

3. Estimated Spill Start Date and Time: ___ / ___ / ___ ___ : ___

4. Date and Time Agency Notified of or Discovered Spill: ___ / ___ / ___ ___ : ___

5. Estimated Operator Arrival Date and Time: ___ / ___ / ___ ___ : ___

6. Estimated Spill End Date and Time: ___ / ___ / ___ ___ : ___

For SPILL volumes 1000 gallons or more that enters surface water

(Not necessary to notify CAL-OES for Category 1 SPILL volumes less than 1000 gallons)

CAL-OES Phone Number: (800) 852-7550

7. CAL-OES (CALEMA) Notification Control Number: _____

8. CAL-OES Called Date and Time: ___ / ___ / ___ _____: _____

Time Notified Superintendent: _____: _____ **Release Point:** _____

MANDATORY 2 HOUR NOTIFICATION BY SUPERVISOR:

NUMBERS THAT MUST BE CALLED:		TIME CALLED:	NO ANSWER/LEFT MSG:
Cal OES (CALEMA)	1-800-852-7550	_____	_____

MANDATORY NOTIFICATION BY SUPERVISOR

		TIME CALLED:	NO ANSWER/LEFT MSG
Kevin Guerra	916-233-8600	_____	_____
Charley Cunningham	916-803-5455	_____	_____
Carlos Eliason	916-808-6839 CEliason@cityofsacramento.org	_____	_____

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CATEGORY 1

State Sewer Overflow Form

SUPERINTENDENT'S RESPONSIBILITY:

(5 day report)		**TIME CALLED**:	**NO ANSWER/LEFT MSG**:
Xuan Luo Xuan.Luo@waterboards.ca.gov			
CVRWB	916-464-3291	_____	_____

COMMENTS: Courtesy call to inform CVRWB of incident. The CVRWB should also be notified by Cal OES.

For spill location and spread, please find, and attach:

- Photograph(s) and GPS coordinates for:
  - The system location where spill originated. For multiple appearance points of a single spill event, use the points closest to the origin of spill failure.
- Photograph(s) for:
  - Drainage conveyance system entry locations,
  - The locations(s) of discharge into surface waters, as applicable,
  - Extent of spill spread, and,
  - The location(s) of clean up.
- Map Tile

9. Spill location description (use attachment if more than 2000 characters)

_____

_____

SPILL DETAILS

10. Number of appearance points:_____ **(See #13)**

11. Spill Appearance Point (Select ALL Applicable):

NOTE: If multiple appearance points, enter a description including location details of each appearance point

- ☐ Inside Building or Structure
- ☐ Lateral Clean Out (Private)
- ☐ Combined Sewer Drain Inlet
- ☐ Force Main
- ☐ Gravity Mainline
- ☐ Lower Lateral (Private)
- ☐ Manhole
- ☐ Other Sewer System Structure
- ☐ Pump Station
- ☐ Upper Lateral (Private)
- ☐ Other (Specify Below)

14. Final Appearance Point Explanation (Required if 'Other')

_____

_____

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CATEGORY 1

State Sewer Overflow Form

12. ESTIMATED SPILL VOLUME:
Answer each question with the number of gallons, even if it is zero.

a) Estimated spill volume that reached a separate storm drain that flows to a surface water body? (See g & h for spills in the combined system)	_____ gallons	**AMOUNT OF SPILL THAT ENTERED STORM DRAIN INCLUDING PORTION WASHED IN FROM LAND** **(Separated Only)**
b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)	_____ gallons	

IF PORTION IS NOT RECOVERED IT IS A CATEGORY 1

c) Estimated spill volume that reached a drainage channel that flows to a surface water body?	_____ gallons	**ENTERED DRAINAGE CHANNEL OR SURFACE WATERS (CATEGORY 1)**
d) Estimated spill volume recovered from a drainage channel that flows to a surface water body?	_____ gallons	
e) Estimated spill volume discharged directly to a surface water body?	_____ gallons	
f) Estimated spill volume recovered from surface water body?	_____ gallons	

g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location.)		**COMBO or SEPARATED SYSTEMS** **TO LAND** *(PORTION OF SPILL THAT DID NOT ENTER SEPERATED SYSTEM)*
Enter estimated volume for spills in the combined system here	_____ gallons	**CONTROLLED CONVEYANCE CHANNEL**
h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up)	_____ gallons	

IF PORTION IS NOT RECOVERED IT IS A CATEGORY 2 (SEE SEPARATE FORM)

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CATEGORY 1

State Sewer Overflow Form

13. Did the spill discharge to a Drainage Channel and/or Surface Water? ____ Yes ____ No

14. Did the spill reach a Separated (i.e., not combined) Storm drain pipe? ____ Yes ____ No

15. If spill reached a Separated storm drain pipe, was all of the Wastewater fully captured from the Separated storm drain And returned to the sanitary sewer system? ____ Yes ____ No ____N/A

16. Spill Cause (select ONE) (Check Other if More Than One Spill Cause)

- ☐ Air Relief Valve (ARV)/Blow-Off Valve (BOV) Failure
- ☐ Construction Diversion Failure
- ☐ Maintenance Caused Spill/Damage
- ☐ Damage by Others not Related to Construction/Maintenance (Specify Below)
- ☐ Debris from Construction
- ☐ Debris from Lateral
- ☐ Debris – General
- ☐ Debris – Rags
- ☐ Flow Exceeded Capacity (Separated System Only)
- ☐ Grease Deposition (FOG)
- ☐ Inappropriate Discharge
- ☐ Natural Disaster
- ☐ Operator Error
- ☐ Pipe Structural Problem/Failure
- ☐ Pipe Structural Problem/Failure - Installation
- ☐ Pump Station Failure – Controls
- ☐ Pump Station Failure – Mechanical
- ☐ Pump Station Failure - Power
- ☐ Rainfall Exceeded Design Storm Event (See #18 below)
- ☐ Root Intrusion
- ☐ Siphon Failure
- ☐ Surcharged Pipe (Combined System Only)
- ☐ Vandalism
- ☐ Other (Specify Below)

17. Spill Cause Explanation (Required if 'Other' or 'Damage by Others'):

_____
_____
_____
_____

18. Was this spill associated with a storm event? _____ **Yes** _____ **No**

Note: Where storm impacted sewer flow conditions (storm induced inflow and/or infiltration) were contributing factors to the SPILL.

If "Rainfall Exceeded Design Storm Event" box checked in Question # 16 above, Spill Cause, then select yes; otherwise, select No.

City of SACRAMENTO
Department of Utilities

CURRENT FORM 08-29-2023 CATEGORY 1

State Sewer Overflow Form

19. Final Spill Destination (Select ALL Applicable)
Note: Anywhere Spill Touched

- ☐ Beach
- ☐ Building or Structure
- ☐ Combined Storm Drain (Combo System Only)
- ☐ Drainage Channel
- ☐ Paved Surface
- ☐ Separate Storm Drain
- ☐ Street/Curb and Gutter
- ☐ Surface Water
- ☐ Unpaved Surface
- ☐ Controlled Conveyance Channel
- ☐ Other (Specify)

20. Explanation of Final Spill Destination (Required if 'Other')

_____

_____

21. Where did failure occur? (select ONE):

- ☐ Air Relief Valve (ARV)/Blow-off Valve (BOV)
- ☐ Force Main
- ☐ Gravity/Mainline
- ☐ Manhole
- ☐ Pump Station - Controls
- ☐ Pump Station – Mechanical
- ☐ Pump Station - Power
- ☐ Siphon
- ☐ Other (Specify)

22. Explanation of Where Failure Occurred (Required if 'Other'):

_____

_____

23. Diameter of pipe at the point of blockage or failure: _____ inches

24. Material of sewer pipe at the point the point of blockage or failure: _____

25. Estimated age of sewer asset at the point of blockage or failure (years): _____

26. Spill Response Activities (select ALL applicable):

- ☐ Cleaned-Up
- ☐ Mitigated Effects of Spill
- ☐ Contained All or Portion of Spill
- ☐ Inspected Sewer using CCTV to Determine Cause
- ☐ Property Owner Notified
- ☐ Other Enforcement Agency Notified
- ☐ Restored Flow
- ☐ Returned All of Spill to Sewer System
- ☐ Returned a Portion of Spill to Sewer System
- ☐ Other (Specify - next page)

City of SACRAMENTO
Department of Utilities

CURRENT FORM 08-29-2023 CATEGORY 1

State Sewer Overflow Form

27. Explanation of spill response activities (Required if 'Other'):

_____
_____
_____

28. Spill Response Completion Date: ___ / ___ / ___ ___ :___
(i.e., when staff completed field cleanup work) Military Time

29. Spill Corrective Action Taken (Select ALL Applicable):

☐ Added Sewer to Preventative Maintenance Program

PREVENTATIVE MAINTENANCE (PM) W.O. NUMBER & DATE
PM W.O. #_____ PM W.O. Date _____
To be filled out by Scheduler Planner

☐ Adjusted Scheduled/Method of Preventative Maintenance

PREVENTATIVE MAINTENANCE (PM) SCHEDULE ADJUSTMENT
W.O. # _____ Schedule Adjusted to: _____
To be filled out by Scheduler Planner

☐ Enforcement Action against FOG Source
☐ Inspect Sewer Using CCTV to Determine Cause
☐ Plan Rehabilitation or Replacement of Sewer
☐ Repaired Sewer or Replaced Defect
☐ Other (Specify Below)

30. Explanation of spill corrective action taken (Required if 'Other'):

_____
_____

31. (a) Is there an Ongoing Investigation? _____ Yes _____ No

31. (b) Explain reason for Ongoing Investigation:

_____
_____

32. Did the spill result in a beach closure: (if YES answer Question 34) _____ Yes _____ No

33. Name of Impacted Beach (enter NA if not applicable): _____

CURRENT FORM 08-29-2023 CATEGORY 1

State Sewer Overflow Form

34. Name of Impacted Surface Water(s):

- ☐ Sacramento River
- ☐ American River
- ☐ Arcade Creek
- ☐ Beach Lake
- ☐ Magpie Creek
- ☐ Morrison Creek
- ☐ Rio Linda Creek
- ☐ Union House Creek
- ☐ Anderson Slough
- ☐ Willow Slough
- ☐ Other _____

35. Health Warnings Posted? _____ Yes _____ No

Note: Postings at or near the water bodies or other areas affected by the SPILL

36. Water Quality Samples Analyzed for (select ALL applicable):

Note: Mandatory for spills over 50,000 gallons. See the SPILL Water Quality Monitoring Program Plan for further detail.

- ☐ Dispelled Oxygen
- ☐ Other Chemical Indicator(s) (Specify Below)
- ☐ Biological Indicator(s) (Specify Below)
- ☐ No Water Quality Samples Taken
- ☐ Not Applicable to this Spill
- ☐ Other (Specify Below)

37. Explanation (Required if 'Other Chemical Indicator(s)', 'Biological Indicator(s)', or 'Other'):

_____

_____

38. Water Quality Samples Reported to (select ALL applicable):

- ☐ County Health Agency
- ☐ Regional Water Quality Control Board
- ☐ None of the Above
- ☐ No Water Quality Samples Taken
- ☐ Not Applicable to this Spill
- ☐ Other

39. Explanation of water quality sample results reported to (Required if 'Other'):

_____

_____

_____

40. Visual inspection results from impacted receiving water:

_____

_____

City of SACRAMENTO
Department of Utilities

CURRENT FORM 08-29-2023 CATEGORY 1

State Sewer Overflow Form

Conversion Chart		
Inches	to	Feet
1/8"	=	.01'
1/4"	=	.02'
3/8"	=	.03'
1/2"	=	.04'
5/8"	=	.05'
3/4"	=	.06'
7/8"	=	.07'
1"	=	.08'
2"	=	.17'
3"	=	.25'
4"	=	.33'
5"	=	.42'
6"	=	.50'
7"	=	.58'
8"	=	.67'
9"	=	.75'
10"	=	.83'
11"	=	.92'
12"	=	1'

41. Explanation/Summary of volume spilled estimation methods that were used and how they were calculated:

(Describe how you developed calculations for the spill volume)

_____

_____

_____

42. Description of the methodology(ies), assumptions and type of data used for estimations of the spill start time and the spill end time:

_____

_____

_____

W.O. NUMBER & DATE COMPLETED BY RESPONSIBLE SUPERVISOR

WW CCTV _____ Date _____

WWJET CLEAN _____ Date _____

WW FROG-ROD _____ Date _____

WW SPILL-REPAIR _____ Date _____

ANY WORK ORDER ASPILLCIATED WITH A SPILL IS HIGH PRIORITY #1

MAIN PLUGGED BETWEEN:

Upstream Manhole:

_____

Downstream Manhole:

_____

Category 2 Form

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CATEGORY 2

State Sewer Overflow Form

Work Order #: _____ **Spill Location Name:** _____
(CMMS: PRIORITY 1 – HIGH) - ALWAYS

Service Request #: _____ **Address:** _____
If none, explain why.

Category: _____ **Gallons:** _____

State SPILL (Event) ID#: _____
(Only needed for Category 1, 2 or 3 spills)

North Area ____ **South Area** ____ **Combo**_____

Pictures Taken: Yes _____ **No** _____
If No Reason _____

Weather Conditions: Dry _____ **Rain** _____

Reviewed by Supervisor: _____

Name of Person Completing Form/ First Responder:
_____

Date City Notified/ Discovered the Spill: ___ /___/_____

Date Approved by Superintendent: ___/____/_____

Superintendent Signature: _____

Spill type:

Is the SPILL less than 1,000 Gallons, and is any spill reaching a storm drain fully recovered?

↓ **NO**

Is the SPILL a 1,000 Gallons or more?

↓ **YES**

If spill reached a storm drain pipe, was all of the wastewater fully captured and returned to the sanitary sewer system?

YES → Continue with **CATEGORY 2** form

↓ **NO**

Did the spill reach a waterway? (If spill not fully recovered from storm drain system, it must be assumed the spill reached a waterway)

YES →

IF ENTIRE SPILL VOLUME IS NOT FULLY RECOVERED FROM STORM DRAIN SYSTEM, STOP AND FILL OUT CATEGORY 1 FORM

Submit **Draft Report ASAP** [Max. **3 Business Days**]

SUBMIT BY: ____ / ____ / ____

SUBMITTED ON: ____ / ____ / ____

Submit **Final Certified Report** [Max. **15 Days** of SPILL End Date]

SUBMIT BY: ____ / ____ / ____

SUBMITTED ON: ____ / ____ / ____

Confirmation # _____

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CATEGORY 2

State Sewer Overflow Form

1. Name and Title (Contact person who can answer specific questions about this SPILL):

1.(a) Kevin Guerra, Superintendent, Wastewater Collections

2.(b) Contact Person Phone Number: (916) 808-4022

2. Spill Location Name / Address of Spill: _____

REMINDER: MILITARY TIME

3. Estimated Spill Start Date and Time: ___ / ___ / ___ ___ : ___

4. Date and Time Agency Notified of or Discovered Spill: ___ / ___ / ___ ___ : ___

5. Estimated Operator Arrival Date and Time: ___ / ___ / ___ ___ : ___

6. Estimated Spill End Date and Time: ___ / ___ / ___ ___ : ___

Time Notified Superintendent: _____ : _____ **Release Point:** _____

CAL-OES (CALEMA) Notification Control Number: _____

MANDATORY 2 HOUR NOTIFICATION BY SUPERVISOR:

NUMBERS THAT MUST BE CALLED:		TIME CALLED:	NO ANSWER/LEFT MSG:
Cal OES (CALEMA)	1-800-852-7550	_____	_____

MANDATORY NOTIFICATION BY SUPERVISOR

		TIME CALLED:	NO ANSWER/LEFT MSG:
Kevin Guerra	916-233-8600	_____	_____
Charley Cunningham	916-803-8455	_____	_____
Carlos Eliason	916-808-6839 CEliason@cityofsacramento.org	_____	_____

SUPERINTENDENT'S RESPONSIBILITY:

(5 day report) Xuan Luo Xuan.Luo@waterboards.ca.gov		TIME CALLED:	NO ANSWER/LEFT MSG:
CVRWB	916-464-3291	_____	_____

COMMENTS: Courtesy call to inform CVRWB of incident. The CVRWB should also be notified by Cal OES.

For spill location and spread, please find and attach:

Photograph(s) and GPS coordinates for:

- The system location where spill originated.
  For multiple appearance points of a single spill event, use the points closest to the origin of spill failure.

Photograph(s) for:

- Drainage conveyance system entry locations,
- The locations(s) of discharge into surface waters, as applicable,
- Extent of spill spread, and,
- The location(s) of clean up.

- Map Tile

7. Spill location description (use attachment if more than 2000 characters)

_____
_____
_____
_____

SPILL DETAILS

8. Number of appearance points: _____ (See #8)

9. Spill Appearance Point (Select ALL Applicable):
NOTE: If multiple appearance points, enter a description including location details of each appearance point

- ☐ Inside Building or Structure
- ☐ Lateral Clean Out (Private)
- ☐ Combined Sewer Drain Inlet
- ☐ Force Main
- ☐ Gravity Mainline
- ☐ Lower Lateral (Private)
- ☐ Manhole
- ☐ Other Sewer System Structure
- ☐ Pump Station
- ☐ Upper Lateral (Private)
- ☐ Other (Specify Below)

10. Final Appearance Point Explanation (Required if 'Other')

_____
_____
_____

City of SACRAMENTO
Department of Utilities

CURRENT FORM 8-29-23 CATEGORY 2

State Sewer Overflow Form

11. ESTIMATED SPILL VOLUME:
Answer each question with the number of gallons, even if it is zero.

a) Estimated spill volume that reached a separate storm drain that flows to a surface water body? (See g & h for spills in the combined system)	_____ gallons	**AMOUNT OF SPILL THAT ENTERED STORM DRAIN INCLUDING PORTION WASHED IN FROM LAND**
b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)	_____ gallons	**(Separated Only)**

IF PORTION IS NOT RECOVERED IT IS A CATEGORY 1

g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location.) Enter estimated volume for spills in the combined system here	_____ gallons	**COMBO or SEPARATED SYSTEMS** **TO LAND** *(PORTION OF SPILL THAT DID NOT ENTER SEPERATED SYSTEM)*
h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up)	_____ gallons	**CONTROLLED CONVEYANCE CHANNEL**

IF PORTION IS NOT RECOVERED IT IS A CATEGORY 2 (SEE SEPARATE FORM)

12. Did the spill discharge to a Drainage Channel and/or Surface Water? ____ Yes ____ No

13. Did the spill reach a Separated (i.e., not combined) Storm drain pipe? ____ Yes ____ No

14. If spill reached a Separated storm drain pipe, was all of the Wastewater fully captured from the Separated storm drain And returned to the sanitary sewer system? ____ Yes ____ No ___NA

15. Final Spill Destination (Select ALL Applicable):
Note: Anywhere Spill Touched

- ☐ Beach
- ☐ Building or Structure
- ☐ Combined Storm Drain (Combo System Only)
- ☐ Drainage Channel
- ☐ Paved Surface
- ☐ Separate Storm Drain
- ☐ Street/Curb and Gutter
- ☐ Surface Water
- ☐ Unpaved Surface
- ☐ Controlled Conveyance Channel
- ☐ Other (Specify Below)

16. Explanation of Final Spill Destination (Required if 'Other')

_____

_____

17. Spill Cause (select ONE) (Check Other if More Than One Spill Cause)

- ☐ Air Relief Valve (ARV)/Blow-Off Valve (BOV) Failure
- ☐ Construction Diversion Failure
- ☐ Maintenance Caused Spill/Damage
- ☐ Damage by Others not Related to Construction/Maintenance (Specify Below)
- ☐ Debris from Construction
- ☐ Debris from Lateral
- ☐ Debris – General
- ☐ Debris – Rags
- ☐ Flow Exceeded Capacity (Separated System Only)
- ☐ Grease Deposition (FOG)
- ☐ Inappropriate Discharge
- ☐ Natural Disaster
- ☐ Operator Error
- ☐ Pipe Structural Problem/Failure
- ☐ Pipe Structural Problem/Failure - Installation
- ☐ Pump Station Failure – Controls
- ☐ Pump Station Failure – Mechanical
- ☐ Pump Station Failure - Power
- ☐ Rainfall Exceeded Design Storm Event (See #19 below)
- ☐ Root Intrusion
- ☐ Siphon Failure
- ☐ Surcharged Pipe (Combined System Only)
- ☐ Vandalism
- ☐ Other (Specify Below)

18. Spill Cause Explanation (Required if 'Other' or 'Damage by Others'):

_____

_____

19. Was this spill associated with a storm event? **____ Yes ____ No**

Note: Where storm impacted sewer flow conditions (storm induced inflow and/or infiltration) were contributing factors to the SPILL.

