Sewer System Management Plan (SSMP)

2025 Update

Waste Discharge ID (WDID) #8SSO20044
Water Board Region 8

REVIEWED AND APPROVED BY:

Stephen Bise, Public Works Director
Legally Responsible Official
City of Fullerton

Sanitary Sewer Collection System
(includes Element Development Plans & Schedules)

Date Signed

PREPARED BY:

FISCHER COMPLIANCE LLC
PRACTICES THAT COMPLY

March 7, 2025

Att: Mr. Stephen Bise, Public Works Director
Legally Responsible Official (LRO)
1580 W. Commonwealth
Fullerton, CA 92833

Dear Mr. Bise,

We are pleased to present the new 2025 Sewer System Management Plan (SSMP) Update developed in partnership with City management. The 2025 Update meets and exceeds compliance with the Reissued WDR (State Water Board, Water Quality Order No. 2022-0103-DWQ, Attachment D-10 and Specifications 5.4). The 2025 SSMP has been completely revised to harmonize with industry standard guidelines and incorporates the latest SSMP Audit findings.

The 2025 SSMP is a declaration of what the City is doing to demonstrate full compliance with the Reissued WDR. Attachment A of the Reissued WDR (page A-4), states "A sewer system management plan is a living document which requires the City to Enrollee develops and implements to effectively manage its sanitary sewer system(s) in accordance with this General Order." This requires the City to periodically review and update the SSMP as necessary until its next required 6-year SSMP Update is completed.

We look forward to assisting the City wherever necessary to fully implementation its new 2025 SSMP Update.

Sincerely,

James Fischer, P.E.
Principal, Fischer Compliance LLC
Credentialed U.S. EPA NPDES Compliance Inspector

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Introduction

The City of Fullerton provided detail, information and institutional insight in preparation to develop this Sewer System Management Plan (SSMP) or "Plan" and received technical assistance from Fischer Compliance LLC and Sam Rose Consulting for meeting and exceeding compliance with the State Water Resources Control Board 2022 General Waste Discharge Requirements, Order WQ 2022-0103-DWQ for Sanitary Sewer Systems, referred to throughout this document as the WDR1. The SSMP has been developed to meet the size, scale, and complexity of the City to serve as a "living document" that will be used as a tool to manage and operate the collection system. Further, the new 2024 Sewer System Management Plan Guidance Manual published by the Bay Area Clean Water Agency (BACWA) was utilized as a model for development of the SSMP to ensure the SSMP harmonizes with the latest available industry standard recommendations for the development and updating of SSMPs.

The City's commitment to meeting or exceeding regulatory requirements, along with their proactive approach to operation and management of the collection system, has served them well, as evidenced by system performance relative to other agencies in the region and the state. The City has experienced only three spills between January 2018 and January 2025.

Figure 1 provides key City spill metrics, including data (8/2/2009 – 3/1/2025) comparing the City's spill record with state and regional system data. The City consistently performs below (better than) both statewide and regional spill rate indices and net spill volumes for all categories of spills from its sanitary sewer collection system.

Collection System Spill Summary

Operational Indices: Fullerton City CS

Spill Rate Indice (spills/100mi/yr)

	Category 1			Category 2		Category 3	
	Main System	Laterals	Other	Main System	Other	Main System	Other
Fullerton City CS	0.09	N/A	0.0	0.0	0.0	0.0	0.0
State Municipal(Public) Average	1.54	N/A	0.71	0.75	1.01	2.46	0.47
Region Municipal Average	0.46	N/A	0.07	0.31	0.82	0.45	0.05

Net Volume Spills Indice (gallons/1000 Capita/yr)

	Category 1			Category 2		Category 3	
	Main System	Laterals	Other	Main System	Other	Main System	Other
Fullerton City CS	0.65	N/A	0.0	0.0	0.0	0.0	0.0
State Municipal(Public) Average	2927.54	N/A	1481.84	300.52	1886.93	55.5	36.29
Region Municipal Average	359.58	N/A	11.49	46.4	127.74	1.2	0.08

Introduction: Figure 1 (Collection System Operational Report – SWRCB Integrated Water Quality System (CIWQS)

1 See Order No. 2022-0103-DWQ

SSMP Organization

This SSMP is organized into 11 core elements following Attachment D of the WDR, with inclusion of applicable Specifications requirements.

Each individual element in the SSMP includes the following technical contents.

1. Requirements – Provides the actual description of applicable requirements in the WDR.
2. Compliance – Describes the City's approach to complying with the WDR requirements.
3. Effectiveness – As measured by Key Performance Indicators (KPIs.)
4. Implementation – Demonstrates how the City will ensure the Plan is being carried out as described.
5. Resilience – Demonstrates the resilience that is addressed in the SSMP and built-in to the City's collection system and procedures.
6. Appendix Inclusions – List the items included in the Appendix for each SSMP Element, if any.