If "Rainfall Exceeded Design Storm Event" box checked in Question # 17 above, Spill Cause, then select yes; otherwise, select No.

20. Where did failure occur? (select ONE):

- ☐ Air Relief Valve (ARV)/Blow-off Valve (BOV)
- ☐ Force Main
- ☐ Gravity/Mainline
- ☐ Manhole
- ☐ Pump Station - Controls
- ☐ Pump Station – Mechanical
- ☐ Pump Station - Power
- ☐ Siphon
- ☐ Other (Specify below)

21. Explanation of Where Failure Occurred (Required if 'Other'):

_____

_____

22. Diameter of pipe at the point of blockage or failure: _____**inches**

23. Material of sewer pipe at the point the point of blockage or failure: _____

24. Estimated age of sewer asset at the point of blockage or failure (years): _____

25. Spill Response Activities (select ALL applicable):

- ☐ Cleaned-Up
- ☐ Mitigated Effects of Spill
- ☐ Contained All or Portion of Spill
- ☐ Inspected Sewer using CCTV to Determine Cause
- ☐ Property Owner Notified
- ☐ Other Enforcement Agency Notified
- ☐ Restored Flow
- ☐ Returned All of Spill to Sewer System
- ☐ Returned a Portion of Spill to Sewer System
- ☐ Other (Specify below)

26. Explanation of spill response activities (Required if 'Other'):

_____

_____

_____

_____

_____

27. Spill Response Completion Date: ___ / ___ / ___ ___ :___

(i.e., when staff completed field cleanup work) Military Time

28. Spill Corrective Action Taken (Select ALL Applicable):

☐ Added Sewer to Preventative Maintenance Program

PREVENTATIVE MAINTENANCE (PM) W.O. NUMBER & DATE
PM W.O. #_____ PM W.O. Date _____
To be filled out by Scheduler Planner

☐ Adjusted Scheduled/Method of Preventative Maintenance

PREVENTATIVE MAINTENANCE (PM) SCHEDULE ADJUSTMENT
W.O. # _____ Schedule Adjusted to: _____
To be filled out by Scheduler Planner

☐ Enforcement Action against FOG Source
☐ Inspect Sewer Using CCTV to Determine Cause
☐ Plan Rehabilitation or Replacement of Sewer
☐ Repaired Sewer or Replaced Defect
☐ Other (Specify below)

29. Explanation of spill corrective action taken (Required if 'Other'):

_____

_____

Ongoing Investigations:

30. (a) Is there an Ongoing Investigation? ____ Yes ____ No

30. (b) Explain reason for Ongoing Investigation:

_____

_____

_____

31. Explanation/Summary of volume spilled estimation methods that were used and how they were calculated:

(Describe how you developed calculations for the spill volume)

_____

_____

_____

32. Description of the methodology(ies), assumptions and type of data used for estimations of the spill start time and the spill end time:

_____

_____

_____

Conversion Chart		
Inches	to	Feet
1/8"	=	.01'
1/4"	=	.02'
3/8"	=	.03'
1/2"	=	.04'
5/8"	=	.05'
3/4"	=	.06'
7/8"	=	.07'
1"	=	.08'
2"	=	.17'
3"	=	.25'
4"	=	.33'
5"	=	.42'
6"	=	.50'
7"	=	.58'
8"	=	.67'
9"	=	.75'
10"	=	.83'
11"	=	.92'
12"	=	1'

City of SACRAMENTO
Department of Utilities

CURRENT FORM 8-29-23 CATEGORY 2

State Sewer Overflow Form

W.O. NUMBER & DATE COMPLETED BY RESPONSIBLE SUPERVISOR

WW CCTV _____ Date _____

WWJET CLEAN _____ Date _____

WW FROG-ROD _____ Date _____

WW SPILL-REPAIR _____ Date _____

ANY WORK ORDER ASPILLCIATED WITH A SPILL IS HIGH PRIORITY #1

MAIN PLUGGED BETWEEN:

Upstream Manhole:

_____

Downstream Manhole:

_____

Category 3 & 4 Form

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CAT 3/4

State Sewer Overflow Form

Work Order #: _____
(CMMS: PRIORITY 1 – HIGH) - ALWAYS

Service Request #: _____
If none, explain why.

State SPILL (Event) ID#: _____
(Only needed for Category 1, 2 or 3 spills)

Pictures Taken: Yes _____ **No** _____
If No Reason _____

Name of Person Completing Form/ First Responder:
_____

Date Approved by Superintendent: _____

Superintendent Signature: _____

Address: _____

Category: 3___ **4**____

**(Category 3 – more than 50 gallons to 999 gallons
Category 4 – less than 50 gallons)**

Total Gallons Spilled: _____

North Area _____ **South Area** _____ **Combo**___

Weather Conditions: Dry _____ **Rain** _____

Reviewed by Supervisor: _____

Date Spill Occurred: ___ / ___ / ___

Spill type:

Is the SPILL less than 1,000 Gallons, and any spill reaching a storm drain is fully recovered?

YES → **CATEGORY 3** - 50 gallons to 999 gallons

YES → **CATEGORY 4** - Less than 50 gallons

NO → STOP

IF SPILL IS NOT RECOVERED OR IS OVER 1,000 GALLONS FILL OUT CATEGORY 1 or 2 FORMS

(If any portion of spill volume is not fully recovered from storm drain system, then it is a Category 1.)

Submit **certified report** within **30 days** from end of calendar month in which SPILL occurs.

SUBMIT BY: ____ / ____ / ____

SUBMITTED ON: ____ / ____ / ____

Confirmation # _____

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CAT 3/4

State Sewer Overflow Form

1. Name and Title of contact person who can answer specific questions about this SPILL:

1.(a) Kevin Guerra, Superintendent, Wastewater Collections

1.(b) Contact Person Phone Number: (916) 808-4022

2. Spill Location Name / Address of Spill: _____

REMINDER: MILITARY TIME

3. **Estimated Spill Start Date and Time:** ___ / ___ / ___ ___ : ___

4. **Date and Time Agency Notified of or Discovered Spill:** ___ / ___ / ___ ___ : ___

5. **Estimated Operator Arrival Date and Time:** ___ / ___ / ___ ___ : ___

6. **Estimated Spill End Date and Time:** ___ / ___ / ___ ___ : ___

7. **Spill location description** (**Use attachment if location description is longer than space provided**):

_____

_____

_____

For spill location and spread, please find and attach:

Photograph(s) and GPS coordinates for:

- The system location where spill originated.
  For multiple appearance points of a single spill event, use the points closest to the origin of spill failure.

Photograph(s) for:

- Drainage conveyance system entry locations,
- The locations(s) of discharge into surface waters, as applicable,
- Extent of spill spread, and,
- The location(s) of clean up.

- Map Tile

Private Lateral Spill? (IF YES GO BACK TO PAGE 1 AND STOP) ____ Yes ____ No

City of SACRAMENTO
Department of Utilities

CURRENT FORM 5-9-2024 CAT 3/4

State Sewer Overflow Form

8. **Number of appearance points**: _____ (See #9)

9. **Spill Appearance Point (Select ALL Applicable):**

NOTE: If multiple appearance points, enter a description including location details of each appearance point

- ☐ Backflow Prevention Device
- ☐ Combined Sewer Drain Inlet (Combo System Only)
- ☐ Force Main
- ☐ Gravity Mainline
- ☐ Inside Building or Structure
- ☐ Lateral Clean Out (Private)
- ☐ Lateral Clean Out (Public)
- ☐ Lower Lateral (Private)
- ☐ Lower Lateral (Public)
- ☐ Manhole
- ☐ Other Sewer System Structure
- ☐ Pump Station
- ☐ Upper Lateral (Private)
- ☐ Upper Lateral (Public)
- ☐ Other (Specify Below)

10. **Final Appearance Point Explanation (Required if 'Other'):**

_____

_____

Surface Water:			CALCULATED AMOUNT OF SPILL THAT ENTERED STORM DRAIN INCLUDING PORTION WASHED IN FROM LAND (Separated Only)
a) Estimated **spill volume** that reached a separate storm drain that flows to a surface water body? (See g & h for spills in the combined system)	_____	gallons	
b) Estimated **spill volume recovered** from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)	_____	gallons	

IF ANY PORTION IS NOT RECOVERED IT IS A CATEGORY 1 (SEE SEPARATE FORM)

Land:			COMBO or SEPARATED SYSTEMS (PORTION OF SPILL THAT DID NOT ENTER SEPERATED SYSTEM) *CONTROLLED CONVEYANCE CHANNEL*
g) Estimated **spill volume** discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location. Also, includes backups to building structures.) (Land = soil, grass, street, curb, gutter, etc.) Enter estimated volume for spills in the combined system here.	_____	gallons	
h) Estimated spill **volume recovered** from the discharge to land? (Do not include water used for clean-up)	_____	gallons	

IF OVER 1,000 GALLONS THIS IS A CATEGORY 2 (SEE SEPARATE FORM)

11. Did the spill discharge to a Drainage Channel and/or Surface Water? ____ Yes ____ No

12. Did the spill reach a Separated (i.e., not combined) storm drain pipe? ____ Yes ____ No

13. If spill reached a Separated storm drain pipe, was all of the wastewater fully captured from the Separated storm drain and returned to the sanitary sewer system? ____ Yes ____ No ___NA

14. Final Spill Destination (Select ALL Applicable)
Note: List anywhere the spill touched

- ☐ Beach
- ☐ Building or Structure
- ☐ Combined Storm Drain (Combo System Only)
- ☐ Drainage Channel
- ☐ Paved Surface
- ☐ Separate Storm Drain
- ☐ Street/Curb and Gutter
- ☐ Surface Water
- ☐ Unpaved Surface
- ☐ Controlled Conveyance Channel
- ☐ Other (Specify Below)

15. Explanation/Description of Final Spill Destination (Required if 'Other')

_____
_____
_____
_____

16. Explanation/Summary of volume spilled estimation methods that were used and how they were calculated:
(Describe how you developed calculations for the spill volume)

_____
_____
_____
_____

17. Description of the methodology(ies), assumptions and type of data used for estimations of the spill start time and the spill end time:

_____
_____
_____
_____

Conversion Chart		
Inches	to	Feet
1/8"	=	.01'
1/4"	=	.02'
3/8"	=	.03'
1/2"	=	.04'
5/8"	=	.05'
3/4"	=	.06'
7/8"	=	.07'
1"	=	.08'
2"	=	.17'
3"	=	.25'
4"	=	.33'
5"	=	.42'
6"	=	.50'
7"	=	.58'
8"	=	.67'
9"	=	.75'
10"	=	.83'
11"	=	.92'
12"	=	1'

18. Spill Cause (select ONE) (Check "Other" if More Than One Spill Cause)

- ☐ Air Relief Valve (ARV)/Blow-Off Valve (BOV) Failure
- ☐ Construction Diversion Failure
- ☐ Maintenance Caused Spill/Damage
- ☐ Damage by Others not Related to Collection System Construction/Maintenance (Specify Below)
- ☐ Debris from Construction
- ☐ Debris from Lateral
- ☐ Debris – General
- ☐ Debris – Rags
- ☐ Debris – wipes/non-dispersible
- ☐ Flow Exceeded Capacity (Separated System Only)
- ☐ Grease Deposition (FOG)
- ☐ Inappropriate Discharge to System
- ☐ Natural Disaster (Specify Below)
- ☐ Operator Error (Specify Below)
- ☐ Pipe Structural Problem/Failure
- ☐ Pipe Structural Problem/Failure - Installation
- ☐ Pump Station Failure – Controls
- ☐ Pump Station Failure – Mechanical
- ☐ Pump Station Failure - Power
- ☐ Rainfall Exceeded Design Storm Event (I & I - See #20 below)
- ☐ Root Intrusion
- ☐ Siphon Failure
- ☐ Surcharged Pipe (Combined System Only)
- ☐ Vandalism
- ☐ Other (Specify Below)

19. Spill Cause Explanation (Required if highlighted yellow):

_____

_____

20. Was this spill associated with a storm event? ____ Yes ____ No

Note: Where storm impacted sewer flow conditions (storm induced inflow and/or infiltration) were contributing factors to the SPILL.

If "Rainfall Exceeded Design Storm Event" box checked in Question # 18 above, Spill Cause, then select yes; otherwise, select "No".

21. Where did failure occur? (select ONE):

- ☐ Air Relief Valve (ARV)/Blow-off Valve (BOV)
- ☐ Force Main
- ☐ Gravity/Mainline
- ☐ Manhole
- ☐ Pump Station - Controls
- ☐ Pump Station – Mechanical
- ☐ Pump Station - Power
- ☐ Siphon
- ☐ Other (Specify Below)

22. Explanation of Where Failure Occurred (Required if 'Other')

_____

_____

_____

_____

23. Diameter of pipe at the point of blockage or failure: _____ **inches**

24. Material of sewer pipe at point of blockage or failure: _____

25. Estimated age of sewer asset at the point of blockage or failure (in years): _____

26. Spill Response Activities (select ALL applicable):

- ☐ Cleaned-Up (Specify Below)
- ☐ Mitigated Effects of Spill (Specify Below)
- ☐ Contained All or Portion of Spill
- ☐ Inspected Sewer using CCTV to Determine Cause
- ☐ Property Owner Notified
- ☐ Other Enforcement Agency Notified
- ☐ Restored Flow
- ☐ Returned All of Spill to Sewer System
- ☐ Returned a Portion of Spill to Sewer System
- ☐ Other (Specify Below)

27. Explanation of spill response activities (Required if highlighted yellow):

_____

_____

28. Spill Corrective Action Taken (Select ALL Applicable):

- ☐ Added Sewer to Preventative Maintenance Program

PREVENTATIVE MAINTENANCE (PM) W.O. NUMBER & DATE
PM W.O. #_____ PM W.O. Date _____
To be filled out by Scheduler Planner

- ☐ Adjusted Scheduled/Method of Preventative Maintenance

PREVENTATIVE MAINTENANCE (PM) SCHEDULE ADJUSTMENT
W.O. # _____ Schedule Adjusted to: _____
To be filled out by Scheduler Planner

- ☐ Enforcement Action against fats, oils, and grease (FOG) Source
- ☐ Inspect Sewer Using CCTV to Determine Cause
- ☐ Plan Rehabilitation or Replacement of Sewer
- ☐ Repaired Sewer or Replaced Defect
- ☐ Other (Specify Below)

29. Explanation of spill corrective action taken (Required if you checked 'Other'):

_____

_____

CURRENT FORM 8-29-23 CAT 3/4

State Sewer Overflow Form

30. Spill Response Completion Date: ___ / ___ / ___ ___:___

(i.e., when staff completed field cleanup work) Military Time

31. Description of system operation, maintenance and program modifications implemented to prevent repeated spill occurrences at the same spill location:

(List immediate system modifications/action items)

_____

_____

MAIN PLUGGED BETWEEN:

Upstream Manhole:

_____

Downstream Manhole:

_____

W.O. NUMBER & DATE COMPLETED BY RESPONSIBLE SUPERVISOR

WW CCTV _____ Date _____

WWJET CLEAN _____ Date _____

WW FROG-ROD _____ Date _____

WW SPILL-REPAIR _____ Date _____

ANY WORK ORDER ASPILLCIATED WITH A SPILL IS HIGH PRIORITY #1

City of Sacramento Public Injury/Property Loss Report (Red Border Form)

CITY OF SACRAMENTO
PUBLIC INJURY/PROPERTY LOSS REPORT

CLAIM NO.

Risk Mgt. Use Only	Dept ID	Dept./Division

INSTRUCTIONS FOR FORM COMPLETION --

SECTION I (Front) Whenever a third party (public) sustains physical injury while on City property, property damage and/or it appears that the City may be liable.

SECTION II (Back) Whenever damage or loss involves City property (i.e.,fire, money or securities, vandalism -- facilities, property, or equipment).

SECTION 1

IMPORTANT!
1. Call Police 732-0100 advising City involvement.
2. Keep calm and assist third party.
3. Do not admit fault.
4. Get name of injured Party and/or owner of damaged property.
5. Carefully examine accident. Take photographs if possible.
6. Do not talk to anyone about accident, except: your supervisor, the Police, or City Adjuster.
7. If applicable, complete this section of Incident/Loss Report and distribute as required (below) within 24 hours.

NOTE! In case there appears to be serious injuries, or extensive property damage, telephone the City's Safety Officer at 808-5278. (After normal work hours, call Sacramento City 311 at 264-5011).

Date & Time of Incidence	Location of Occurrence		Time Police Notified	Police Incident Report Number ☐ None
Injured Person(s)	Name, Address & Phone Number			
	Name, Address & Phone Number			
Injury Description	The Nature & Location of Injury:		Was injured person taken to hospital?_____ Name of Hospital_____ Name of Doctor_____	
Property Damage	Owner & Address		Business Phone Residence Phone	
	List of Property Damaged:			
Witness(s)	Name, Address & Phone number			
	Name, Address & Phone number			
	Name, Address & Phone number			
Description of Incident				
Report Filed By	Name	Title	Date	Signature
	Dept ID / Dept. / Division			Phone number

(If additional space is required use supplemental sheet of paper and attach hereto.)

DISTRIBUTION

Original and 1 Copy to Risk Mgmt.
1 Copy retained by Dept/Div.

Dept ID _____ Dept./Div.Signature _____ Date _____ Phone No _____

FORM RM 3 (3/09)

Risk Mgmt. Reviewer _____ Date _____ Phone No _____

SECTION II

IMPORTANT! 1. **Call Police 264-5471 immediately on theft and vandalism losses, advising if loss involves City property.**
2. **Call Risk Management** 808-5278 **immediately on fire, money and securities losses**, severe damage to City property, etc.
3. **If applicable, complete this section of Incident/Loss Report and distribute as required (below) within 24 hours.**

Date & Time of Incident	**Location of** Incident	**Time Police Notified**	Police Incident Report Number

Description of Incident	
Probable Cause	
Proposed Corrective Action	
Witness(s)	
Est. Cost of Replacement	
Inventory Tag Number	

Report Filed By	Name	Title	Date	Signature
	Dept ID / Department	Division		Phone

(If additional space is required use supplemental sheet of paper and attach hereto.)

Original and 1 Copy to Risk Mgmt.	Dept ID	Dept./Div. Signature	Date	Phone No.
FORM RM 3 (3/09)		Risk Mgmt. Reviewer	Date	Phone No.

Attachment 2: Water Quality Monitoring Plan

City of Sacramento
Department of Utilities (DOU)

WATER QUALITY MONITORING PLAN

Updated: June 2023

Table of Contents

List of Acronyms

BOD	Biochemical oxygen demand
CFS	Cubic feet per second
CIWQS	California Integrated Water Quality System
DO	Dissolved oxygen
DOU	Department of Utilities
DWQ	Department of Water Quality (of the State Water Resources Control Board)
E. Coli	Escherichia coli (bacteria)
EC	Electrical conductivity
ERP	Emergency Response Plan
Field QC	Field Quality Control
GPM	Gallons per minute
GPS	Global positioning system

LRO	Legally Responsible Official
Mg/l	Milligrams per liter
MPN	Most probable number
MRP	Monitoring and Reporting Program
NH3-N	Ammonia as Nitrogen
PFD	Personal flotation device
PPE	Personal protective equipment
ppm	Parts per million
QA/QC	Quality Assurance/Quality Control
Central Valley Water Board	Central Valley Regional Water Quality Control Board
SOP	Standard Operating Procedures
SSMP	Sewer System Management Plan
SSS WDR	Waste Discharge Requirements for Sanitary Sewer Systems
SWRCB	State Water Resources Control Board
TBD	To be determined
WDR	Waste Discharge Requirements

Glossary

Combined Sewer System (CSS) – includes the portion of the City sewer system that collects and conveys sewage, stormwater and surface runoff.

Combined Sewer Outflow (CSS Outflow) - any spill, release, discharge or diversion of sewage or sewage combined with stormwater from the combined sewer collection system. **Combined System Overflow (CSO)** – releases of wastewater flows of the combined sewer system and/or treatment facility to the Sacramento River.

Plug Flow Reactor (PFR) Model – is conceptually represented as a tube through which fluid flows. In the idealized model, the cross-sectional area is assumed uniform with length, the fluid velocity is uniform at all points, and there is no longitudinal mixing. The plug flow reactor model can be used to determine the approximate downstream location or impact from the spill, which is estimated as the multiplication of the time since the spill reached the receiving water and the average receiving water velocity.

Spill –as any discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Spillsinclude:

- Spills that reach surface waters; Spills that exit the sanitary sewer system that do not reach waters of the United States
- ; and
- 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.

Spills do not include:

- Sewage discharges into temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are not considered to be spills.
- Sewage that has flowed out of a pipe through a crack, break, or other pipeline defect and is confined to the pipe bedding and/or backfill. These are not considered spills if the sewage has not migrated to native soil outside of the original construction trench.

Sanitary Sewer System[1] – includes, but is not limited to, pipes, valves, pump stations, manholes, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a wastewater treatment plant headworks.

Spill[1] –Is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure

Source or Outfall – means a location where the spill source enters the receiving water.

Spill Category 1 – a spill of any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:A surface water, including a surface water body that contains no flow or volume of water; orA drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility

1 Introduction

The City of Sacramento (City) operates and maintains a separate sanitary sewer collection system under the State Water Resources Control Board (SWRCB) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR), Order No. 2022-0103-DWQ. (

Collectively, these orders set forth operational requirements for the wastewater collection system and specific monitoring and reporting requirements for sanitary sewer overflows. In addition, the City operates and maintains a combined sanitary and stormwater collection system that is regulated by separate waste discharge requirements (NPDES No. CA0079111).

This Water Quality Monitoring Plan (Monitoring Plan) addresses the roles and responsibilities, standard operating procedures, and activities necessary for compliance with the SSS WDR and MRP specific spill regulatory requirements for water quality monitoring. This Monitoring Plan is consistent with and supplemental to the City of Sacramento Department of Utilities (DOU) Sanitary Sewer System Spill Emergency Response Plan (Response Plan). This Monitoring Plan describes only the monitoring activities for required spill response or when the City determines that spill related monitoring is necessary. This Monitoring Plan is reviewed on a regular basis and amended as necessary.

Water quality monitoring is required to be conducted for spills for which 50,000 gallons or greater are spilled to surface waters to evaluate the receiving water impacts and assess potential necessary mitigation measures. The information collected as part of this monitoring effort will be used in preparation of the required Technical Report submitted to the Regional Water Quality Control Board (Regional Water Board) to assess penalties or direct mitigation measures that may be necessary as a result of spill. Complete and accurate records of all spill events collected and compiled according to the Response Plan are, therefore, critical.

Although the SSS WDR requires sampling for events only 50,000 gallons[1] or greater, these procedures can be used to sample any spill event that reaches surface waters. Spill events greater than 50,000 gallons are rare in the City of Sacramento sewer service area, but when they do occur, field personnel must be prepared to perform water quality monitoring and reporting. Additionally, if the actual volume of a spill is in question, the recommended practice is to perform the sampling and monitoring. The required information cannot be gathered as an afterthought if it is later determined that

[1] Conduct water quality sampling **within 18 hours** after initial spill notification for Category 1 spills in which 50,000 gallons or greater are spilled to surface waters. (Refer to Attachment E-1 of SSS WDR) <Fix – there's no Section D in the permit and no MRP>

https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2022/wqo_2022-0103-dwq.pdf

the spill volume was greater than originally estimated. Spills of this magnitude will always be investigated thoroughly by the Central Valley Water Board.

2 Regulatory Requirements

In accordance with the SSS WDR, , the Enrollee (i.e., the City) shall develop and implement an Water Quality Monitoring Program to assess impacts from spills to surface waters in which 50,000 gallons or greater are spilled to surface waters.

At a minimum, the water quality monitoring program shall:

1. Contain protocols for water quality monitoring.
2. Account for spill travel time in the surface waters and scenarios where monitoring may not be possible (e.g., safety, access restrictions, etc.)
3. Require water quality monitoring analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.
4. Require monitoring instruments and devices used to implement the Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.
5. Within 18 hours of the enrollee becoming aware of the spill, required water quality sampling for, at a minimum, the following constituents:
    i. Ammonia.
    ii. Appropriate Bacterial indicator(s) per the applicable Basin Plan water quality objective or Regional Board direction, which may include total and fecal coliform, enterococcus and e-coli.

3 Roles and Responsibilities

The roles and responsibilities of City staff in responding to a reported spill are described in Section I, Part 3.0 of the Sanitary Sewer Spill Emergency Response plan.
The following table contains the water quality monitoring roles and responsibilities as assigned by the City:

Table 1. Monitoring Roles and Responsibilities for Category 1 Spills

Role	Monitoring Related Responsibilities

Wastewater Superintendent or Designee	• Determine if sample collection is necessary and identify the receiving water monitoring locations. Receiving water monitoring locations should adequately characterize background conditions and the area impacted by the spill, and should account for spill travel time in the surface water. • Authorize sample collection when warranted. • Notify Environmental and Regulatory Compliance staff, consultants and/or laboratories of to arrange sampling
Event Supervisor – Wastewater Supervisor or Drainage Supervisor, identified according to on-call schedule	• Mobilize Field Crew for initial assessment. • Evaluate initial assessment information and feedback from Field Crew. • Notify Wastewater Superintendent or Designee for Category 1 spills. • Coordinate field sampling. • Complete field log sheets including photos, descriptions, and maps of the spill, discharge, and receiving water. • Prepare field summary report for use in preparation of Technical Report for spills of 50,000 gallons or greater. • Demobilize Field Crew.
Sampling staff	• Prepare mobilization field kit including field log sheets, sample collection bottles, and labels as well as other monitoring equipment and supplies. • Mobilize to spill location and perform initial assessment. • Contact Event Supervisor and discuss initial assessment. • Collect spill receiving water samples and field measurements according to required methods and protocols as well as complete

Role	Monitoring Related Responsibilities
	appropriate documentation. • Prepare chain-of-custody forms for samples and maintain custody until transferred to other Field Crews, laboratory staff, and/or consultants.
Laboratories and Consultants, identified and directed as-needed by Event Supervisor	• Provide technical support as directed by Wastewater Superintendent, which may include specialized sample collection. • Perform analysis and provide recommendations on sample collection or follow-up activities as directed by Wastewater Superintendent. • Analyze samples as requested in chain-of-custody forms. • Conduct calibration and maintenance on field measurement sensors prior to and after sample collection.

Section II.10 of the Response Plan provides a Notification Summary Checklist that also includes names and telephone numbers of key responders.

4 Standard Operating Procedures for Site Assessment and Sample Collection

This Monitoring Plan SOP is intended to cover details of how to perform the water quality monitoring and reporting for spills greater than 50,000 gallons. The Event Supervisor should consider sample collection if the spill volume cannot be accurately estimated or if an immediate downstream receiving water is known to be sensitive or impacted significantly by the spill. The information covered herein includes safety, equipment, sampling procedures, chain-of-custody, and record keeping.

4.1 SAFETY

Safety of staff engaged in any fieldwork activity (e.g., in transit, walking or hiking, and any field activities while at the sample site) is always of primary importance. It is likely that a large spill event occurred as the result of severe wet weather conditions or equipment failure. Additionally, spill and receiving water locations are not always easily assessable even during optimum weather conditions. When working near a water body, always take time to assess your surroundings and ensure that there is adequate egress to a known safe location. At least two staff are required during sample collection and life vests should always be worn when working near and over swift moving surface waters. All staff should use proper personnel protective gear as appropriate for the incident (e.g., protective clothing, life vests, gloves, goggles, etc.) The sample collection team should clearly communicate the approach to the sampling sites and the tasks that will be performed by each member of the team. Fieldwork should be postponed if there is indication that engagement in the field activity could cause bodily harm.

If the sampling staff encounters access restrictions or unsafe conditions that prevents its compliance with spill response requirements or monitoring requirements in the SSS WDR Order, document access restrictions and/or safety hazards in the technical report.

4.2 SAMPLING LOCATIONS

The goal of sample collection is to assess the water quality impacts of the spill on the receiving water. Ideally, samples will be collected that are best representative of the spill source at the point of entry to the receiving water, the background (upstream) receiving water, and the downstream receiving water.

Key considerations to determine precise sample collection location are as follows:

- Is the spill still flowing to the receiving water? If the spill has not been controlled, the source, upstream (background), and impacted receiving water locations can be sampled directly.
- Did the spill reach a receiving water, but is now contained? If the spill source is still present, it can be sampled directly. If the spill has been contained in a wet well or other storage area, it will be necessary to estimate where impacts to the receiving water are based on a “plug flow reactor” model (i.e., how far would the spill pulse have travelled). In this way, the time since the spill reached the receiving water

multiplied by the average receiving water velocity can be used to determine the approximate downstream location or impact from the spill. If the time is longer, the calculations will be more complex to incorporate the distance downstream and hydrologic features of the watershed or drainage system. Estimating the velocity of the receiving water can be performed with a stream velocity meter or by measuring the travel time of a neutrally buoyant object over a measured distance in the stream. Additional details for estimating spill travel time are included below in Section 4.2.1.

- Selected site locations should adequately characterize conditions for the site's purpose (e.g., source, background receiving water, and spill impacted receiving water).
- Samples should be collected at mid-stream and mid-depth, when feasible. Stream eddies or non-representative hydraulic features (e.g., side channels, inlets, confluences, etc.) should be avoided.
- Selected site locations should not be impacted by other localized influences (e.g., other outfalls, non-point source runoff from dairies or cultivated agriculture, etc.).

A description of each type of location is provided below:

Point of Discharge– A point in the receiving water where sewage initially enters the receiving water.

Downstream of Point of Discharge– A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

Upstream of Point of Discharge– A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.

Before leaving the sampling location, verify that the sample collection field log sheets are complete, including a sketch of the sampling locations that identifies the distance of the upstream and downstream sample locations relative to the source entry point.

4.2.1 Spill Travel Time

Best professional judgment shall be used to determine the upstream and downstream distances based on receiving water flow, accessibility to upstream/ downstream waterbody banks, and size of visible sewage plume.

An estimation of spill travel time within the open surface waters can be determined using the methods presented in this section depending on the accessibility and safety of the monitoring site. Spill travel time can be used to estimate the location in the receiving water of spill-influenced flow to ensure that the sample collected is representing where the spill material is fully mixed with the receiving water.

4.2.1.1 Stream Velocity Meter

The preferred method of spill travel time calculation includes the use of a stream velocity meter.

However, since the sampling crew will be required to wade and cross the surface water body, extra safety precautions must be addressed and practiced. In cases where it is unsafe, variance in the protocols to ensure safety should be documented. Guidance for this calculation with this method is as follows:

1. Ensure that the receiving water body is flowing at a safe rate and its width can be crossed by wading.
2. One person will be responsible for using the stream velocity meter while another will stand on the shore and record the measurements.
3. The field crew member with the stream velocity meter will enter the surface water at the shore and begin to take a velocity measurement, roughly at a distance six inches below the surface. The individual will wait for the reading to stabilize before reporting the value to the recorder.
4. The field crew member will then move the stream velocity meter a distance of two feet further into the surface water body and make another measurement. This method will continue until velocity readings corresponding to the entire width of the receiving water body have been obtained.
5. The field crew member will not cross into any unsafe portions of the receiving water body and will note on the field log sheets if the measurements are only for a portion of the channel.

4.2.1.2 Visual Velocity Estimation

If the receiving water body is unsafe to enter or a stream velocity meter is unavailable, the velocity can be measured by observing floating debris.

1. The Field Crew will stand on the edge of the channel, 30 feet apart. This distance is either measured with a tape or approximated by pacing the distance (1 pace ≈3-3.5 feet).
2. The field crew member standing upstream will indicate when a large piece of debris passes their point. At this time, the field crew member standing downstream will start timing.
3. When the same piece of debris passes the downstream field crew member, the individual will stop timing. The velocity (in units of ft/sec) is calculated by dividing 30 feet by the number of seconds it took for the debris to travel that given length.

If there isn't any large debris floating in the surface water, the upstream field crew member can use a nearby stick or other buoyant object to obtain the estimate.

4.3 REQUIRED WATER QUALITY ANALYSIS MONITORING

Collect one water sample, each day of the duration of the spill, at:

- The DCS-001 location as described in above if sewage discharges to a surface water via a drainage conveyance system; and/or
- Each of the three receiving water sampling locations above

If the receiving water has no flow during the duration of the spill, document in the technical report “No Sampling Due To No Flow” for its receiving water sampling locations.

Spill monitoring must be representative of the monitored activity and sample analysis must be conducted according to sufficiently sensitive test methods approved under 40 Code of Federal Regulations Part 136 for the sample analysis of pollutants. A method is sufficiently sensitive when the minimum level of the analytical method approved under 40 Code of Federal Regulations Part 136 is at or below the receiving water pollutant criteria. The analysis of water quality samples required must be performed by a laboratory that is accredited with the Environmental Laboratory Accreditation Program (ELAP).

All collected receiving water samples shall be analyzed for the constituent list in Table 2.

Table 1: Analytical Methods

Test Parameter	Analytical Method	Holding Time
Total Coliform Bacteria	MPN	8 Hours
Fecal Coliform Bacterial	MPN	8 Hours
E-Coli	MPN	8 Hours
Enterococcus	MPN	8 Hours
Ammonia		28 Days

There are two types of samples that will need to be taken: 1) samples that require laboratory analysis and 2) sample testing that can be performed in the field as shown in Table 1.

4.4 REQUIRED WATER QUALITY EQUIPMENT AND SUPPLIES

Table 2 below shows the bottle and analytical requirements for the spill response and Table 3 details the required equipment list.

Table 2. Field Parameter and Analytical Sample Bottles, Preservation, and Holding Times

Test Parameter	Minimum Sample Size	Required Preservative[1]	No. of Bottles Required[2]
Total Fecal Coliform Bacteria	100 ml plastic bottle (sterile)	$Na_2S_2O_3$	3
Fecal Coliform Bacteria	100 ml plastic bottle (Sterile)	$Na_2S_2O_3$	3
E-coli	100 ml plastic bottle (sterile)	$Na_2S_2O_3$	3
Enterococcus	100 ml plastic bottle (sterile)	$Na_2S_2O_3$	3

[1] All samples are to be kept in an ice chest at a temperature of ≤6°C until transferred to the custody of the lab.

[2] For each test parameter, bring one spare sample bottle in the event of contamination while taking a sample.

[3] For each sample location, take a field sample in a clean 500 ml or larger plastic or glass sample bottle for collecting DO, EC, pH, and temperature measurements.

Table 3. Required Equipment List

Item #	Description	Quantity	Purpose	Comments
1	100 ml plastic sample bottle (sterile) w/ $Na_2S_2O_3$ preservative	14	Sample collection of Fecal Coliform,E-coli, and Enterococcus	2 bottles are spares
4	1 liter wide-mouth plastic sample bottle	4	Sample collection	1 bottle is a spare
5	Deionized water	1 gallon	Equipment cleaning	
6	Sample pole	1	Enable sample collection	See instructions on how to build
Item #	**Description**	**Quantity**	**Purpose**	**Comments**
			from shore	a sample pole.
7	Plastic funnel	4	For transfer of sample to sample bottles. Do not use for bacteriological samples	Use fresh/clean funnel for each sample location. One funnel is a spare
8	Nitrile/Latex gloves	12 pairs (minimum)	Protective gear	Assorted sizes
9	Safety glasses	2 pairs	Protective gear	
10	Headlamp	2	Safety gear	For night time sampling
11	Chain-of-custody form	3	Event documentation	2 are spares

12	Sample bottle label	15	Label all sample bottles for lab analysis	5 are spares
13	Pen	2	To fill out labels and chain of-custody forms	
12	Field Test Meter	1	Collect Dissolved Oxygen, pH, Temperature, and Electrical Conductivity measurements	Meter Type TBD
13	Ice chest	1	To hold samples	
14	Ice packs	4	To preserve samples ≤6ºC	
15	Personal flotation device (PFD)	2-4	Safety equipment for each field crew member	
16	Camera	1	Photo documentation	
17	Global positioning system (GPS) device	1	To adequately locate spill and document sample collection locations	Optional, may be estimated from maps and schematics prepared on-site
18	Stream velocity meter	1	To account for spill travel time when identifying the sample location of an spill that entered a waterway	Optional
19	50-foot measuring tape	1	To measure a 30-foot distance between staff when conducting a visual velocity estimation	Optional

4.5 EQUIPMENT CALIBRATION

Field testing equipment calibration and maintenance logs should be included as part of the Technical Report. It is recommended that field measurement equipment (EC, temperature, DO, and pH) be calibrated prior to and following the sample collection event. If there is insufficient time to calibrate the equipment just prior to the sample collection, the most recent calibration logs should be included with the Technical Report.

4.6 SAMPLE COLLECTION

After determining the best available (i.e., targeted) sampling locations as discussed in Section 4.2, the Field Crew or consultant prepares the chain-of-custody and sample bottle labels for each bottle that will be submitted for laboratory analysis. The Field Crew or consultant should write the date and time of sample collection on the labels or chain-of-custody *after* the sample has been collected. Samples will be taken in the following order: Upstream of Point of Discharge, Downstream of Point of Discharge, and the spill Point of Discharge. (from a source entry point into the separate stormwater sewer system or receiving water). The purpose of this sequence is to sample from the least contaminated source first and finish with the most contaminated site. Sample collection conducted following this sequence will reduce the potential for contamination of the samples and field test equipment. Sample collection in mid-stream (i.e., approximately halfway across the receiving water) in the main channel of flow is generally preferable to characterize the whole stream. However, in cases where there is a visible plume from the spill, sample collection in the mid-stream of the plume may be indicated. For safety reasons, mid-stream may not be possible, and samples should be collected as far across the stream as possible away from “shore effects”.