Abbreviations and Acronyms[2]

AGENCY	Agency Name
BMP	Best Management Practices
CCTV	Closed Circuit Television
CIP	Capital Improvement Program
CM	City Manager
CIWQS	California Integrated Water Quality System (State Water Board Online Spill Database)
CMMS	Computerized Maintenance Management System
CITY	City of Fullerton
EPA	US Environmental Protection Agency
FOG	Fats, Oils and Grease
FSE	Food Service Establishment
GCD	Grease Control Device
GIS	Geographic Information System
HFML	High Frequency Maintenance Locations
I & I	Inflow and Infiltration
LRO	Legally Responsible Official
NPDES	National Pollutant Discharge Elimination System
RWQCB	Regional Water Quality Control Board (Lahontan Region)
SCADA	Supervisory Control and Data Acquisition
SERP	Spill Emergency Response Plan
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan
Spill	Sanitary Sewer Overflow
WDR	Sanitary Sewer Systems General Wastewater Discharge Requirements, (Order No. 2022-0103-DWQ)
SWRCB	State Water Resources Control Board
WDID	Waste Discharge ID Number (CIWQS)

Introduction: Table 1 Abbreviations and Acronyms

[2] *For a list of additional common acronyms for collection systems and related WDR terms, see the WDR, Attachment A (page 32)*

1. Goal and Introduction

REQUIREMENTS

Att. D-1 (pg. D-2)

"The goal of the Sewer System Management Plan (Plan) 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 (see below):"

1.1. Regulatory Context

WDR REQUIREMENTS

Att. D-1.1 (pg. D-2)

"The Plan Introduction section providing a general description of the local sewer system management program and discuss Plan implementation and updates".

COMPLIANCE

The City is committed to fully implementing the WDR[3] which includes addressing all requirements by integrating a wide range of programs specifically designed for ensuring the integrity and efficiency of the City's sanitary sewer collection system. Additionally, the City is dedicated to maintaining its collection system in a systematic manner by implementing various work programs, with a focus on critical areas, to prevent spills, allowing for a comprehensive approach to maintenance. Work programs include CCTV inspections, pipe cleaning, manhole inspections and treatment, root control, just to name a few. Work programs are described in more detail in sections Specifications 5.19 Operation and Maintenance of this SSMP.

By prioritizing proactive measures and taking a comprehensive approach, the City is well-equipped to effectively operate its sanitary sewer collection system with the highest levels of service, complying with the WDR, and reducing/eliminating sewage spills.

EFFECTIVENESS

N/A

IMPLEMENTATION PLAN/SCHEDULE

N/A

[3] *Guidance 1.1.2*

1.2. SSMP Update Schedule

WDR REQUIREMENTS

Att. D-1.2 (pg. D-3)

"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."

COMPLIANCE

The City utilizes the State Water Board's online lookup tool for ensuring all required due dates for updating its SSMP and completing its required SSMP Audits (see chart below).

The City's most recent SSMP audit was for the period May 2021 through May 2024.

Notable maintenance milestones include optimization of preventative measures including an 18-month gravity main cleaning cycle and a 60-month CCTV inspection cycle and capital improvement projects/schedules, all of which are monitored continuously throughout the 6-year SSMP update cycle.

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***
Fullerton City CS	8SSO10573	5/2/2009	5/2/2014	5/2/2019	5/2/2025

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****
Fullerton City CS	8SSO10573	5/2/2011	5/2/2013	5/2/2015	5/2/2017	5/2/2019	5/2/2021	5/2/2024

Figure 1-1 Sewer System Management Plan, Subsequent Update and Audit Due Dates

EFFECTIVENESS

Key Performance Indicators:

1. Are SSMP Audits and SSMP Updates being performed as scheduled?
2. Has the Sewer System Management Plan been approved by the governing board on schedule (every six years)?
3. Are specific internally established sewer program milestones being monitored?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			PWD	Mgr.	Sup
1.2.1	Prepare for next SSMP Audit	Begin 5/2/2027	X	X	X
1.2.2	Complete and Upload SSMP audit.	By 11/2/2027	X	X	
1.2.3	Incorporate Audit Findings, update Change Log and Update SSMP	5/2/2025		X	
1.2.4	Board Approval and LRO Certification of SSMP	By 5/2/2025	X	X	

1.3. Sewer System Asset Overview

WDR REQUIREMENTS

Att. D-1.3 (pg. D-3)

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

a. Location, including county(ies).
b. Service area boundary.
c. Population and community served. 111,000
d. System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons.
e. Structures diverting stormwater to the sewer system.
f. Data management systems.
g. Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals.
h. Estimated number or percentage of residential, commercial, and industrial service connections; and
i. Unique service boundary conditions and challenge(s).
j. 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 this Attachment."

COMPLIANCE

The City of Fullerton is in Orange County and provides collection wastewater services to a 22 square mile service area with a total population of 139,461 and serves over 135,000 customers. The City is bordered by the cities of La Habra and Brea to the north, La Mirada to the northwest, Buena Park on the west, Anaheim on the south, and Placentia on the east. The collection system consists of 330 miles of gravity mains ranging from 6-inch to 36-inch in diameter, 36 siphons. Laterals are privately owned. The City does not own/operate any pump stations, force mains or stormwater diversion structures.

The Lucity computerized maintenance management system (CMMS) is used for work orders and maintaining inspection and asset data; POSM is used for sewer pipe CCTV inspections; and ArcGIS (ESRI) for system mapping.

The City does not own any portion of the service lateral, except for City owned buildings connected to the collection system. See Fullerton Municipal Code 12.08.031.

The 2024 Sewer Master Plan indicates the City's service connection classifications, residential, commercial industrial and institutional, are as follows:

Use Type	By Percentage of Total Connections
Residential	68%
Commercial	8%
Institutional	11%
Industrial	13%

Overall, the City has put itself in good position to maintain its collection system. There are few service area challenges. Some easements present challenges because they are in backyards. However, all can be accessed by CCTV and hydro-cleaning equipment. During heavy rain events, access to some easement roads/manholes can sometimes be limited for short periods. This is mitigated by performing necessary maintenance in the fall to help ensure proper performance throughout the rainy season.

System maps, include gravity mains, manholes, lift stations, siphons and other collection system features and are complete, accurate, up-to-date and available to staff. Refer to Section 4.1 Updated Map of Sanitary Sewer System for more detail.