Depending on the safety and environmental conditions of the sample location, sample bottles may be either directly filled by submerging the sample bottle or using a grab pole with a collection bottle connected that is used to transfer the collected sample into a sample bottle. Sample bottles without preservative can be directly submerged. The most common sample collection method will be the technique with the use of a grab pole and container.

Guidance to collect samples with this method is as follows:

1. Place the one liter wide-mouth sample bottle in the clamp of the sample pole and remove the lid.
2. Extend the pole into position to take the sample with the open end of the sample bottle directed downstream and submerge the bottle 6 to 12 inches below the surface of the water. This will reduce the potential of capturing surface contaminant in the sample bottle.
3. Rotate the sample pole handle and allow the bottle to fill.
4. Remove the sample bottle from the sample pole and fill sample bottles for this location. Methods for filling a sample collection bottle by direct submersion to are as follows:

1. Wade to approximately the area of the water body with the highest flow rate and face upstream. This will most likely be midstream but can be in a different portion of the stream, depending on the hydrology.

2. Submerge the sample bottle with its cap on to approximately mid-depth at a location of significant flow (avoid stagnant water). Hold the bottle upright under the surface while it is still capped.

3. Open the lid carefully just a little to let water run in. Fill the bottle and screw the cap tightly while the bottle is still underneath the surface.

4. Remove bottle from stream and place on ice.

Once the sample has been collected by either method, proceed as follows:

1. Label samples and record the date and time of collection on the field log sheet. The information recorded on the bottle label should include the date, time, sample location, names of field staff, and the appropriate parameter/preservative.
2. Place sample bottle in cooler and chill to ≤6˚C.
3. Repeat a second collection for this location. Use the sample to collect test parameters with the field test meter. Record the measurements from the field test meter.
4. Repeat the steps above for the remaining sample locations.
5. Complete the chain-of-custody forms and deliver the samples to the designated lab for analysis.
6. Clean equipment and restock supplies for the next event.

Field conditions may require modifications to sample collection if the depth of flow is too shallow to submerge the sample bottle. In this case, multiple bottles may be used to collect sufficient volume and samples should be collected in a manner to only collect flowing material (i.e., no soil or settled sediment) to best characterize the receiving water and source location. If a pole is not needed, samples can be collected directly. Crews should be positioned downstream of the bottle during sample collection and use clean nitrile or latex gloves when handling sample bottles.

4.7 EVENT DOCUMENTATION AND RECORDKEEPING

All field work documentation should be compiled and submitted to the Event Supervisor. The field work documentation should include, but is not limited to, the following items:

1. Spill Water Quality Monitoring Plan Checklist [see Appendix A]
2. Field log sheets and field measurements [see template in Appendix B]
3. Equipment and calibration log sheets
4. Photographic evidence
5. Spill and Receiving Water Maps
6. Spill volume estimate calculations
7. Chain–of-custody forms [see example in Appendix C]

5 Sanitary Sewer Overflow Technical Report

For spills to surface waters greater than 50,000 gallons, a Spill Technical Report is required and must be submitted to the CIWQS Online Database within 45 calendar days of termination of the spill. This Monitoring Plan specifies protocols for water quality monitoring only. The results from the sample collection are used to develop part of the

Technical Report as described in the Response Plan. Initial review of field monitoring data and conditions may also require follow-up monitoring as described below.

5.1 FOLLOW-UP MONITORING

After the initial required monitoring is completed, follow-up monitoring may be indicated under the following circumstances:

- If the spill source has not been contained and continues to reach the receiving water as a Category 1 spill, daily monitoring should be performed until the spill is contained.
- If a now-contained spill caused an ongoing downstream receiving water nuisance or beneficial use impact (e.g., odor, oil accumulation, wildlife mortality, etc.), daily monitoring should be performed until the impact is remedied. Additional sample collection may be necessary to confirm the cause of the impact (e.g., chemistry for the suspected toxicant).
- If the geographic scope or "plug-flow" impacts of the spill are significant, the impacts should be tracked until the effects dissipate downstream.

5.2 DATA QUALITY EVALUATION

After the laboratory analyses or field assessment have been performed, the results should be reviewed for quality control and quality assurance and then finalized with appropriate data qualifiers. Quality Assurance and Quality Control (QA/QC) is a necessary evaluation that focuses on providing confidence in the data by ensuring that it is of the type and quality needed and expected for the project. The necessary evaluations may include a review of the following:

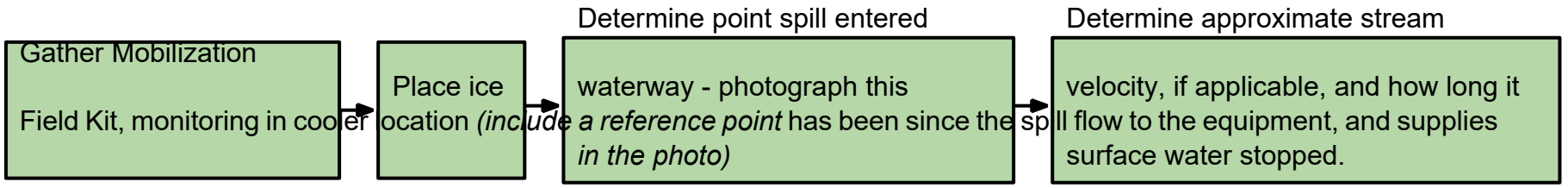
- Initial Data Assessment – holding time, reporting limit, completeness, out-of-range results, and documentation errors
- Lab initiated quality assurance review – method blanks, laboratory duplicates, and laboratory control spikes

5.3 WATER QUALITY MONITORING TECHNICAL REPORT

The Wastewater Superintendent will work with the Environmental & Regulatory Compliance Section of DOU, consultants, and the Event Supervisor to prepare the water quality monitoring portion of the Technical Report. This report should include the following components:

- Description of water quality monitoring activities, including chronology of decisions and actions, sample collection procedures, and analytical results.
- All field log sheets and equipment calibration.
- All relevant photos of sampling locations and other identified significant issues or sources of impacts.
- Comparison of analytical results in the receiving water to relevant water quality objectives and exposure periods.
- Detailed location map showing all monitoring locations.

Appendix A. Field Checklist



Samples will need to be taken at the locations in the following order: Upstream, Downstream, and Source/Outfall.

- **Upstream**: this is a sampling location in the receiving water upstream of the source entry point location. The upstream sample should be taken 100 feet upstream of the source entry point.
- **Downstream:** this is a sample location in the receiving water collected far enough downstream of the source entry point to be representative of adequate mixing.
- **Source or Outfall**: the source location is in the immediate vicinity where the spill enters the receiving water. This point will actually be downstream of the actual spill entry point for spills that have stopped entering the surface water to be sampled.

Sample Collection *(at least at the three locations detailed above)*

Collect surface water samples:
Prior to sample collection, assess safety and use proper protective gear.

- Collect all samples against the direction of water flow standing downstream, if possible, or to best characterize the cross section of flow
- Collect samples mid-stream and mid-depth
- Do not rinse sample bottles that contain preservative
- Label sample bottles with date, time, location, field staff, and parameter/preservative
- Place sample bottles in cooler with ice

Collect field measurements → Complete field log sheets → Take photos

After sample collection:

- Check that all sample bottles are properly labeled
- Complete chain-of-custody forms
- Deliver samples to designated laboratories
- Obtain the most recent equipment calibration/maintenance logs
- Clean equipment and restock supplies

10/9/2014

Spill Water Quality Monitoring Plan Checklist - Field Crew

GATHER MOBILIZATION FIELD KIT, MONITORING EQUIPMENT, AND SUPPLIES			
☐ Sample bottles	☐ Nitrile/Latex gloves	☐ Sample bottle labels	☐ Camera
☐ Deionized water	☐ Safety glasses	☐ Pen	☐ GPS device
☐ Sample pole	☐ Headlamps/flashlights	☐ Field Test Meter	☐ Zip-ties/rope
☐ Plastic funnel	☐ Ice /ice packs	☐ Ice chest	☐ Duct tape
☐ Stream velocity ter m	☐ 50-foot measuring pe ta	☐ Chain-of-custody rms fo	☐ Personal flotation vices de
☐ Utility knife	☐ Garbage bags	☐ Field log sheets	☐ First-aid kit

PERFORM INITIAL ASSESSMENT		
☐ Take a photo of the spill		
☐ Complete the “Spill Description” section of the Field Log Sheet		
☐ Contact the Event Supervisor and discuss the initial assessment		

SAMPLE COLLECTION	
☐ Calibrate the equipment prior to sample collection	

US-001 - Collect samples at the upstream receiving water location	
☐ Take a photo of the surface water (location of sample collection)	
☐ Collect surface water samples	☐ Place samples on ice in cooler

☐	Take field measurements
☐	Complete the “Upstream (US-001)” section of the Field Log Sheet
DS-001 - Collect samples at the downstream receiving water location	
☐	Take a photo of the surface water (location of sample collection)
☐	Collect surface water samples ☐ Place samples on ice in cooler
☐	Take field measurements
☐	Complete the “Downstream (DS-001)” section of the Field Log Sheet
OF-001 - Collect samples at the source entry point receiving water location	
☐	Take a photo of the surface water (location of sample collection)
☐	Collect surface water samples ☐ Place samples on ice in cooler
☐	Take field measurements
☐	Complete the “Source/Outfall (OF-001)” section of the Field Log Sheet
FINISH	
Check that all sample bottles are labeled with:	
☐	Date
☐	Time
☐	Sample Location (description as either Upstream, Downstream, or Source/Outfall)

	Names of Field Crew members
	Parameter/Preservative
	Complete chain-of-custody forms
	Deliver samples to designated consultants and/or laboratories
	If there was insufficient time to calibrate the equipment prior to sample collection, obtain the most cent equipment calibration/maintenance logs re
	Clean equipment and restock supplies in preparation for next event

Appendix B. Field Log Sheet

Spill WATER QUALITY MONITORING PLAN FIELD LOG SHEET – SURFACE WATER MONITORING SITES			
Date: Weather (sunny, overcast, raining, etc.):		Spill Address:	
Description of SSO destination (i.e. surface water: stream, pond, river, etc.):		If the spill was not actively entering the surface water during sampling: A. Surface Water Velocity : _____	
Was the spill actively entering the surface water during sampling? ☐ Yes ☐ No If no, complete A-D in the box to the right →		B. How long has the SSO **NOT** been entering the surface water? _____minutes X 60 sec/min = _____ seconds C. How far downstream did you travel to collect the SOURCE sample? (A X B = feet): _____feet D. Explain why you travelled a different distance, if you did, to collect the source sample:	
Upstream (US-001)			
Arrival time:	Departure time:	Photo taken? ☐ Yes ☐ No	
Location (address):		GPS Coordinates - Latitude: Longitude:	
Sample collection location: ☐ Mid-Channel, Mid-Depth ☐ Bank, Mid-Depth			
Sample collection time -			
Fecal Coliform:	Ammonia:	E.coli:	BOD:
Field Measurements -			
DO (mg/L):	pH:	EC (µS/cm):	Temp, Water/Air (°C): /
Other observations (water color/turbidity, floating material, odor, etc.):			
Downstream (DS-001)			
Arrival time:	Departure time:	Photo taken? ☐ Yes ☐ No	
Location (address):		GPS Coordinates - Latitude: Longitude:	
Sample collection location: ☐ Mid-Channel, Mid-Depth ☐ Bank, Mid-Depth			
Sample collection time -			
Fecal Coliform:	Ammonia:	E.coli:	BOD:

Field Measurements -			
DO (mg/L):	pH:	EC (µS/cm):	Temp, Water/Air (°C): /
Other observations (water color/turbidity, floating material, odor, etc.):			
Source/Outfall (OF-001)			
Arrival time:	Departure time:	Photo taken? ☐ Yes ☐ No	
Location (address):		GPS Coordinates - Latitude:	Longitude:
Sample collection location: ☐ Mid-Channel, Mid-Depth ☐ Bank, Mid-Depth			
Sample collection time -			
Fecal Coliform:	Ammonia:	E.coli:	BOD:
Field Measurements -			
DO (mg/L):	pH:	EC (µS/cm):	Temp, Water/Air (°C): /
Other observations (water color/turbidity, floating material, odor, etc.):			

Spill WATER QUALITY MONITORING PLAN FIELD LOG SHEET – ESTIMATING SURFACE WATER VELOCITY

Date:	Spill Address:
Surface Water Body:	
Location of Estimation/Measurements:	

Visual Velocity Estimation

Distance (ft):
Time (sec):
Estimated Velocity (ft/sec)= Distance/Time =

Velocity Probe Measurements

Distance to Bank (ft)	Depth (ft)	Velocity (ft/sec)

Appendix C. Sample Chain of Custody Form

Caltest ANALYTICAL LABORATORY
ENVIRONMENTAL ANALYSES

1885 N. KELLY ROAD NAPA, CA 94558 (707) 258-4000 FAX (707) 226-1001

SAMPLE CHAIN OF CUSTODY

PROJECT NAME / PROJECT NUMBER: Sacramento Department of Utilities SSO Water Quality Monitoring

P.O. NUMBER:

LAB ORDER #:

CLIENT: Larry Walker Associates

REPORT ATTN: Brian Laurenson

MAILING ADDRESS: 707 4th St, Suite 200, Davis

STATE: CA ZIP: 95616

BILLING ADDRESS: 707 4th St, Suite 200, Davis

ATTN: Brian Laurenson

PHONE NUMBER: 530 753 6400

FAX PHONE NUMBER: 530 753 7030

SAMPLER (PRINT & SIGN NAME): Jenny Bayley / Jay Bayley

TURN-AROUND TIME: [✓] STANDARD [ ] RUSH

DUE DATE:

CALTEST LAB #	DATE SAMPLED	TIME SAMPLED	SAMPLE MATRIX*	CONTAINER TYPE/ AMOUNT**	PRESERVATIVE	SAMPLE IDENTIFICATION /SITE {Should match bottle labels}	CLIENT LAB #	COMP. or GRAB	Total Ammonia as N	Biochemical Oxygen Demand (BOD5)	Fecal Coliform	E. coli							REMARKS
	12/29/14	7:10	AQ	PT	H2SO4 / <6C	US-001		G	X										
	12/29/14	7:10	AQ	PT	None / <6C	US-001		G		X									
	12/29/14	7:10	AQ	B4	Na2S2O3 / <6C	US-001		G			X								*** 8 hour holding time!
	12/29/14	7:10	AQ	B4	Na2S2O3 / <6C	US-001		G				X							
	12/29/14	8:40	AQ	PT	H2SO4 / <6C	DS-001		G	X										
	12/29/14	8:40	AQ	PT	None / <6C	DS-001		G		X									
	12/29/14	8:40	AQ	B4	Na2S2O3 / <6C	DS-001		G			X								*** 8 hour holding time!
	12/29/14	8:40	AQ	B4	Na2S2O3 / <6C	DS-001		G				X							

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	RECEIVED BY
Jay Bayley	12/29/14 14:15	Cory Haury			

FOR LAB USE ONLY

Samples: WC ____ MICRO ____ BIO ____ AA ____ SV ____ VOA ____ pH? Y/N TEMP: SEALE Y/N INTACT: Y/N

BD: BIO ____ WC ____ AA ____

CC: AA ____ SV ____ VOA ____

SIL: HP ____ PT ____ QT ____ VOA ____

W/HNO_3 ____ H_2SO_4 ____ NaOH ____

PIL: HNO_3 ____ H_2SO_4 ____ NaOH ____ HCL ____

COMMENTS:

Please CC Report and EDD to:

Roxanne Dilley (Rdilley@cityofsacramento.org)

R ____ PR ____ M ____ F ____

*MATRIX: AQ = Aqueous Nondrinking Water, Digested Metals; FE = Low R.L.s, Aqueous Nondrinking Water, Digested Metals; DW = Drinking Water; SL = Soil Sludge, Solid ; FP = Free Product

**CONTAINER TYPES: AL = Amber Liter; AHL = 500 ml Amber; PT = Pint (Plastic); QT = Quart (Plastic); HG = Half Gallon (Plastic); SJ = Soil Jar; B4 = 4oz. BACT; BT = Brass Tube; VOA = 40mL VOA; OTC - Other Type Container

WHITE - LABORATORY YELLOW - CLIENT COPY TO ACCOMPANY FINAL REPORT PINK - CLIENT COPY AS RECEIPT

Caltest ANALYTICAL LABORATORY
ENVIRONMENTAL ANALYSES

1885 N. KELLY ROAD NAPA, CA 94558 (707) 258-4000 FAX (707) 226-1001

SAMPLE CHAIN OF CUSTODY

PROJECT NAME / PROJECT NUMBER: Sacramento Department of Utilities SSO Water Quality Monitoring

P.O. NUMBER:

LAB ORDER #:

CLIENT: Larry Walker Associates

REPORT ATTN: Brian Laurenson

MAILING ADDRESS: 707 4th St, Suite 200, Davis

STATE: CA ZIP: 95616

BILLING ADDRESS: 707 4th St, Suite 200, Davis

ATTN: Brian Laurenson

PHONE NUMBER: 530 753 6400

FAX PHONE NUMBER: 530 753 7030

SAMPLER (PRINT & SIGN NAME): Jenny Bayley / Jay Bayley

TURN-AROUND TIME: [✓] STANDARD [ ] RUSH

DUE DATE:

CALTEST LAB #	DATE SAMPLED	TIME SAMPLED	SAMPLE MATRIX*	CONTAINER TYPE/ AMOUNT**	PRESERVATIVE	SAMPLE IDENTIFICATION /SITE {Should match bottle labels}	CLIENT LAB #	COMP. or GRAB	Total Ammonia as N	Biochemical Oxygen Demand (BOD5)	Fecal Coliform	E. coli							REMARKS
	12/29/14	9:30	AQ	PT	H2SO4 / <6C	OF-001		G	X										
	12/29/14	9:30	AQ	PT	None / <6C	OF-001		G		X									
	12/29/14	9:30	AQ	B4	Na2S2O3 / <6C	OF-001		G			X								*** 8 hour holding time!
	12/29/14	9:30	AQ	B4	Na2S2O3 / <6C	OF-001		G				X							

WHITE - LABORATORY YELLOW - CLIENT COPY TO ACCOMPANY FINAL REPORT PINK - CLIENT COPY AS RECEIPT

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	RECEIVED BY
Jay Bayley	12/29/14 / 14:15	Cindy Hung		/	
	/			/	

FOR LAB USE ONLY

Samples: WC ____ MICRO ____ BIO ____ AA ____ SV ____ VOA ____ pH? Y/N TEMP: SEALE Y/N INTACT: Y/N

BD: BIO ____ WC ____ AA ____

CC: AA ____ SV ____ VOA ____

SIL: HP ____ PT ____ QT ____ VOA ____

W/HNO_3 ____ H_2SO_4 ____ NaOH ____

PIL: HNO_3 ____ H_2SO_4 ____ NaOH ____ HCL ____

COMMENTS:

Please CC Report and EDD to:

Roxanne Dilley (Rdilley@cityofsacramento.org)

R ____ PR ____ M ____ F ____

***MATRIX:** AQ = Aqueous Nondrinking Water, Digested Metals; FE = Low R.L.s, Aqueous Nondrinking Water, Digested Metals; DW = Drinking Water; SL = Soil Sludge, Solid ; FP = Free Product

****CONTAINER TYPES:** AL = Amber Liter; AHL = 500 ml Amber; PT = Pint (Plastic); QT = Quart (Plastic); HG = Half Gallon (Plastic); SJ = Soil Jar; B4 = 4oz. BACT; BT = Brass Tube; VOA = 40mL VOA; OTC - Other Type Container

Appendix D. Data Quality Evaluation

Appendix F –
SacSewer Agreement C2021-0457

SACRAMENTO
Office of the City Clerk

CONTRACT ROUTING SHEET

Contract Cover/Routing Form: Must Accompany ALL Contracts; however, it is NOT part of the contract.

General Information (Required)

Original Contract # (supplements only): _____ Supplement/Addendum #: _____

Assessor's Parcel Number(s): _____

Contract Effective Date: _____ Contract Expiration Date (if applicable): _____

$ Amount (Not to Exceed): _____ Adjusted $ Amount (+/-): _____

Other Party: Sacramento Regional County Sanitation District, City of Folsom, City of Sacramento, County of Sacramento, Sacramento Area Sewer District, and City of West Sacramento

Project Title: Amended and Restated Sacramento Regional Wastewater Management Program Master Interagency Agreement

Project #: _____ Bid/RFQ/RFP #: _____

City Council Approval: YES if YES, Council File ID#: 2021-00413

Contract Processing Contacts

Department: Utilities Project Manager: Ryan Pham

Contract Coordinator: Rebecca Avitia Email: ravitia@cityofsacramento.org

Department Review and Routing

Accounting: _____
(Signature) (Date)

Supervisor: _____
(Signature) (Date)

Division Manager: Chuong (Ryan) Pham — Chuong (Ryan) Pham (Apr 27, 2021 15:20 PDT) — Apr 27, 2021

Other: William Busath — William Busath (Apr 28, 2021 19:32 PDT) — Apr 28, 2021
Department Director (Signature) (Date)

Special Instruction/Comments (i.e. recording requested, other agency signatures required, etc.)

☐ **Recording Requested** ☑ **Other Party Signature Required**

----------FOR CLERK & IT DEPARTMENTS ONLY – DO NOT WRITE BELOW THIS LINE----------

2021-0457

DCS Contract No. 50000210
City of West Sacramento Contract No. MCO21-023

AMENDED AND RESTATED

SACRAMENTO REGIONAL WASTEWATER

MANAGEMENT PROGRAM

MASTER INTERAGENCY AGREEMENT

April 14, 2021

AMENDED AND RESTATED

SACRAMENTO REGIONAL WASTEWATER

MANAGEMENT PROGRAM

MASTER INTERAGENCY AGREEMENT

THIS AMENDED AND RESTATED AGREEMENT ("Agreement") is made and entered into on_____by and among the following public entities:

(a) SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT, a political subdivision of the State of California

(b) CITY OF FOLSOM, a municipal corporation

(c) CITY OF SACRAMENTO, a municipal corporation

(d) COUNTY OF SACRAMENTO, a political subdivision of the State of California

(e) SACRAMENTO AREA SEWER DISTRICT, a political subdivision of the State of California

(f) CITY OF WEST SACRAMENTO, a municipal corporation

RECITALS

A. Each of the parties to this Agreement is a local governmental entity functioning within the Sacramento Metropolitan Area.

B. Each of the Contributing Agencies that are parties to this Agreement presently maintains and operates facilities for the collection and conveyance of wastewater to Sacramento Regional County Sanitation facilities.

C. Each of the parties to this Agreement through official acts of its legislative body has recognized the need for coordinated regional planning of wastewater management within the Sacramento Metropolitan Area and has either been added as a party to this Agreement and/or joined with or participated in the formation of the Sacramento Regional County Sanitation District, a county sanitation district formed under provisions of the Health and Safety Code to provide regional wastewater services within the Sacramento Metropolitan Area (hereinafter referred to as Regional San).

D. With the exception of the City of West Sacramento, the parties hereto have previously entered into a Sacramento Regional Wastewater Management Program Master Interagency Agreement dated November 1, 1974, and amended twice on April 28, 1981, and once each on June 26, 1983, January 28, 1986, February 28, 1989, April 13, 1993, and December 11, 1996 (collectively referred to as the 1974 MIA). With the execution of this amended and restated agreement, the City of West Sacramento will be added as a Contributing Agency and the previously entered Wastewater Services agreement between the City of West Sacramento and Regional San, dated March 31, 2004, will be terminated. This Agreement amends and supersedes the 1974 MIA, continues in effect, as herein amended, all of the continuing operative provisions thereof, and deletes from the current text those provisions of the 1974 MIA, which have been fully executed or are no longer operative

AGREEMENTS

The parties agree as follows:

Section 1. Definitions.

Unless the context otherwise requires, the terms defined in this Section 1 shall for all purposes of this Agreement have the meanings hereinafter specified:

AVOIDED COST: The estimated cost per account Regional San would have incurred to collect sewer rates in the portions of Regional San service area, which pursuant to a separate billing and collection agreement are collected by another billing agency/contributing agency.

COLLECTOR SEWER: Any publicly operated sanitary sewer including pumping and in-line treatment facilities appurtenant thereto, whose primary purpose is the collection of wastewaters within a Contributing Agency.

COMBINED FLOW: Storm drainage, sanitary sewage, or industrial waste intentionally combined in a single conduit for purposes of collection, treatment, or discharge.

COMMERCIAL USER: Any nonresidential user that the District Engineer determines does not meet the definition of an industrial user as set forth in the Regional San's Consolidated Ordinance.

CONSOLIDATED ORDINANCE: An ordinance, originally adopted by Regional Sanon February 10, 2010 as Ordinance #SRSD-0109, and as subsequently amended, regulating the use of the Regional System and providing the authority to set and collect sewer rates and sewer impact fees.

CONTRACTING AGENCY: Any public agency (including an agency of the state or federal government) that is not a party to this Agreement and has a separate contract that allows the contribution of wastewater from its system to the Regional System for conveyance, treatment, and discharge. Contracting agencies need not be annexed to Regional San or be a Contributing Agency.

CONTRIBUTING AGENCY: Any public entity other than the County of Sacramento that is a party to this Agreement and contributes wastewater from its system to the Regional System.

DISTRICT ENGINEER: The chief executive of the Sacramento Regional County Sanitation District and the Sacramento Area Sewer District.

INDUSTRIAL USER: Any person who discharges or causes a discharge of industrial wastewater directly or indirectly to the Regional System, as categorized in the Consolidated Ordinance. This term specifically includes any categorical users connected to the Regional System, whether or not they discharge process wastewater.

INDUSTRIAL WASTEWATER: Any water-carried wastes and wastewaters, excluding domestic wastewater, derived from any producing, manufacturing, processing, institutional, agricultural, or other operation.

INFILTRATION: Any water entering a collector, trunk, or interceptor sewer or service connections thereto from the ground through such means as, but not limited to, defective pipes, pipe joints, connections, or manhole walls.

INFLOW: Any water discharged into collector, trunk, or interceptor sewer or service connections thereto from such sources as, but not limited to roof leaders, cellars, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, manhole covers, cross-connections from storm sewers and combined sewers, catchbasins, storm waters, surface runoff, street wash waters or drainage.

INTERCEPTOR SEWER: Any sewer and in-line treatment facilities appurtenant thereto including pumping facilities as shown and described on Exhibit A, which is hereby made a part of this Agreement, and any future sanitary sewers constructed after the date of this Agreement, which meet either of the following criteria:

(a) Any sanitary sewer designed to carry a peak wet weather flow of 10 MGD or greater from new development; or,

(b) Any sanitary sewer that has its upstream and downstream ends are adjacent and connected to an existing Interceptor Sewer shown in Exhibit A of this Agreement.

LOCAL SERVICES: All services within a Contributing Agency that are necessary for the collection, conveyance, treatment, and transfer to the Regional System of wastewater originating within that Agency that are not to be performed by Regional San pursuant to this Agreement.

LOCAL SERVICE AREA: That area in which a Contributing Agency has the exclusive authority to perform local services.

MGD: Million gallons per day.

MAINTENANCE AND OPERATION COSTS: The reasonable and necessary costs of

maintaining and operating a system calculated on sound accounting principles, including (among other things) the reasonable expenses of management, operation, repair and other expenses necessary to maintain and preserve the system in good repair and working order, and reasonable amounts for administration overhead, insurance, taxes (if any) and other similar costs.

NON-INDUSTRIAL USER: Any person discharging wastewater to a system that is not classified as an Industrial User in the Consolidated Ordinance.

OPERATING AGREEMENTS: All agreements between Regional San and any Contributing Agency for the operation and maintenance of wastewater facilities.

OUTFALL SEWER: Any sewer the primary purpose of which is to transfer wastewater from a treatment plant or its effluent pumping station to a point of discharge. The term includes any structure or facilities located at the point of discharge for discharge or diffusion of the wastewater.

REGIONAL SAN: The Sacramento Regional County Sanitation District.

REGIONAL SAN SERVICES: All services required for the collection, conveyance, treatment, and discharge of wastewater that are to be performed by Regional San pursuant to this Agreement.

REGIONAL SYSTEM: All facilities for the conveyance, treatment, and discharge of wastewater that are owned or operated by Regional San.

RESIDENTIAL USER: A user whose premises are used solely for nontransient human habitation.

SACRAMENTO AREA SEWER DISTRICT (SASD): The Sacramento Area Sewer District, formerly known as County Sanitation District No. 1.

SANITARY SEWAGE: All water-carried waste from residences, business buildings, institutions, or other similar establishments, excluding storm waters, combined flow, and industrial waste.

SRWTP: The Sacramento Regional Wastewater Treatment Plant.

SUMP NO. 1/1A: That pumping station operated by the City of Sacramento located at Front and U Street.

SUMP NO. 2: That pumping station operated by the City of Sacramento located at 3530 Riverside Blvd.

SYSTEM: All facilities for the collection, conveyance, treatment, and discharge of wastewater owned or operated by Regional San, a Contributing Agency, or a Contracting Agency, as indicated by the context in which it is used.

SYSTEM USERS: Industrial, non-industrial, and commercial users of Regional San, a Contributing Agency, or a Contracting Agency, as indicated by the context in which it is used.

TERRITORIAL JURISDICTION: That area of land encompassed within the boundaries of Regional San or a Contributing Agency's service area as referenced in the Consolidated Ordinance.

TRUNK SEWER: Any collector sewer designated as a trunk sewer by the Contributing Agency operating said sewer.

WASTEWATER: The liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, whether treated or untreated, which is contributed into or permitted to enter the Regional San's facilities. This also includes infiltration, inflow, and combined flow.

Section 2. Term of Agreement.

This Agreement shall become effective as of the date hereof and shall continue in full force and effect for a period of time beginning on the date of this Agreement and including and ending on June 30, 2071, or until sooner terminated by agreement of all the parties hereto, or by operation of law.

Section 3. General Scope of Services Performed by Regional San.

Except as otherwise provided herein, Regional San shall:

(a) Finance, construct, reconstruct, operate, and maintain all facilities for the treatment and disposal of sanitary sewage and industrial waste delivered to it and originating from within the local service area of each Contributing Agency;

(b) Finance, construct and reconstruct Sumps 2A, 55, and 119 and related Regional San-owned piping as shown in the Operating Agreement between Regional San and the City of Sacramento.

(c) Finance, construct, reconstruct, operate, and maintain all Interceptor Sewers for conveyance of wastewater from a Contributing Agency or a major portion of a Contributing Agency to the SRWTP.

Section 4. General Scope of Services of Contributing Agencies.

Except as otherwise provided herein, each Contributing Agency shall provide the following local services:

(a) Finance, construct, reconstruct, operate, and maintain all collector and trunk sewers for wastewater originating within its local service area.

(b) Dispose of all wastewater originating within its local service area by delivery of same to the Regional System.

Section 5. Local Service Area of Contributing Agencies.

Each Contributing Agency shall have the duty of providing local services to such portion of its local service area that is within its territorial jurisdiction.

Subject to such conditions, limitations or restrictions as it deems necessary or desirable, each Contributing Agency may agree to provide local services to an area within its local service area that is not within its territorial jurisdiction. If an area is not within the territorial jurisdiction of Regional San, no local service shall be provided to that area by a Contributing Agency until its annexation to Regional San has been effected. Upon request of the applicable Contributing Agency, Regional San shall undertake and accomplish such acts as are required of it by law to accomplish any such annexation.

An area within the local service area of a Contributing Agency that is not within its territorial jurisdiction shall not be provided local service by any other Contributing Agency without the prior consent of both Regional San and the Contributing Agency in whose local service area the subject area is situated.

Section 6. Enlargement of Local Service Area.

A Contributing Agency may enlarge its local service area with the prior consent of Regional San; provided however, Regional San shall not consent to any such enlargement if the probable effect of said enlargement would materially affect the ability of any other Contributing Agency to make reasonable use of facilities of Regional San to provide local service to its present system users or reasonably anticipated future users.

Section 7. Uniform Charge for Regional San Services.

It is the intent of all parties to the Agreement that:

(a) Except as otherwise provided herein, the present and future costs of providing Regional San Services to users within Contributing Agencies shall be uniformly and equitably allocated among all users of Regional San treatment, conveyance, and disposal facilities without regard to their geographic location within Regional San; and

(b) The present and future costs of providing Regional San Services shall be primarily recovered through the levy and collection of fair and reasonable user service charges, taxes, and fees for connection to the system all based upon rates determined and established by Regional San; and

(c) User service charges collected for Regional San shall be expended only for the acquisition, construction, reconstruction, maintenance and operation of facilities needed to provide Regional San Services, to repay principal and interest on bonds issued for the construction, reconstruction or expansion of such facilities (including reasonable allowance for reserves necessary to comply with requirements associated with bond sales), loans or advances, or

to repay other loans or advances made to Regional San for the construction, reconstruction or expansion of such facilities, or requirements associated with State and Federal grants; and

(d) User service charges collected by Regional San shall not be used for the acquisition, construction, repair or maintenance of collector sewers or trunk sewers as distinguished from interceptor sewers or the SRWTP Outfall Sewer.

(e) Regional Sewer Impact Fees may be waived through the adoption of an ordinance by Regional San providing for Sewer Impact Fee waivers. Sewer Impact Fee waivers are adopted and described in the Consolidated Ordinance.

Section 8. Establishment of Service Rates and Procedures for the Collection of Sewer Rates and Delinquent Charges.

Regional San has in accordance with law and the intent expressed in the provisions of Section 7 of this Agreement formulated and adopted a schedule of user service charges for Regional San Services specifying the classes or categories of system users and providing a rate or rates for each such class or category of user.

Rates, classifications, and schedules adopted by Regional San for users of the Regional System may be amended from time to time in accordance with law, and to accomplish the intent of this Agreement but, the effective date of any such amendment shall be not less than 30 days from the date upon which said action is taken.

Subsequent to the execution of this Agreement, Regional San will either (a) enter into an agreement with each Contributing Agency or (b) amend an Operating Agreement, to specify the Contributing Agency's responsibilities for the billing, collection, assessment, as well as, documentation requirements.

Pursuant to such agreements, Regional San may agree to allow a Contributing Agency to assume the responsibility of billing and collection of Regional San's rates and fees. There are two options for Contributing Agencies to remit rates to Regional San.

- For Contributing Agencies that remit only the rates successfully collected, Regional San will reimburse the Avoided Cost of billing based on an average annual cost per account for Regional San to bill sewer rates.
- For Contributing Agencies that remit rate charges due for all accounts, Regional San will reimburse for the Avoided Cost of billing. At end of year, Contributing Agencies may bill Regional San for any rates that have been determined to be ultimately unrecoverable.

Contributing Agencies that bill and collect Regional San rates must provide documentation for unrecoverable sewer rates to Regional San.

Until either a billing and collection agreement is entered into or an Operating Agreement is modified to add billing and collection terms, a Contributing Agency must continue to collect

Regional San rates and charges as the Contributing Agency was doing prior to the execution of this amended MIA.

Unless there is either a new billing and collection agreement or an amended Operating Agreement with billing and collection terms between that Contributing Agency and Regional San, a Contributing Agency shall establish and maintain a billing system for the collection of user service charges for Regional San Services that conforms to the classification and categorization of regional user rates established and adopted by Regional San. In conjunction with the maintenance of the billing system for regional user service charges, each Contributing Agency shall establish, produce, and maintain adequate reports from its billing system to allow Regional San to ascertain that the billing and transfers of billed amounts are representative of the customer base being provided services.

Transition Period

The transition period is the period from execution of this Agreement to the effective date of the individual Contributing Agencies' billing and collection services agreements or amendment of existing Operating Agreements to include a section on billing and collection services. During the transition period, Contributing Agencies will continue to conduct billing and collection and remit fees under the current process (as stated above).

Regional San will reimburse the Contributing Agencies for the Avoided Cost of billing based on an average annual cost per account for Regional San to bill sewer rates.

Regional San will reimburse the Contributing Agencies for Avoided Costs for the duration of the transition period. The reimbursement payment will be made within 60 days of the effective date of the billing and collection agreement or a revised Operating Agreement that includes a section on the billing and collection of sewer rates.

Section 9. Collection of Regional San Charges.

Unless there is a billing and collection agreement, or a revised Operating Agreement that includes a section on the billing and collection of sewer rates, between that Contributing Agency and Regional San, a Contributing Agency shall periodically levy, bill, and use reasonable efforts to collect from each of its residential and commercial system users a charge for Regional San Services that conforms to the schedule of user rates adopted by Regional San that is in effect upon the date of billing.

In respect to industrial users, Regional San shall be responsible for:

(a) Collecting all information needed to compute user charges,

(b) The computation of such charges, and

(c) Periodically billing the computed Regional San charges directly to the industrial user without regard to the user's location within the territorial jurisdiction of Regional San.

By mutual agreement, the charge for Regional San Services may be collected with the rates, tolls, and charges for local services or other utility services.

If Regional San charges are collected with the rates, tolls, and charges of another utility, the Regional San charge shall be shown on the billing as such and shall not be combined with any other rate, toll, or charge appearing on the billing.

Adequate records shall be maintained by all Contributing Agencies to permit ready, separate identification of Regional San Services and of local service charges, amounts received, and payments made to Regional San.

Nothing herein shall prevent Regional San from levying, billing, and collecting charges for Regional San Services from any or all residential and commercial system users when the District Engineer determines charges are not being collected consistent with the Consolidated Ordinance.

Section 10. Payment of Charges to Regional San.

This section applies to a Contributing Agency unless there is a billing and collection agreement or a revised Operating Agreement that includes a section on the billing and collection of sewer rates, between a Contributing Agency and Regional San. Not later than 60 days following the date of each regular periodic billing of a Contributing Agency, that agency shall pay to Regional San a sum that equals the total of all charges for Regional San Services that were collected in said billing. Payments shall be accompanied with a summary identification by billing categories. Detailed account identification may remain with the Contributing Agency. A periodic report shall be submitted to Regional San reconciling billings with payments.

The Contributing Agencies agree to make reasonable efforts to collect all delinquent charges and remit collected delinquent charges within 60 days following receipt of delinquent revenue by the Contributing Agency, while absorbing the cost of collecting such charges. The Contributing Agencies shall provide Regional San details of uncollected delinquent charges.

Each Contributing Agency agrees to absorb:

(a) Administrative costs incidental to collection and transmittal of regional service charges; and

(b) Costs associated with collecting delinquent charges; and

(c) Costs attributable to unbilled regional service charges that should reasonably have been billed.

Contributing Agencies shall not bill Regional San for such costs, nor deduct such costs from service charges due Regional San. The sole source of reimbursement to Contributing Agencies for such costs is provided for in Section 8.