EFFECTIVENESS

Key Performance Indicators:

- Are asset statistics periodically reviewed and updated as necessary?
- Are omissions or errors addressed in a timely manner?
- Are system maps up to date?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			PWD	Mgr.	Sup
1.3.1	Review City-owned asset statistics and element description; update as necessary	At the beginning of the audit cycle and when significant changes have been made.		X	X
1.3.2	Update Maps	Within 30 Days of Correction Submittal of Completion of Development Project		X	

RESILIENCE

Resilience is addressed for Element 1 by:

- Adhering to an SOP for collecting and managing asset data.
- Redundancy: More than one member of staff is trained and able to retrieve and manage the data.
- Implementing a QA/QC process to help ensure information is accurate.
- Using Calendar Reminders to ensure compliance deadlines are met.

APPENDIX 1 INCLUSIONS:

- None

Specifications 5.2 – SSMP Development and Implementation

WDR REQUIREMENTS

Spec. 5.2 (pg. 18)

"To facilitate adequate local funding and management of its sanitary sewer system(s), the City shall develop and implement an updated Sewer System Management Plan. The scale and complexity of the Sewer System Management Plan, and specific elements of The SSMP, must match the size, scale, and complexity of the Enrollee's sanitary sewer system(s). The Sewer System Management Plan must address, at minimum, the required Plan elements in Attachment D (Sewer System Management Plan – Required Elements) of this General Order. To be effective, the Sewer System Management Plan must include procedures for the management, operation, and maintenance of the sanitary sewer system(s). The procedures must: (1) incorporate the prioritization of system repairs and maintenance to proactively prevent spills, and (2) address the implementation of current standard industry practices through available equipment, technologies, and strategies."

COMPLIANCE

The City's current Sewer System Management Plan (SSMP) has been updated to meet the requirements of Order WQ 2022-0103-DWQ and addresses the required Elements. The SSMP addresses management, operations and maintenance procedures specific to the City's collection system. The City maintains a proactive O&M program to operate its system and identify defects, which are then prioritized for repair, replacement, rehabilitation, or placed on modified maintenance schedules. (See Elements 4, 8 and Specifications 5.19 of this SSMP for more detail.)

The City keeps up with current industry standards, technology and best practices by reviewing industry periodicals, networking and attending industry conferences, seminars and workshops.

Specifications 5.7 – Allocation of Resources

WDR REQUIREMENTS

Spec. 5.7 (pg. 22)

"The City shall comply with the following requirements:

- *Establish and maintain a means to manage all necessary revenues and expenditures related to the sanitary sewer system; and*
- *Allocate the necessary resources to its sewer system management program for: (a) compliance with this General Order, (b) full implementation of its updated SSMP, (c) system operation, maintenance, and repair, and (d) spill responses."*

COMPLIANCE

The City maintains financial stability and meets its operational needs for managing its sewer system.

The City's Sewer Service Fee is based on the actual water usage of each Fullerton resident and business. The fee will cover the costs for operation and maintenance, compliance with regulatory agency requirements, capital improvement and replacement of the sewer system. All revenue collected from the sewer fee is placed in the Sewer Enterprise Fund. Sewer Enterprise Fund revenues can only be spent on sewer related maintenance, operations and capital improvements.

The City is adequately staffed and owns and operates the necessary equipment to effectively maintain its collection system.

Provisions 6.1 - Enforcement Provisions

WDR REQUIREMENTS

Provisions 6.1 (pg. 27)

"The following enforcement provisions are based on existing federal and state regulations, laws and policies, including the federal Clean Water Act, the state Water Code and the State Water Board Enforcement Policy."

COMPLIANCE

The City is aware of the consequences for noncompliance including associated penalties for violations. The City maintains a proactive stance with full implementation of its SSMP.

Noncompliance with requirements of this General Order or discharging sewage without enrolling in this General Order constitutes a violation of the Water Code and a potential violation of the Clean Water Act and is grounds for an enforcement action by the State Water Board or the applicable Regional Water Board. Failure to comply with the notification, monitoring, inspection, entry, reporting, and recordkeeping requirements may subject the Enrollee to administrative civil liabilities of up to $10,000 a day per violation pursuant to Water Code section 13385; up to $1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement. Discharging waste not in compliance with the requirements of this General Order or the Clean Water Act may subject the Enrollee to administrative civil liabilities up to $10,000 a day per violation and additional liability up to $10 per gallon of discharge not cleaned up after the first 1,000 gallons of discharge; up to $5,000 a day per violation pursuant to Water Code section 13350 or up to $20 per gallon of waste discharged; or referral to the Attorney General for judicial civil enforcement.

Provisions 6.3 Sewer System Management Plan Availability

WDR REQUIREMENTS

Provisions 6.3

"The Enrollee's updated Sewer System Management Plan must be maintained for public inspection at the Enrollee's offices and facilities and must be available to the public through CIWQS and/or on the Enrollee's website, in accordance with section 3.8 (Sewer System Management Plan Reporting Requirements) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order."

COMPLIANCE

The City publishes its SSMP, available for public review, on its website and also maintains a paper copy in its offices which can be made available for inspection during regular business hours.

2. Organization

WDR REQUIREMENTS

Att. D-2 (pg. D-3)

"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:

- *The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order.*
- *The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan Elements.*
- *Organizational lines of authority.*
- *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.)*

COMPLIANCE

The above items are addressed in the order below:

Stephen Bise and Anthony Reynoso are designated as the City's Legally Responsible Officials. Both meet the requirements set forth in Specifications 5.1 of the re-issued Order (WQ-2022 0103-DWQ).

- Stephen Bise, Public Works Director, oversees all aspects of Public Works.
- Anthony Reynoso, Streets and Sewer Manager, has over 30 years of collection systems operations experience, and oversees the day-to-day maintenance and operations activities.

IMPLEMENTATION RESPONSIBILITIES

Sewer System Management Plan Elements	Responsible Position
1. SSMP Plan, Goal and Introduction	Streets and Sewer Manager
1.1. Regulatory Context	Streets and Sewer Manager
1.2. SSMP Update Schedule	Streets and Sewer Manager
1.3. Sewer System Asset Overview	Streets and Sewer Manager
2. Organization	Director of Public Works
3. Legal Authority	Council
4. Operations and Maintenance Program	
4.1. Updated maps of Sanitary Sewer System	Asset Management Coordinator
4.2. Preventive Operation & Maintenance	Streets and Sewer Manager
4.3. Training	Streets and Sewer Manager
4.4. Equipment Inventory	Streets and Sewer Manager
5. Design/Performance	
5.1. Updated Design Criteria & Construction Standards	City Engineer/Asst. Public Works Director
5.2. Procedures and Standards	Streets and Sewer Manager
6. Spill Emergency Response Plan	Streets and Sewer Manager
7. Sewer Pipe Blockage Program	Streets and Sewer Manager
8. System Eval, Capacity Assurance, Capital Imp.	
8.1. System Evaluation and Condition Assessment	Streets and Sewer Manager
8.2. Capacity Assessment and Design Criteria	City Engineer/Asst. Public Works Director
8.3. Prioritization of Corrective Action	Streets and Sewer Manager
8.4. Capital Improvement Plan	City Engineer/Asst. Public Works Director
9. Monitoring, Measuring & Program Modifications	Streets and Sewer Manager
10. Internal Audits	Streets and Sewer Manager
11. Communication Program	Streets and Sewer Manager

Table 2-1 Implementation Responsibilities

RESPONSIBLE POSITION CONTACT INFORMATION

Responsible Position Contact Information	Phone	Email
Stephen Bise - Public Works Director	714-738-6852	Stephen.Bise@cityoffullerton.com
Anthony Reynoso – Streets and Sewer Manager	714-738-2802	Tony.Reynoso@cityoffullerton.com
Benjamin Perez – Sewer Supervisor	714-738-2810	Benjamin.Perez@cityoffullerton.com
David Grantham – City Engineer	714-738-6853	David.Grantham@cityoffullerton.com