Section 11. Sewer Impact Fees.

Regional San shall, in accordance with law and the intent expressed in the provisions of Section 12 of this Agreement, adopt a Consolidated Ordinance to establish Sewer Impact Fees for the privilege of connecting a sewer service to any sanitary sewer within the territorial jurisdiction of Regional San. Fees adopted by Regional San may be amended from time to time in accordance with law and to accomplish the intent of this Agreement. Procedures for payment, collection, and documentation of Sewer Impact Fees shall be prescribed by Regional San and each Contributing Agency shall provide such services as are necessary for collection, documentation, and transfer of such fees without cost to Regional San. All Sewer Impact Fees collected pursuant to this Agreement shall be remitted no less than quarterly to Regional San. However, Sewer Impact Fees for commercial, industrial, and multiple-family residential (except duplex) users will be computed and collected by Regional San, unless otherwise authorized or approved by Regional San and the Contributing Agency affected.

Section 12. Method of Computing Sewer Impact Fees for Users.

All new users connecting to a sanitary sewer owned by Regional San or one of its Contributing Agencies shall pay an appropriate amount for their share of the capital investment in the Regional System in accordance with the Consolidated Ordinance. The Consolidated Ordinance requires all new users within the territorial jurisdiction of Regional San, or having applied for annexation thereto, to pay a Sewer Impact Fee calculated to finance planning, design, construction, inspection, administrative, debt service, debt covenant, and other related costs for wastewater conveyance, treatment, and disposal facilities for Regional System expansion.

Sewer Impact Fees are established in the Consolidated Ordinance.

Sections 13–19. Deleted.

Section 20. Annexation to Regional San.

An area within the territorial jurisdiction of a Contributing Agency may be annexed to Regional San at the request of and with the consent of that Contributing Agency and in the manner prescribed by law. Annexation to Regional San and a Contributing Agency may occur simultaneously. Fees assessed by the Sacramento Local Agency Formation Commission for processing annexations and conducting environmental reviews related to such annexations shall be paid by the petitioners as indicated in the Consolidated Ordinance.

Any area outside the territorial jurisdiction of the Contributing Agencies may be annexed to Regional San provided it has been designated for those classes of urban uses generally requiring public utility services in the adopted Sacramento County General Plan or an adopted General Plan of any other Contributing Agency as it exists at the time the annexation occurs, and if the area simultaneously annexes to a Contributing Agency.

Section 21. Service to Contracting Agencies.

Regional San may enter into agreements to provide services to Contracting Agencies; provided, however, Regional San shall not enter into an agreement to provide Regional San Services to a Contracting Agency if the probable effect of providing such service would materially affect the ability of any Contributing Agency to make reasonable use of the Regional System to provide local service to its present system users or reasonably anticipated future users.

Fees chargeable for Regional San Services provided to Contracting Agencies shall be fixed by Regional San. Said fees shall provide Regional San with full reimbursement for all costs of whatever nature incurred by it in providing such service.

Section 22. New Contributing Agencies.

A public entity that operates its own sewage collection system may become a Contributing Agency under this Agreement by appropriate amendment thereof and by consenting to the annexation to Regional San of such areas of land within its territorial jurisdiction as are to be served by Regional San. Said entity's status as a Contributing Agency shall not be effective until the annexation to Regional San is legally consummated.

Sections 23–24. Deleted.

Section 25. Easements - Joint Usage with Regional San.

At the request of Regional San, each Contributing Agency and the County of Sacramento shall permit Regional San to make reasonable joint usage of those sanitary sewer easements, rights of way, or Public Utility Easements for which the Contributing Agency or County of Sacramento has a right of usage unless such joint usage is precluded by law or contract. If an easement or right of way is situated in a public street or highway, the laws of the State of California shall govern its joint usage by Regional San in the absence of a specific agreement relating thereto between Regional San and the party that is the owner of the easement or right of way.

This section will sunset as to the County of Sacramento only on June 30, 2024. Regional San and the County of Sacramento may, by mutual agreement, sunset this section prior to the aforementioned sunset date.

Section 26. Operation of Regional System.

Subject to the exceptions and limitations set forth in this Agreement, Regional San has assumed the sole responsibility to finance, construct, reconstruct, operate, and maintain the Regional System in compliance with all applicable regulatory requirements.

Section 27–28. Deleted.

Section 29. Operation of the City of Sacramento's Combined Flow Facilities.

The City of Sacramento shall operate and maintain at its sole expense all facilities required for the collection, storage, conveyance, treatment, and discharge of combined flow originating within its service area, including but not limited to those facilities constructed by Regional San. Provided, however, the City of Sacramento may at no additional expense to itself make use of maximum available capacity (not to exceed 60 MGD without the prior consent of Regional San) in the treatment facilities constructed by Regional San at the Regional Wastewater Treatment Plant Site for the treatment of the City of Sacramento's combined flow. The City of Sacramento may use the available treatment capacity prior to diversion of a portion of its combined flow into storage and treatment facilities constructed by Regional San and operated by the City of Sacramento for the primary purpose of storing and treating combined flow or prior to the direct discharge of said flow in untreated or partially treated form into the Sacramento River from Sump No. 1 or Sump No. 2.

Section 30–35. Deleted.

Section 36. Regional San Personnel; Local Personnel.

The County of Sacramento shall provide all personnel required for the administration, operation, and maintenance of the Regional System. Regional San shall reimburse the County of Sacramento for the reasonable actual costs incurred by the County of Sacramento in providing personnel for Regional San pursuant to this section. This section will sunset on June 30, 2024. Regional San and the County of Sacramento may, by mutual agreement, sunset this section prior to the aforementioned sunset date.

Section 37. Deleted.

Section 38. Infiltration/Inflow - Corrective Repairs.

Each Contributing Agency will complete such corrective measures to eliminate excessive inflow and infiltration as are reasonably demonstrated to be cost effective by studies conducted and funded by Regional San. Regional San and the Contributing Agencies will cooperate in the studies' design and implementation.

Sections 39-40. Deleted.

Section 41. Rules and Regulations Concerning Use of Sewers.

Regional San has adopted an ordinance regulating the use of public sewers known as the Consolidated Ordinance and may amend the same from time to time. Each party to this Agreement shall adopt and enforce ordinances, resolutions, rules, and regulations consistent with and complementary to the Consolidated Ordinance to regulate the discharge into the sewers under its control of wastewater that would be detrimental to the Regional System. Each party to this Agreement shall also comply with the applicable statutes, rules, and regulations of Regional San and of agencies of the United States of America, and of the State of California.

Section 42. Notice.

Notices required or permitted under this Agreement shall be sufficiently given to a party if in writing and if either served personally upon or mailed by registered or certified mail to the clerk of its governing body.

Section 43. Time of the Essence.

Time is of the essence in this Agreement.

Section 44. Modification of Agreement.

Regional San and the Contributing Agencies will review this Agreement every 5 years, or sooner, to evaluate if amendments are necessary.

No term, provision, or condition of this Agreement shall be altered, amended, or departed from or be held or construed to have been waived except by the unanimous agreement and consent of all parties to this Agreement as evidenced by resolutions adopted by their respective governing bodies specifically authorizing the amendatory agreement, except as provided below.

Sections 8, 29, 38, and Exhibit A of this Agreement may be amended if approved in writing by all of the following parties: the District Engineer for Regional San and SASD; Director of Utilities for the City of Sacramento; Director of Environmental and Water Resources for the City of Folsom, and the Director of Public Works for the City of West Sacramento. Sections 25 and 36 will sunset as to the County of Sacramento on or before June 30, 2024, as specified in those sections.

Section 45. Severability.

If any paragraph, subparagraph, sentence, clause, phrase, or word of this Agreement, or the application thereof, to any party, or to any other person or circumstance is for any reason held invalid, it shall be deemed severable and the validity of the remainder of the Agreement or the application of such provision to the other parties, or to any other persons or circumstance shall not be affected thereby. Each party hereby declares that it would have entered into this Agreement and each paragraph, subparagraph, sentence, clause, phrase, and word thereof irrespective of the fact that one or more paragraphs, subparagraphs, sentences, clauses, phrases, or words, or the application thereof to any party or any other person or circumstance, be held invalid.

Section 46. Arbitration.

Any controversy or claim between any two or more parties to this Agreement, in respect to Regional San's operations, a Contributing Agency's operations, or to any claims, disputes, demands, differences, controversies, inequities or misunderstandings arising under, out of, or in relation to this Agreement, (or any subsidiary agreement executed pursuant to this Agreement), or any breach thereof, shall be submitted to and determined by arbitration. To the extent not inconsistent herewith, the rules of the American Arbitration Association shall apply. The party

desiring to initiate arbitration shall give notice of its intention to arbitrate to every other party to this Agreement. Such notice shall designate as "respondents" such other parties as the initiating party intends to have bound by any award made therein. Any party not so designated that desires to join in the arbitration may, within ten days of service upon it of such notice, file a response indicating its intention to join in and to be bound by the results of the arbitration, and further designating any other party or parties it wishes to name as a respondent. Within twenty (20) days of the service of the initial demand for arbitration, the American Arbitration Association, hereinafter referred to as "AAA" shall submit simultaneously to the initiating party and to all parties named as respondents or filing a response therein, an identical list of names of persons chosen from the AAA National Panel of Arbitrators which persons shall be, to the extent possible, persons first in the field of wastewater disposal and reclamation as well as public law. Each party to the dispute shall have seven days from the mailing date in which to cross off any names to which it objects, number the remaining names indicating the order of its preference, and return the list to the AAA. If a party does not return the list within the time specified, all persons named therein shall be deemed acceptable. From among the persons who have been approved on both lists, in accordance with the designated order of mutual preference, the AAA shall invite the acceptance of an arbitrator to serve. If the parties fail to agree upon one of the persons named, or if an acceptable arbitrator is unable to act, or if for any other reason the appointment cannot be made from the submitted list, the AAA shall have the power to make the appointment of the arbitrator from other members of the panel without the submission of any additional list.

The arbitrator shall determine the rights of the parties in accordance with the law, and the award shall be subject to review as to the arbitrator's application of the law by any court having jurisdiction thereof, whether or not any mistake of law shall appear upon the face of the award. As to all questions of facts, however, the determination of the arbitrator shall be binding upon all parties and shall be final. Any party shall be entitled to written findings of fact and conclusions of law as to all issues determined by the award. Subject to the above limitations, the award shall be binding upon all parties to the arbitration and judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof.

The arbitrator may, in his or her discretion, as part of the arbitration award, impose upon any one party or allocate among two or more of the parties, the liability for the arbitration fees and expenses. Such allocable fees may include the initial administration fees, fees for second and subsequent hearings, postponement fees, and overtime fees. Allocable expenses may include the expenses of producing witnesses, the cost of stenographic records, the cost of any transcripts, travel expenses of the arbitrator and tribunal administrator, the expenses of any witnesses, the costs of any proofs produced at the direct request of the arbitrator, and any other expenses relating directly to the arbitration. In the event of the failure of the arbitrator to provide for the allocation of such fees and expenses, the arbitration fees shall be divided equally between the parties and the expenses shall be borne by the party incurring them.

Section 47. Deleted.

Section 48. Auditing Records.

Regional San shall have the authority to appoint such auditors as it deems necessary for the

examination of financial records of Contributing Agencies to determine compliance with this Agreement. Contributing Agencies shall make available to such auditors all requested records and will assist and cooperate with the auditors in their efforts. Specific records requirements will be detailed in the billing and collection agreements. Examples of required documentation may include reasonable efforts to collect delinquent charges; details of uncollectable charges; and account billing information by parcel.

Section 49. Delayed Payments.

Whenever any party to this Agreement shall have failed to make any payment required of it by the provisions of this Agreement on or before the date provided for such payment, such party shall pay, in addition to said payment, interest thereon at the rate of seven percent (7%) per annum for and during the period of such delay. Nothing herein contained, however, shall be deemed to authorize or condone any delay in making any such payments.

Section 50. Failure of Regional System to Properly Treat Wastewater.

It is understood and agreed that Regional San, in granting to Contributing Agencies the rights herein specified to discharge wastewater into the Regional System and to have such wastewater conveyed, treated and disposed of in said system, is not warranting or guaranteeing that the Regional System will be able to satisfactorily treat such wastewater. In the event the Regional System should for any reason be incapable of satisfactorily conveying, treating, or disposing of wastewater discharged into the same by Contributing Agencies and by all other parties now or hereafter authorized to discharge wastewater therein, Regional San shall in no way be liable to Contributing Agencies for any damages arising or resulting from or suffered because of the failure of the Regional System to satisfactorily receive, hold, treat, or otherwise dispose of wastewater, provided, however, that Regional San shall not knowingly permit to be discharged into Regional System any wastewater at rates of flow, strength or other characteristics inconsistent with those for which the Regional System is designed to handle or has been shown capable of handling by prior experience.

Section 51. Successors and Assigns.

It is mutually agreed by all the parties hereto that the agreements, covenants, conditions, limitations, restrictions, and undertakings herein contained shall apply to and bind the successors and assigns of the respective parties hereto as if they were in all cases named.

Section 52. Termination of Existing Agreements.

Concurrent with the execution of this Agreement, the 1974 MIA is hereby superseded by this Agreement. Additionally, the Wastewater Services Agreement between the City of West Sacramento and the Sacramento Regional County Sanitation District, Contract No. 70241, dated March 31, 2004, will terminate upon execution of this Agreement.

Section 53. Mutual Indemnification.

No party to this Agreement nor any officer or employee thereof shall be responsible for any damage or liability occurring by reason of anything done or omitted to be done by any other party to this Agreement under or in connection with any work, authority or jurisdiction delegated to said other party under this Agreement. It is also understood and agreed that, pursuant to California Government Code Section 895.4, each party to this Agreement shall fully indemnify and hold each other party to this Agreement harmless from any liability imposed for injury (as defined by California Government Code Section 810.8) occurring by reason of anything done or omitted to be done by said indemnifying party under or in connection with any work, authority or jurisdiction delegated to said party under this Agreement.

Section 54. Removal of County of Sacramento as a Party.

Effective June 30, 2024 when Sections 25 and 36 sunset (or sooner if Regional San and County of Sacramento mutually agree), the County of Sacramento will no longer be a party to this Agreement.

Section 55. Document Precedence

In the event of a conflict between any of the agreements or ordinances listed below, the following sequence governs, with each agreement or ordinance superior to the agreement or ordinance listed thereafter.

1. This Master Interagency Agreement
2. Regional San Consolidated Ordinance
3. Operating Agreements
4. Other agreements between Regional San and a Contributing Agency

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT, a political subdivision of the State of California

By _____
District Engineer

ATTEST:

_____
Clerk

CITY OF FOLSOM, a municipal corporation

By _____
City Manager

ATTEST:

_____
City Clerk

CITY OF SACRAMENTO, a municipal corporation

By _____
Hector Barron, Assistant City Manager

ATTEST:

_____
Wendy Klock-Johnson (Apr 29, 2021 19:43 PDT)
City Clerk

CITY OF WEST SACRAMENTO, a municipal corporation

By _____
Mayor

ATTEST:

_____
City Clerk

COUNTY OF SACRAMENTO, a political subdivision of the State of California

By _____
Chair

ATTEST:

_____
Clerk

SACRAMENTO AREA SEWER DISTRICT, a political subdivision of the State of California

By _____
District Engineer

ATTEST:

_____
Clerk

APPROVED AS TO FORM:

_____
City Attorney, City of Folsom

APPROVED AS TO FORM:
Michael Voss for
Michael Voss for (Apr 28, 2021 11:18 PDT)
_____
City Attorney, City of Sacramento

APPROVED AS TO FORM:

_____
City Attorney, City of West Sacramento

APPROVED AS TO FORM:

_____
County Counsel, for County of Sacramento, Regional San and SASD

Appendix G –
FreeFlow H20 User Manual

FreeFlow H2O: User Manual

Sewer Cleaning Optimization Tool

January 26, 2024

Table of Contents

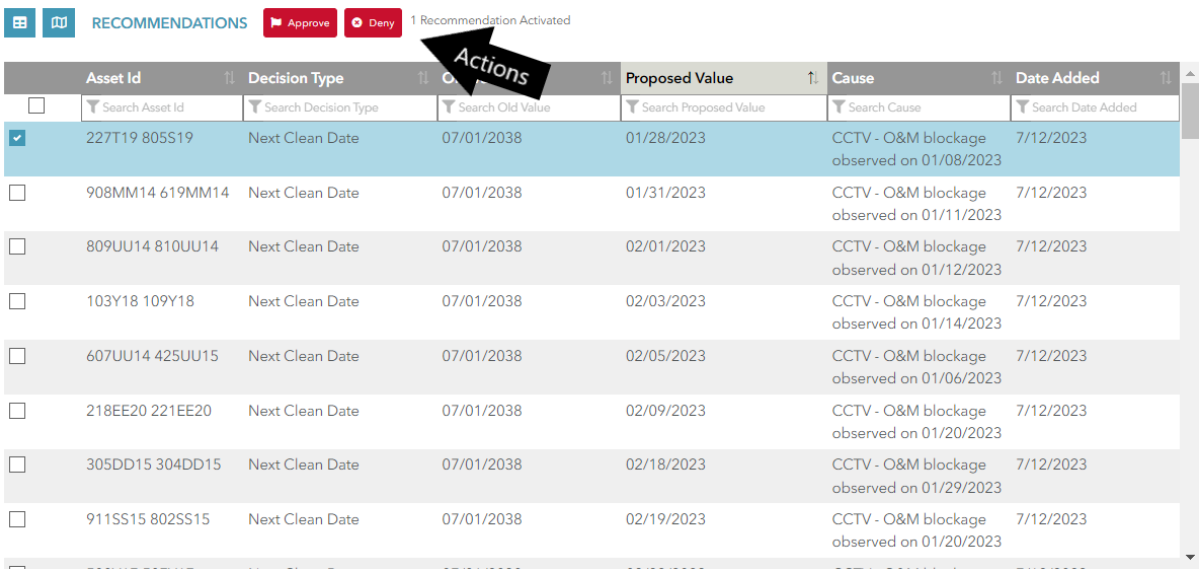
What is FreeFlowH2O?

FreeFlowH20 (FFH2O) is a sewer main cleaning optimization tool to consolidate and manage sewer main cleaning findings and provide recommendations to update the cleaning schedule. The recommendations provided by the algorithms are reviewed by the user and approved or rejected within FF. The approved and rejected recommendations are stored in database which is applied to the cleaning schedule that is uploaded to the CMMS Scheduling Tool (see Section 3.0). Recommendations can include adding cleaning schedules, modifying existing frequencies, modifying existing next schedule dates, and a comment change.

Scheduling Recommendations

Scheduling recommendations are found on the first tab in FFH2O

This page shows cleaning recommendations and the ability to approve or deny. By selecting an asset ID, the user can see the frequency of the cleaning schedule, the total SSO, and the inspection data. The map to the right will display the location of the selected asset(s). To approve or deny a recommendation, select the desired asset, then use the red buttons above the chart to decide.



Asset Id	Decision Type	Old Value	Proposed Value	Cause	Date Added
227T19 805S19	Next Clean Date	07/01/2038	01/28/2023	CCTV - O&M blockage observed on 01/08/2023	7/12/2023
908MM14 619MM14	Next Clean Date	07/01/2038	01/31/2023	CCTV - O&M blockage observed on 01/11/2023	7/12/2023
809UU14 810UU14	Next Clean Date	07/01/2038	02/01/2023	CCTV - O&M blockage observed on 01/12/2023	7/12/2023
103Y18 109Y18	Next Clean Date	07/01/2038	02/03/2023	CCTV - O&M blockage observed on 01/14/2023	7/12/2023
607UU14 425UU15	Next Clean Date	07/01/2038	02/05/2023	CCTV - O&M blockage observed on 01/06/2023	7/12/2023
218EE20 221EE20	Next Clean Date	07/01/2038	02/09/2023	CCTV - O&M blockage observed on 01/20/2023	7/12/2023
305DD15 304DD15	Next Clean Date	07/01/2038	02/18/2023	CCTV - O&M blockage observed on 01/29/2023	7/12/2023
911SS15 802SS15	Next Clean Date	07/01/2038	02/19/2023	CCTV - O&M blockage observed on 01/20/2023	7/12/2023

Work Order Creation

Work Order Creation is the second tab in FFH20.

This page allows the user to select sewer mains for cleaning based on their cleaning frequency and geographic location. The table contains attributes for each asset displayed on the map. If a main is not visible on the map, it is not able to be scheduled and will not have attributes displayed in the table. If a main is not visible on the map:

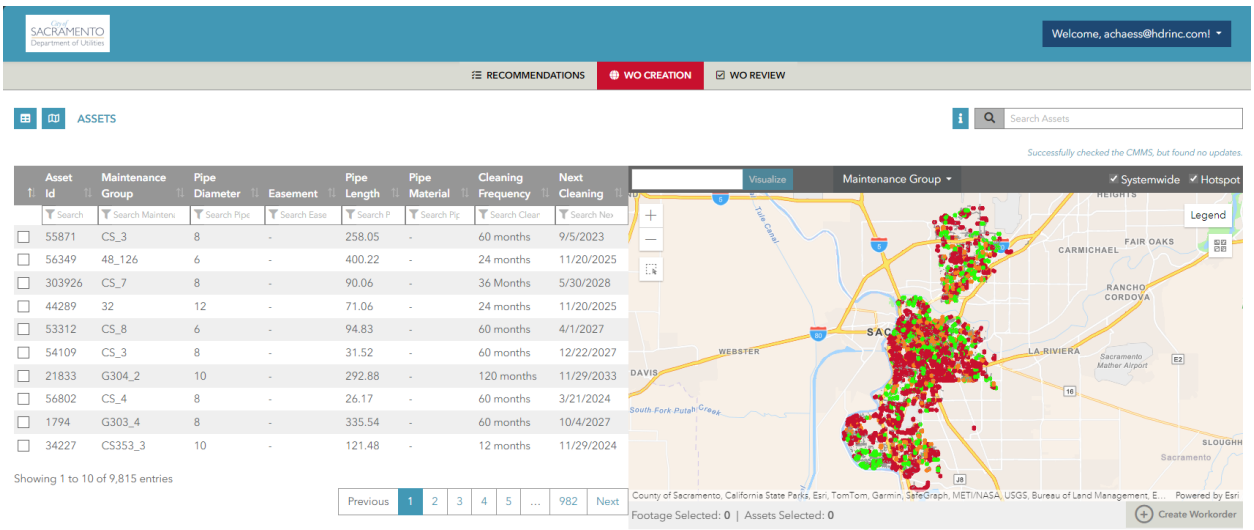
1. The main was placed on hold using a manual recommendation
2. The main is on an open work order
3. The main has an open wash inspection in CMMS

To check if a specific main is on hold, it can be queried using the Manual Recommendation feature in the Recommendations Tab.

The map can be filtered by cleaning type. Hot spot mains are mains with a cleaning frequency equal to or less than 24 months. Systemwide mains have cleaning frequencies that are equal to or more than 60 months.

Further refined filters include Maintenance group, pipe diameter, easement, pipe length, pipe material, cleaning frequency, and next cleaning.

This page also tracks open cleaning work orders in the CMMS. The Review tab contains a table, a map displaying mains on pending / open work orders, a search bar to select work orders by WO ID, data filters for pending / open work, and work order actions which are activated by selecting a pending work order from the table. The page is shown below:



Maintenance Basins:

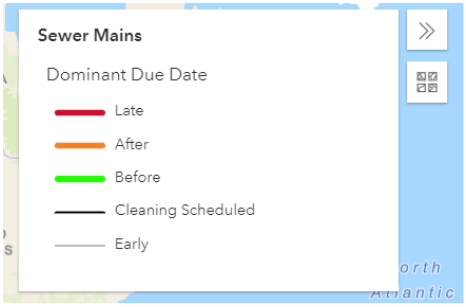
- Sewer mains are hydraulically grouped into maintenance basins
- They were developed based on hydrology
- Whenever possible, try to schedule only schedule pipes within a single maintenance basin on a work order

Systemwide vs Hotspot

- Systemwide mains typically have a cleaning frequency >= 60 months
- Hotspot mains have cleaning frequency =< 24 months
- Hotspot mains are assets with known performance issues and a higher potential for sanitary sewer overflows than systemwide pipes due to historical data and cleaning results.

Visualization Tool

- The visualization tool allows you to select a date in the future to see which pipes will be due when crews are actually in the field to complete the work order.
- Sewer main colors will change depending on relative proximity to the date being visualized and their corresponding cleaning window. See legend below.



How to Create a Work Order

- Set the visualization date
- Set the map filter to “Hotspot”
- Select a maintenance basin with overdue hotspot work
- Click on the lines and click “Add to selection”
- Add / remove lines as needed
- Once all hot spots in a basin are selected, see if any systemwide work can be completed as well
- Note the number of sewer mains on the work order, you will use this to verify the entire work order has been processed in the next step.
- Once all mains are selected, click the “Create Work Order” Button at the bottom of the map

  - ONLY HIT THIS ONCE
  - DO NOT refresh the page
- Open the Work Order Review Tab to verify the work order has been created

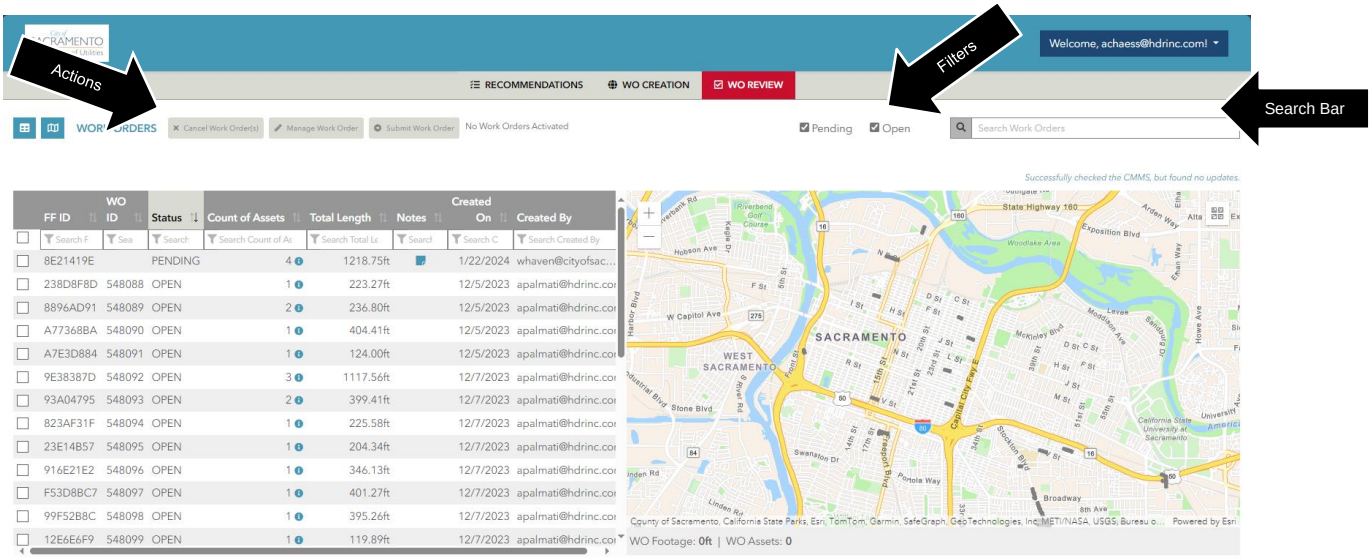
Work Order Review

Overview

Work Order Review is the third tab in FFH20. The purpose of the WO Review tab is to allow users to manage or submit Free Flow Work Orders to the CMMS. This page also tracks open cleaning work orders in the CMMS. The Review tab contains the following:

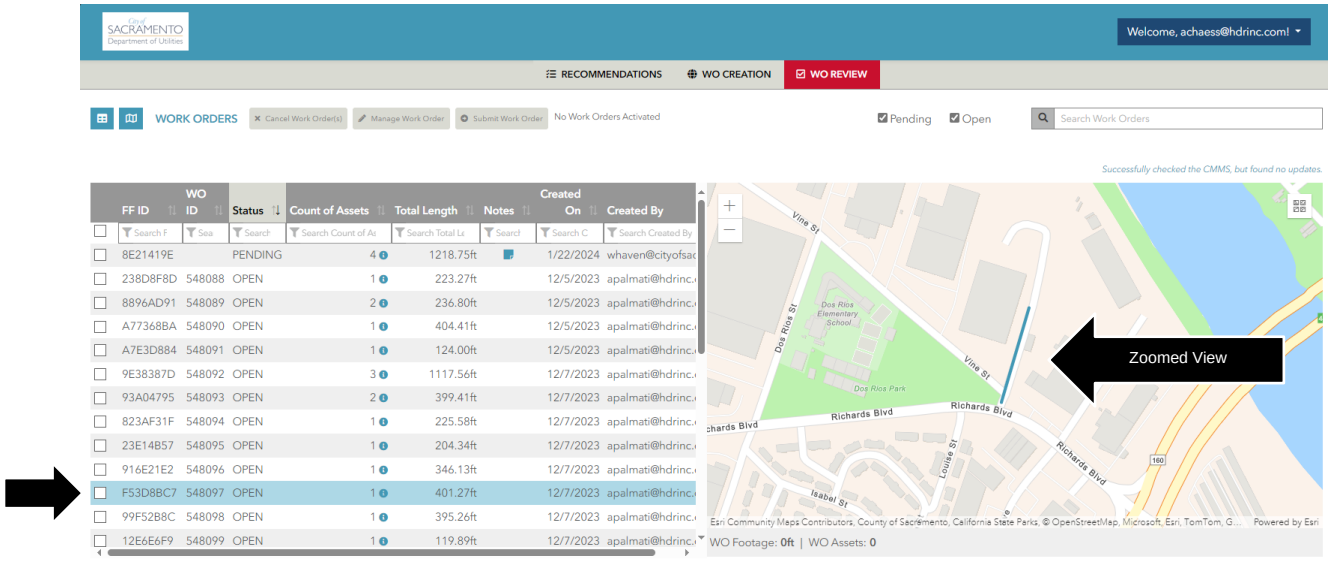
- Table and map displaying mains on pending or open work orders
- Search bar to select work orders by WO ID
- Data filters for pending / open work
- Work order actions
  - which are activated by selecting a pending work order from the table

The page is shown below:

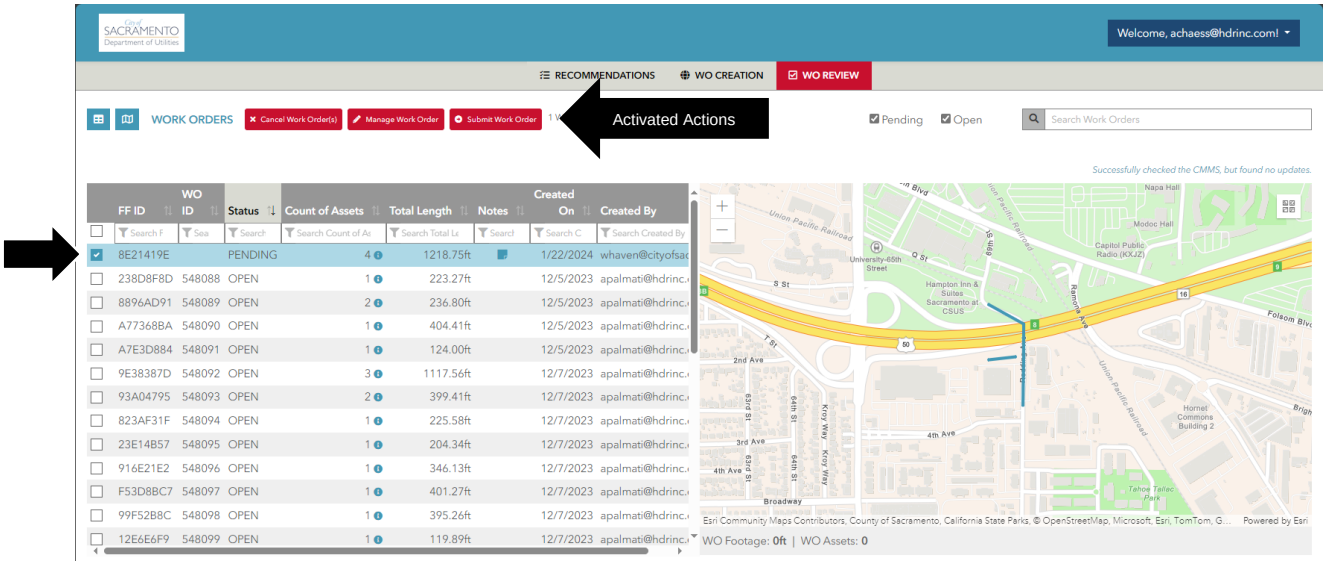


The table shows each work orders unique FF ID. Once an FF WO is submitted to CMMS, a CMMS WO ID will auto populate in the adjacent column. The table also lists the number of assets on each work order and the total length of pipe on the work order. These features can be used to help identify previously created work orders.

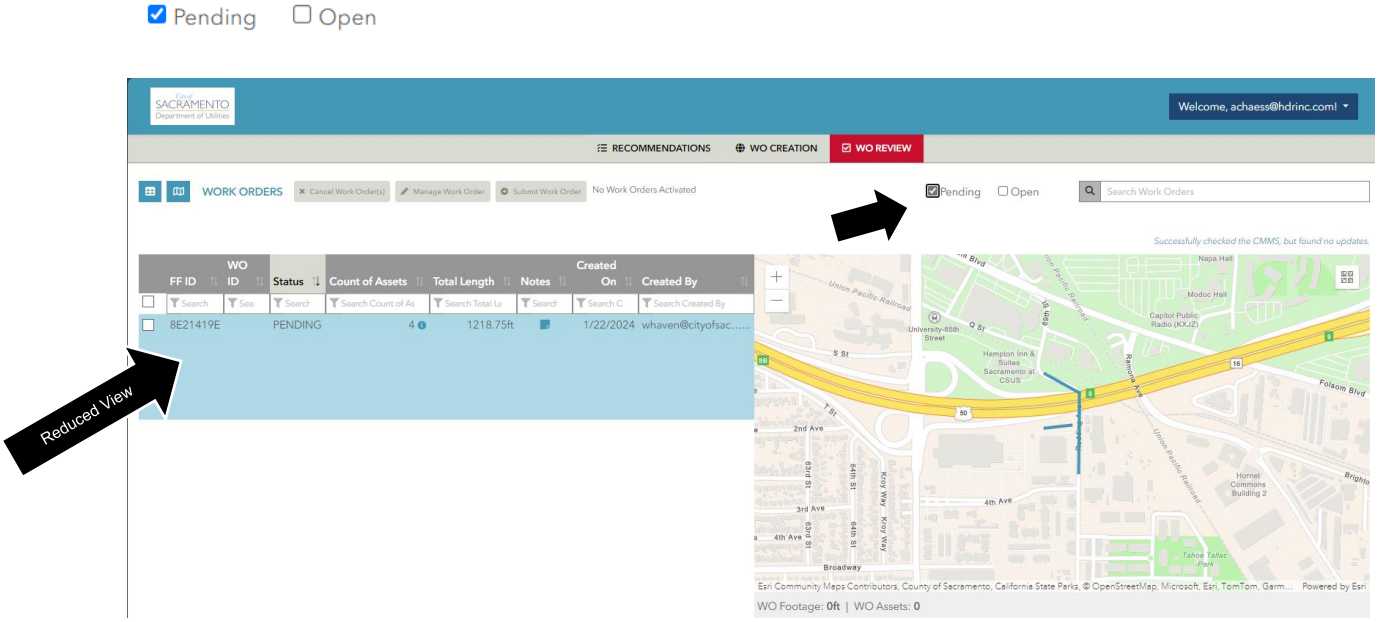
Select on any row in the table will highlight the row and cause the map to zoom to the mains on the work order as shown in the capture below:



Selecting a PENDING FFH2O WO work order by clicking the box at the far-left side of the table will allow for the work order to be canceled, managed, or submitted. Notice when the box is checked, the icons at the top of the page change colors from grey (inactive) to red (active).



If a work order has already been submitted to the CMMS and in “OPEN” status, checking the box will not activate the work order action buttons. Once an FF WO is submitted to CMMS, it can no longer be edited in FF. To view only “pending” work orders, work orders which have not yet been submitted to CMMS, use the filter boxes above the map to remove “open”, or active, CMMS WOs from the view.

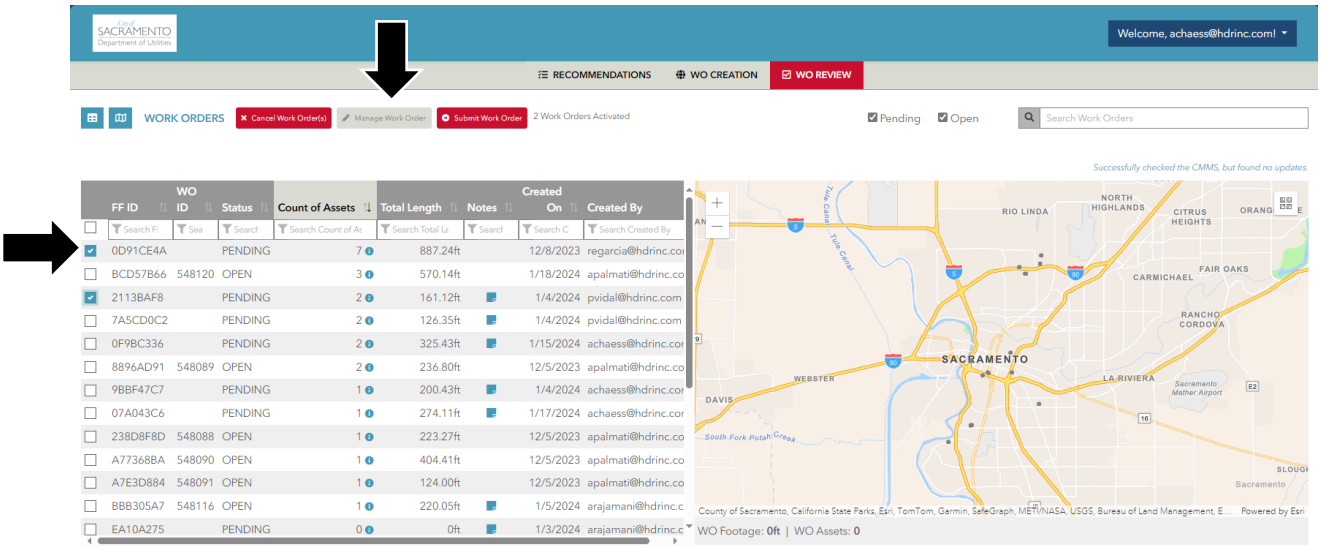


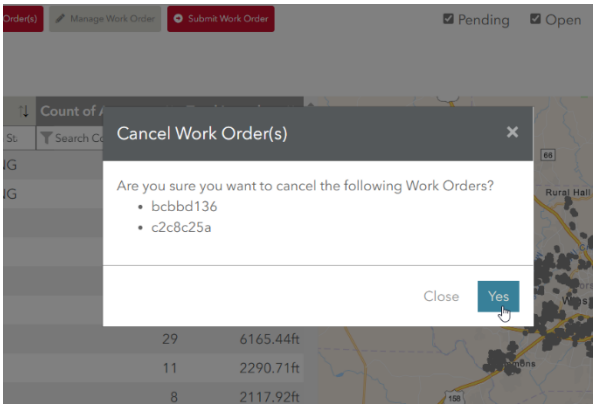
Work Order Management

After a work order is created in the Work Order Creation Tab, the FF WO can then be Canceled, Managed, or Submitted.