Table 2-2: Responsible Position Contact Information

Organizational Lines of Authority

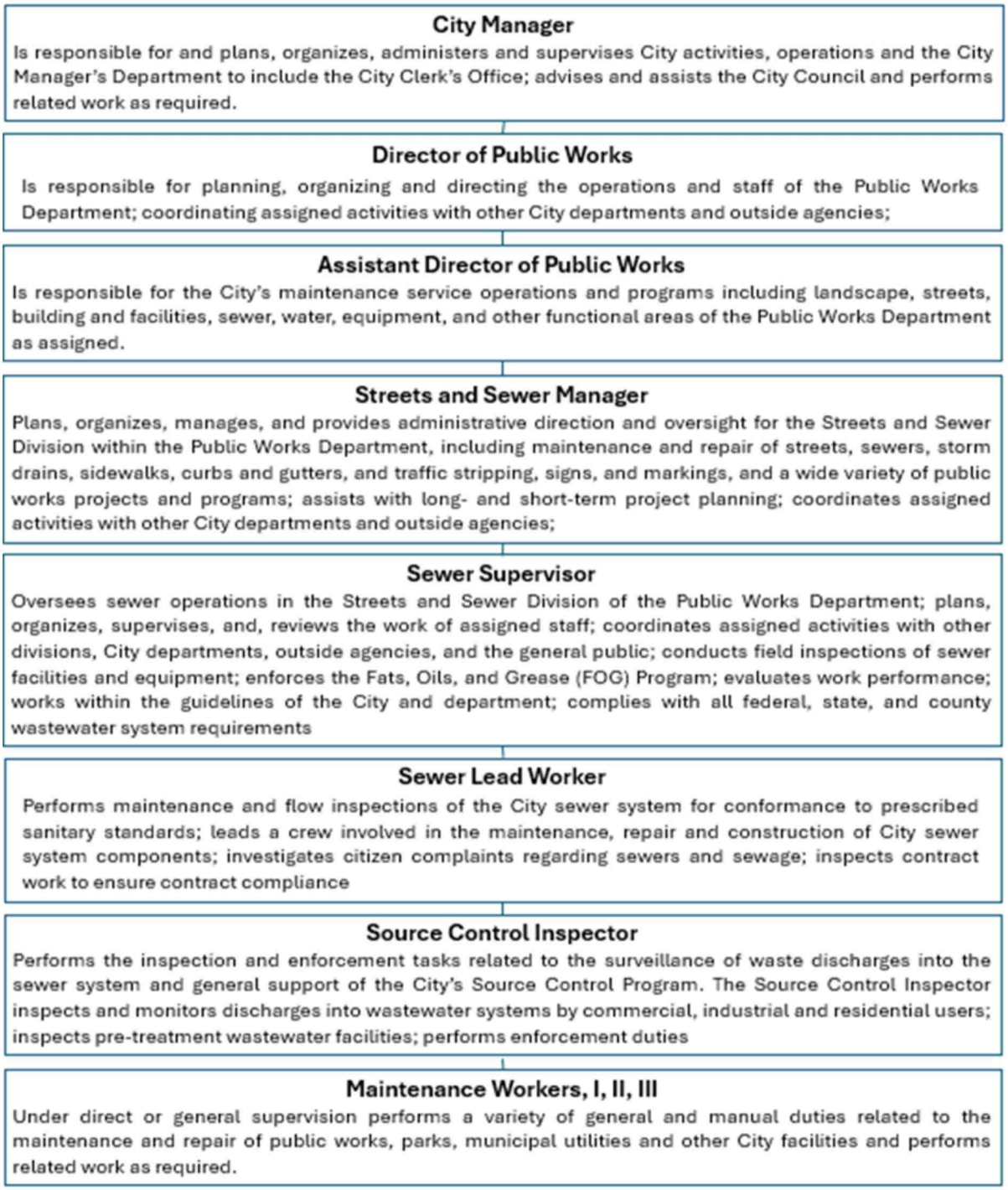


Figure 2-1 Organizational Lines of Authority

Abbreviated Organizational Chart

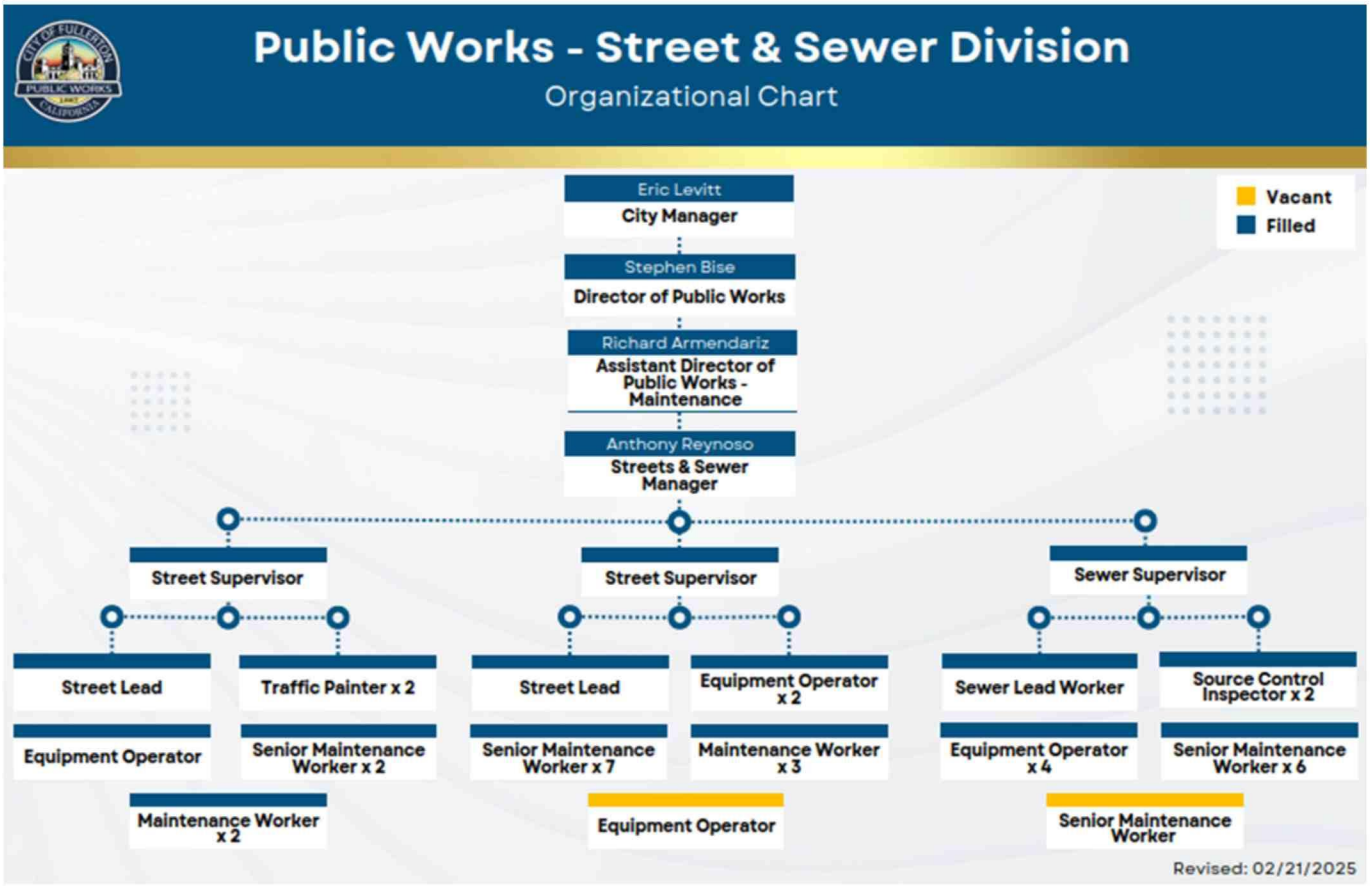


Figure 2-2 Abbreviated Organization Chart

Chain of Communication for Reporting Spills

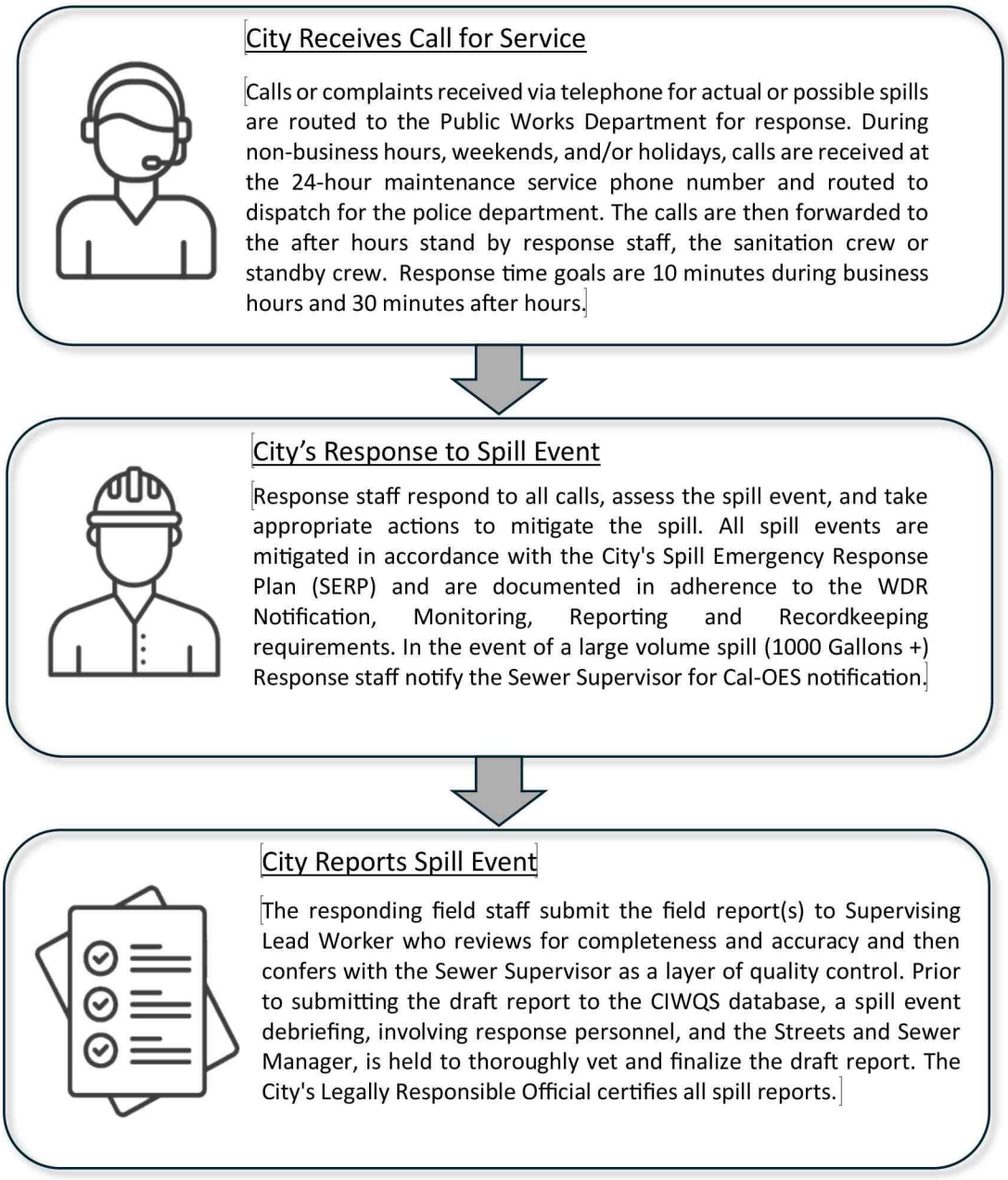


Figure 2-3 Chain of Communication for Reporting Spills

EFFECTIVENESS

Key Performance Indicators:

1. Have there been any changes requiring updates to the Organizational Chart?
2. Have there been instances when a service call for a spill was not properly routed to response personnel?
3. Were all spill response activities documented and forwarded to the LRO?
4. Have there been any changes in assigned responsibilities for implementing the Sewer System Management Plan?
5. Is there a process in place to ensure all contact information remains up to date?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Sup
2.1	Review names, contact information and position responsibilities. Update as necessary.	Semi-Annually		X	X
2.2	Review Chain of Communication outcomes for all spill responses	Each Spill Event		X	X
2.3	Review Organizational Chart for any changes. Update as necessary.	Semi-Annually		X	X

RESILIENCE

Resilience is addressed for Element 2 by:

- Ensuring that more than one person is capable and responsible for specific duties for the Sewer System Management Plan implementation, e.g., back-up personnel.
- Designation of more than one LRO to help ensure full and continuous coverage of duties.
- Testing the phone notification system to ensure calls are received and routed to appropriate personnel.

APPENDIX 2 INCLUSIONS:

- None

3. Legal Authority

WDR REQUIREMENTS

Att. D-3 (pg. D-4)

"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:

a. 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.
b. 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.
c. Require that sewer system components and connections be properly designed and constructed.
d. Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee.
e. Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and
f. Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

COMPLIANCE

The above items are addressed in order below:

a. Authority to Prevent Illicit Discharges into City's Wastewater Collection System

   Illicit discharges include, but are not limited to, the release of I/I, storm water, chemical dumping, unauthorized debris and constituents, and grease.

   Municipal Code 12.08.070, Sewer Connections, requires that all new connections to the public sewer system be tested specifically for potential infiltration. The testing is performed in accordance with the standards set forth in the latest edition of the Greenbook.

   Municipal Code 12.08.110, Deposit in Sewer Restricted, of Title 12, includes a general description of the various types of substances restricted from being directly or indirectly discharged into the collection system. The restrictions are applicable to all users of the City's system except as permitted by other city ordinances and the OCSD regulations.

b. The City's pre-planned collaboration and coordination with storm drain agencies

   The City owns and operates the storm drain system within the City Limits. Both the sewer and storm drain facilities are within the Streets and Sewer Division. Should sewage discharge to a storm drain facility, City staff has full authority mitigate the impact of the spill.

c. Require that sewer system components and connections be properly designed and constructed.