Cancel Work Order

If a work order has been created which is no longer needed, the work order can be canceled before a wash ticket is created in CMMS. Only pending work orders can be canceled, as they have not yet been submitted to CMMS. To cancel a work order, or multiple work orders, first select the record(s) in the table and click the “Cancel Work Order” at the top of the screen.





Select “Yes” to confirm the work order(s) cancellation. If the work order should not be canceled, select “Close”.

The work orders will no longer be visible in the table on the WO Review Tab.

Manage Work Order

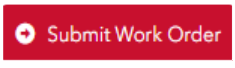
Pending FF WOs can be altered using the Manage WO feature of the WO Review tab. This feature allows users to add or remove sewer mains from a previously created FF WO.

Select a pending FF WO to edit and then click “Manage Work Order.” 

- Mange WO
  - If you want to add / remove lines to a work order, do it here
  - Add Assets
  - Can cancel changes

Submit Work Order

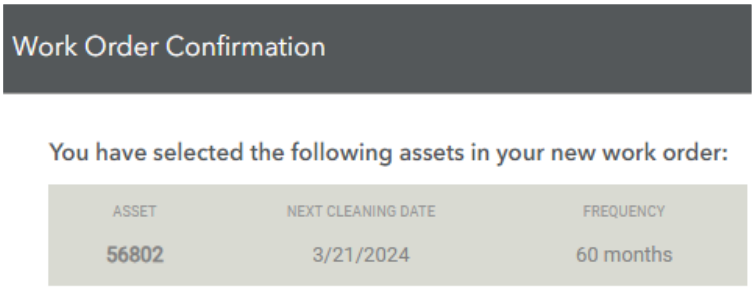
When an FF Work Order is finalized, it needs to be submitted. The submission of FF WOs through the Work Order Review tab causes a Sewer Main Wash WO to be created in CMMS.

From the WO Review tab, select the pending work order which is ready for submittal and then click “Submit Work Order”. 

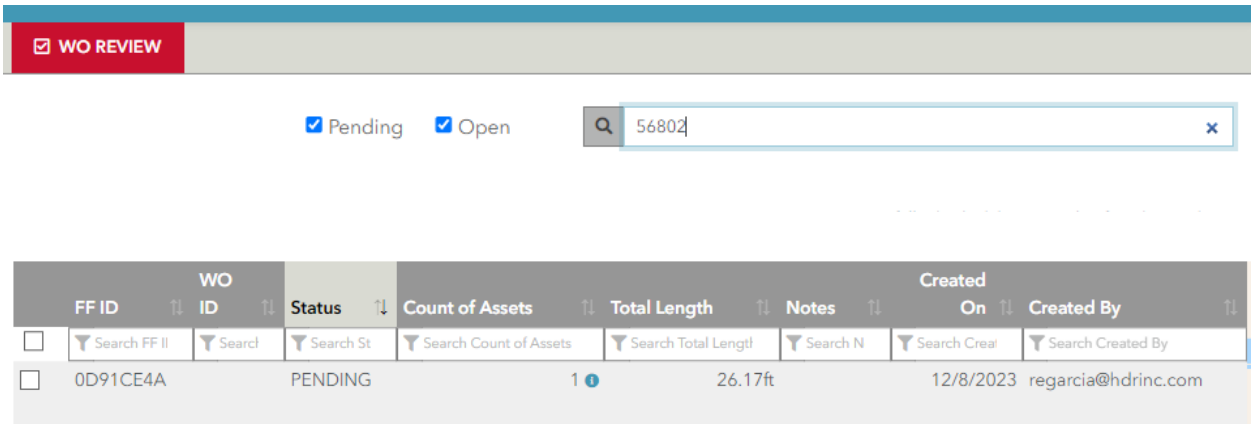
- Submit WO
    - If the WO is ready for CMMS, submit it
    - Be sure to record the FF ID for reference in the WO
    - ONLY HIT SUBMIT 1 TIME
    - Do not refresh the page
        - Once the page loads verify the new work order in CMMS with the correct number of assets
        - Once verified, refresh the page in FF

Work Order Validation

After a work order has been submitted in through the WO Review Tab, the user should verify the corresponding work order has been created in CMMS.

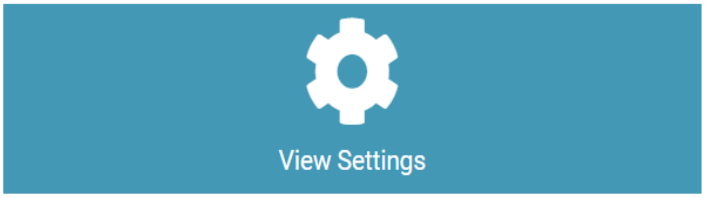


To find the CMMS WO number, the user should enter the FFID of the WO which was just submitted into the search column of the table on the WO Review Tab. If the work order was generated in CMMS, the WO ID column should have populated with the WO number:



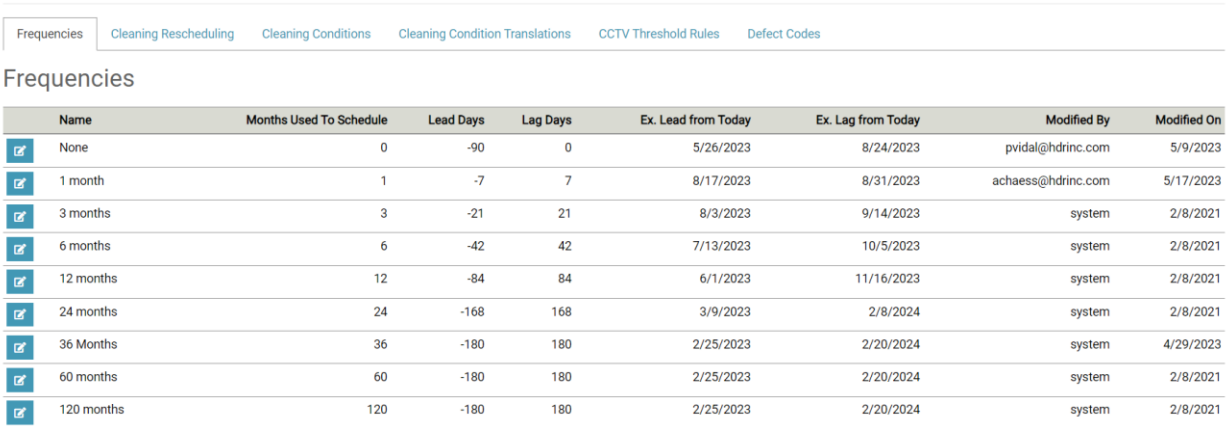
If the WO ID is not present in the table, refresh the page and repeat the process. If the FF ID was not recorded, other attributes like “Total Length” and “Count of Assets” can be used to help find the WO ID. The table on the WO Review Tab places the newest WOs at the bottom of the table.

Settings and Configuration



Frequencies

The Frequencies tab in settings view shows the thresholds set for cleaning schedules. The “Lead Days” displays the number of days needed in advance to schedule a cleaning. The “Lag Days” show the number days are permitted to complete the scheduled cleaning.



Name	Months Used To Schedule	Lead Days	Lag Days	Ex. Lead from Today	Ex. Lag from Today	Modified By	Modified On
None	0	-90	0	5/26/2023	8/24/2023	pvidal@hdrinc.com	5/9/2023
1 month	1	-7	7	8/17/2023	8/31/2023	achaess@hdrinc.com	5/17/2023
3 months	3	-21	21	8/3/2023	9/14/2023	system	2/8/2021
6 months	6	-42	42	7/13/2023	10/5/2023	system	2/8/2021
12 months	12	-84	84	6/1/2023	11/16/2023	system	2/8/2021
24 months	24	-168	168	3/9/2023	2/8/2024	system	2/8/2021
36 Months	36	-180	180	2/25/2023	2/20/2024	system	4/29/2023
60 months	60	-180	180	2/25/2023	2/20/2024	system	2/8/2021
120 months	120	-180	180	2/25/2023	2/20/2024	system	2/8/2021

To update the parameters, select the edit button on the left-most column. Change the desired columns, then select the green save button. Select cancel to discard any changes.

Verify changes have been applied in the chart.

Cleaning Rescheduling

During processing, FreeFlow starts with the oldest inspection and continues through to the latest. As it iterates through these inspections, the system counts the number of "adjacent" findings. In other words, if the findings go (oldest to newest) "light, heavy, heavy", that will count as 2 occurrences of "heavy".

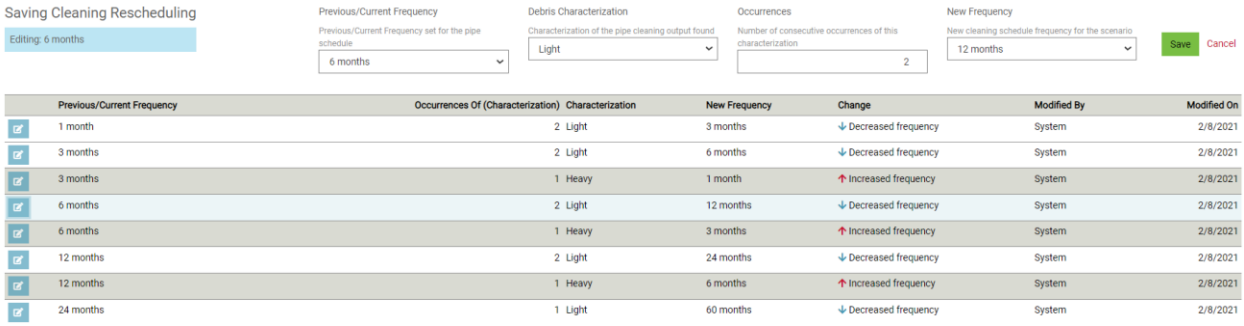
The sequence does matter for this analysis. For example, if the sequence goes (oldest to newest) "light, none", the occurrence count would be 1. This is since the count looks at the previous

inspection's severity and, if the severity is less than or equal to the current severity (for light), the count is increased by one. Otherwise, the count is reset to 1. The opposite is true for "heavy" inspections - if the severity is greater than or equal. This means the counts in Table 1 would be correct:

If a cleaning that is *characterized* as "light" was done early (pre-lead date), the cleaning is discounted, and the occurrence count is reset to 0. Similarly, if a "heavy" cleaning is done late (post-lag date), it is also discounted and resets the count to 0.

Max Observation		Occurrence Count
Light, None, Light	=	2
Clear, Medium, Light	=	1
Medium, None, None, Light	=	3
Medium, None, Light	=	1
Medium, Medium, Heavy, Medium	=	2
Medium, Medium, Medium, Heavy	=	1

To update the parameters, select the edit button on the left-most column. Change the desired columns, then select the green save button. Select cancel to discard any changes.

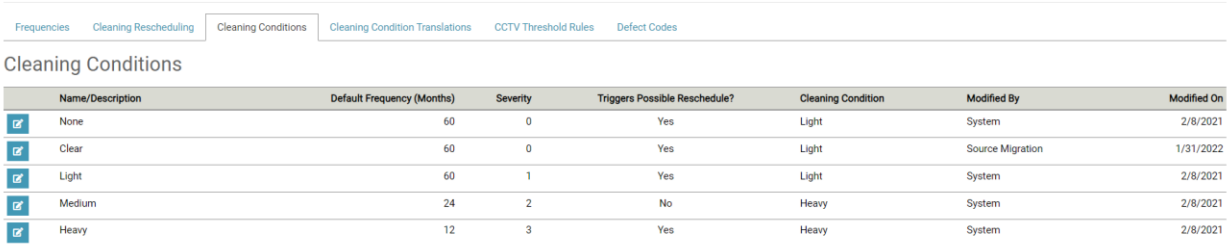


Verify changes have been applied in the chart.

Cleaning Conditions

Defines the window of time that certain cleaning findings are valid, which are used to drive determination on scheduling of future cleanings.

The lines on this chart can be updated but cannot add additional items.



Frequencies | Cleaning Rescheduling | Cleaning Conditions | Cleaning Condition Translations | CCTV Threshold Rules | Defect Codes

Cleaning Conditions

Name/Description	Default Frequency (Months)	Severity	Triggers Possible Reschedule?	Cleaning Condition	Modified By	Modified On
None	60	0	Yes	Light	System	2/8/2021
Clear	60	0	Yes	Light	Source Migration	1/31/2022
Light	60	1	Yes	Light	System	2/8/2021
Medium	24	2	No	Heavy	System	2/8/2021
Heavy	12	3	Yes	Heavy	System	2/8/2021

Cleaning Conditions Translations

When cleaning conditions are imported from the CMMS, the values from the observations must be translated into the FFH2O standards. The table below describes these translations. Allows FFH2O to map the differences.

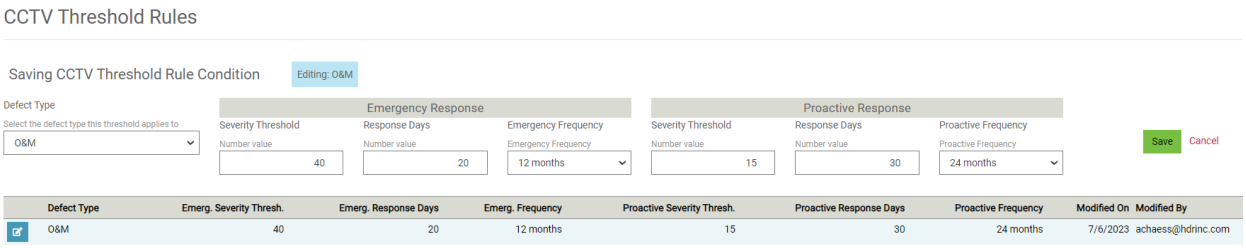
Cleaning Condition Translation

When cleaning conditions are imported from the CMMS, the values from the observations must be translated into the FFH2O standards. The table below describes these translations.

Imported Condition		FFH2O Interpreted Condition
Clear	→ translates to →	Clear
Heavy	→ translates to →	Heavy
Light	→ translates to →	Light
Medium	→ translates to →	Medium
None	→ translates to →	Light
None/Light	→ translates to →	Light

CCTV Threshold Rules

These parameters are set for CCTV type inspections. Emergency response severity threshold is based on percentage blockage.



CCTV Threshold Rules

Saving CCTV Threshold Rule Condition | Editing: O&M

Defect Type: Select the defect type this threshold applies to — O&M

Emergency Response: Severity Threshold (Number value) 40 | Response Days (Number value) 20 | Emergency Frequency (Emergency Frequency) 12 months

Proactive Response: Severity Threshold (Number value) 15 | Response Days (Number value) 30 | Proactive Frequency (Proactive Frequency) 24 months

Save | Cancel

Defect Type	Emerg. Severity Thresh.	Emerg. Response Days	Emerg. Frequency	Proactive Severity Thresh.	Proactive Response Days	Proactive Frequency	Modified On	Modified By
O&M	40	20	12 months	15	30	24 months	7/6/2023	achaess@hdrinc.com

To update the parameters, select the edit button on the left-most column. Change the desired columns, then select the green save button. Select cancel to discard any changes.

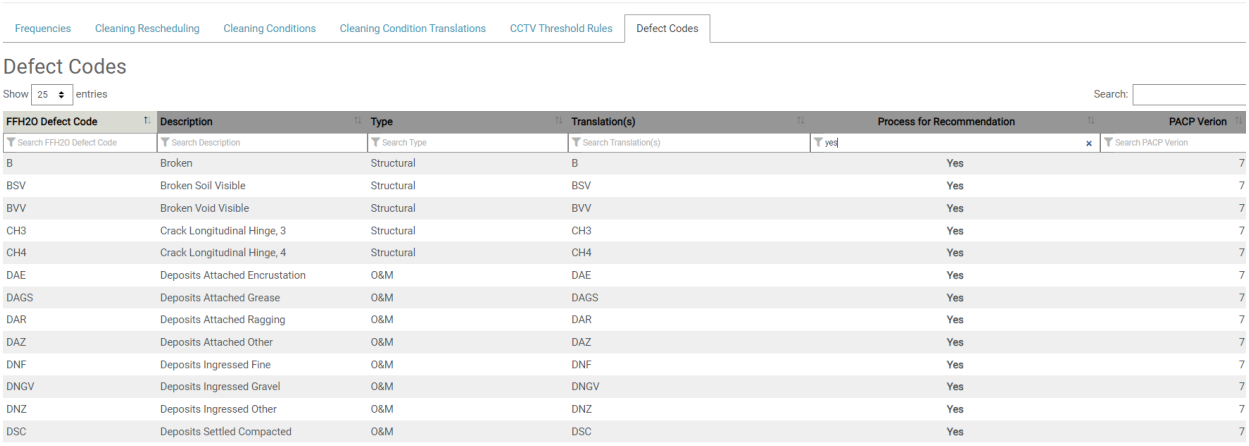
Verify changes have been applied in the chart.

Defect codes

This tab in settings shows the standardization of multiple defect codes in Free Flow that are processed for recommendation and tracking. The table is a read only and users cannot edit or add new codes. Users can search, filter, and sort this table for convenience.

Structural codes – are defects codes where the pipe is damaged or otherwise defective.

Operation & Maintenance codes – are defect codes defining foreign objects that are found in pipes and may interfere with the operation of the conveyance system.



Frequencies | Cleaning Rescheduling | Cleaning Conditions | Cleaning Condition Translations | CCTV Threshold Rules | Defect Codes

Defect Codes

Show 25 entries

Search:

FFH2O Defect Code	Description	Type	Translation(s)	Process for Recommendation	PACP Verion
Search FFH2O Defect Code	Search Description	Search Type	Search Translation(s)	yes	Search PACP Verion
B	Broken	Structural	B	Yes	7
BSV	Broken Soil Visible	Structural	BSV	Yes	7
BVV	Broken Void Visible	Structural	BVV	Yes	7
CH3	Crack Longitudinal Hinge, 3	Structural	CH3	Yes	7
CH4	Crack Longitudinal Hinge, 4	Structural	CH4	Yes	7
DAE	Deposits Attached Encrustation	O&M	DAE	Yes	7
DAGS	Deposits Attached Grease	O&M	DAGS	Yes	7
DAR	Deposits Attached Ragging	O&M	DAR	Yes	7
DAZ	Deposits Attached Other	O&M	DAZ	Yes	7
DNF	Deposits Ingressed Fine	O&M	DNF	Yes	7
DNGV	Deposits Ingressed Gravel	O&M	DNGV	Yes	7
DNZ	Deposits Ingressed Other	O&M	DNZ	Yes	7
DSC	Deposits Settled Compacted	O&M	DSC	Yes	7

Appendix H –
2025 SSMP Change Log

2025 SSMP Change Log

Date	Section	Description of Update(s) Made