   Municipal Code 12.08.070 requires that any construction or reconstruction of a lateral sewer service line that is to be connected to the public sewer system within the public streets, alleys,

easements and public rights-of way of the City shall conform to the construction standards set forth in the applicable chapters in Title 16, Subdivisions. 16.05.080

Municipal Code 12.08.120, Sewer Design, requires that all sewer mains, laterals, manholes, and other appurtenances be designed, constructed, and inspected in accordance to the applicable chapters in of the City of Fullerton Municipal Code, including Title 16, Subdivisions, the City of Fullerton standard drawings, the latest edition of the Greenbook, or as approved by the City Engineer.

Municipal Code 16.05.020, City Standards, requires that all public improvements, construction and dedications required and described in Title 16, Subdivisions, conform to the latest editions of the State of California, Department of Transportation "Standard Specifications" and the American Public Works Association "Standard Specifications for Public Works Construction." The chapter also provides ultimate authority to the City Engineer to amend and change such standards and specifications as deemed in the best interest of the public.

Municipal Code 16.05.040, Public Improvements for Sewerage Facilities, requires that sewer mains, manholes, and appurtenances being constructed to serve a subdivision, lot, parcel, building or structure be constructed as approved by the City Engineer and as required in City's Master Sewerage Plan or any applicable element of the City's General Plan.

Municipal Code 16.05.080, Improvement Plans, Drawings and Related Items, includes the requirements for preparing profiles, descriptions, studies, calculations, notes, surveys and drawings for private and public improvement plans and as required by the City Engineer.

Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee.

The Municipal code does not expressly document access requirements for maintenance, inspection, or repair of the wastewater collection system. Instead, accessibility requirements are managed through the plan reviews for new sewer service where City staff can ensure that sewer system facilities are constructed to specific standards within the public right-of-way or within adequate permanent easements. The following includes a summary of municipal codes.

Municipal Code 12.08, Sewer Connections, stipulates the responsibility to properly maintain and repair the sewer lateral that extends from a building on a property to its point of connection with the main sewer, is the responsibility of the property owner or user. The code allows the City to perform maintenance, repair and upkeep on the portion of the lateral sewer located within the public right-of-way in the event the Director of Public Works determines that to do so would mitigate City liability.

Municipal 16.05.070, Inspection of Public Improvements, provides City staff the authority to access the improvements during construction and/or rehabilitation for the purpose of examining and inspecting the construction or condition of the sewer system to ensure compliance with the City standards. This provides ultimate authority to the City Engineer or designated staff to determine whether the improvements comply with City standards and requirements.

The City requires projects to be accompanied with project plan and profile drawings in compliance with Municipal Code 16.05.080. The materials and methods of construction are reviewed and certified by a design engineer to ensure the facilities will perform properly, provide the appropriate service to City, and meet or exceed industry standards. Additionally, all new sewer systems are required to be inspected using Closed Circuit Television (CCTV) by a Construction Inspector and a Maintenance Services Sewer Utility staff person or an acceptable CCTV/Sewer Maintenance Contractor.

Chapter 16.07, Public Works Permits, implies that the City may have some accessibility rights in that it provides the ultimate authority to the City Engineer to issue a permit before a sewer line may be constructed. As such, the City Engineer can ensure that the new sewer lines are accessible. Since this is not an explicit requirement, and it is based on the City Engineer's best engineering abilities, not all new sewer pipes may be designed with proper access to the facilities for maintenance, repair, replacement and/or rehabilitation purposes. Additionally, City crews and authorized representatives may not have the right to access existing City sewer lines located on private property. As such, adding s specific code section or chapter or adopting an ordinance that governs accessibility for maintenance, inspection, and repair efforts will provide the appropriate legal authority for City crews to access the sewer facilities.

d. Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures

The authority for the City to enforce penalties for violations of the City's codes, ordinances, and other adopted policies specific to the wastewater collection system is not explicitly described in the municipal codes. However, it includes a description of the general penalties for violating sections of the code and for continued violations. Individuals convicted of violating a City ordinance or provision may be charged with either an infraction or misdemeanor unless the penalty for violation is specifically stated within the ordinance. Individuals convicted of a violation of the City code that is not specifically declared to be an infraction shall be considered guilty of a misdemeanor and punished with a fine of not more than $1,000 or imprisonment for a term not exceeding 6 months in the Orange County Jail, or by both such fine and imprisonment.

Municipal Code 1.10, Administrative Citations, provides the City the authority to use Administrative Citations, including imposition of administrative fines or penalties as an option to address violations and encourage voluntary and complete compliance with the provisions of the code for the protection and benefit of the community.

Subsection 130 of Municipal Coder 12.08, Penalties, summarizes the general penalties for violating the conditions of Chapter 12, Sewer Connections. The code specifically states that any person who violates any provision or fails to comply with any requirement of the chapter is guilty of a misdemeanor and may be punished by a fine of not more than $1,000 or imprisonment for a term not to exceed 6 months in the Orange County Jail, or both. The City Attorney has the discretion to charge a violation as an infraction while the City shall have the discretion of issuing an administrative citation for violations of the chapter.

Violation enforcement provisions for the FOG Control Program are contained in Municipal Code 12.20.300 through 12.20.400. The subsections include a description of the general penalties for violating various provisions of the chapter and for continued violations. It serves to govern the discharges into the City's system by FSEs. The code provides the FOG Control Program Manager the authority to issue a notice of violation, permit suspension or revocation and/or establish a Compliance Schedule Agreement.

Municipal Code 12.20.390, Civil Penalties, allows the City to require reimbursement for any payment of fines or penalties issued by regulatory or enforcement agencies based on a violation of law, regulation or its permits. Said violation can be established by the City as caused by the discharge by a user of the City's wastewater collection system and that is in violation of any provision of the City's FOG ordinance or permit. Additionally, the code allows the City to issue Administrative Civil Penalties for violation of any provision of the chapter, permit conditions, and/or suspension or revocation order.

Section 12.20.400, Criminal Penalties, describes that any person who violates any provision of the chapter is guilty of a misdemeanor and is punishable by a fine up to $1,000 or imprisonment for up to 6 months, or both.

e. Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

   Municipal Code 16.05.100 addresses easement requirements for public facilities.

EFFECTIVENESS

Key Performance Indicators:

1. Are the City ordinances and standards adequate for fulfilling the Sewer System Management Plan legal requirements?
2. Does the City have a process in place for periodic review and evaluation of ordinances?
3. Have there been instances when the code or ordinance did not address a need or circumstance?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Sup
3.1	Review Ordinance to confirm all documents provide necessary required legal authority.	Once per 6-year SSMP Update Cycle	X	X	
3.2	Confer with storm drain owners to ensure current practices and contact information are up to date.	Annually		X	
3.3	Monitor and Document occasions when ordinance(s) failed to address issues as intended.	Continuously	X	X	X

RESILIENCE

Resilience is addressed for Element 3 by:

- Keeping abreast of industry trends and local ordinances that may affect operations.

APPENDIX 3 INCLUSIONS:

- None

4. Operation and Maintenance Program

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

4.1. Updated Map of Sewer System

WDR REQUIREMENTS

Att. D-4 (pg. D-4)

"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."

COMPLIANCE

Once capital or new development projects are completed, information obtained from the project specific as-built drawings is used to update the City's GIS. Information including installation date, pipe size, pipe material, manhole location, and any additional pertinent project information is included into GIS and used to update the City's wastewater collection system maps. Additionally, as pipelines are removed or abandoned, the information is archived in the GIS system.

Necessary revisions and/or updates to the GIS information that are identified by the maintenance crews while performing routine operation and maintenance activities are documented for incorporation into the City's GIS. Map updates are made on a continuous basis. Where discrepancies are identified by field crews during the routine maintenance inspections, actual field conditions are documented on the Sewer Maintenance Observation Report. Findings are verified by supervisory personnel before being forwarded to the Asset Manager Coordinator for incorporation into the City's GIS.

EFFECTIVENESS

Key Performance Indicators:

- Were all map updates completed in a timely manner?
- Are all staff trained in the procedure for providing map update information?
- Are newly installed sewer assets incorporated into the system maps?
- Are there terrain features or assets that should be incorporated in future map updates (e.g. exposed pipe, siphons, ARVs, surface water, etc.)?

IMPLEMENTATION PLAN/SCHEDULE

No	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Sup
4.1.1	Review map update procedures with all affected staff.	Annually		X	X
4.1.2	Review/ensure all newly installed facilities have been updated and included in the system maps	Annually		X	X

4.2. Preventive Operation and Maintenance Activities

WDR REQUIREMENTS

Att. D-4 (pgs. D-4/D-5)

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.

COMPLIANCE

The purpose of a work order system is to program and track all required inspection and maintenance activities within the collection system to help proactively prevent blockages/operational problems or spills. The City utilizes the Lucity Computerized Maintenance Management System (CMMS), which allows the City to make informed decisions regarding its assets and infrastructure by using the collected data from field work orders and documented inspections.

The City's CMMS maintains historical data for all maintenance activities and provides a basis for critical analysis and data-driven planning and decision-making today and into the future. This allows for prioritizing and planning routine activities such as CCTV inspections, manhole inspections, pipe repair, and pipe cleaning. In addition, the CMMS is used to plan and schedule higher-frequency inspection and maintenance activities such as Hot Spot cleaning and root control activities. Emergency and other reactive activities are documented in work orders as well.

The City Engineering Division maintains the GIS data that facilitates management of O&M activities, expedites data management and retrieval for scheduling, tracking, reporting, and mapping purposes. Additionally, GIS allows the City to implement an asset management program to facilitate planning and funding for CIPs.

The scheduling system allows staff to put certain activities on a preventive schedule where the CMMS automatically generates work orders on a prescribed interval. Work orders for other activities are generated by supervisory personnel on an as-needed basis.

EFFECTIVENESS

Key Performance Indicators:

- Is the agency's maintenance, operations, engineering work orders periodically audited for accuracy and completeness?
- Does the agency monitor "open," "overdue," or "not yet completed" work orders to ensure completion of tasks?
- Are inspection and maintenance activities reducing the number and volume of spills?
- Is maintenance work being completed as scheduled?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Sup
4.2.1	Monitor "Past Due" work orders to ensure critical work is being completed	Quarterly		X	X
4.2.2	Review scheduled PMs to ensure the prescribed schedule remains appropriate.	Annually		X	X

4.3. Training

WDR REQUIREMENTS

Att. D-4 (pg. D-5)

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.*

COMPLIANCE

Prior to performing any work on City Facilities, City Sewer Maintenance staff are trained on the existence and provisions of the wastewater operations and maintenance policies, procedures, safety policies, and the equipment used. Training for operation of City equipment includes "on-the-job" training in conjunction with bi-weekly "tailgate" meetings to discuss safety issues. For regular meetings, topics are selected and presented. Generally, monthly meetings are conducted by the supervisors on topics selected by the supervisors and are typically relevant to recent activities and/or events and safety issues. As well, staff attends regional meetings on pertinent topics.

Staff involved in responding to customer service calls, including sewage spills, receive annual training on the City's Spill Emergency Response Plan and the SSMP. This training is part classroom and part hands-on exercises and drills for responding to spill events, including volume estimations and spill start time estimations.

Staff designated as Data Submitters are trained on the City's procedures for reporting spills from receipt of call to draft report submittals and certification.

The City has developed spill response procedures for Contract Service personnel who perform work for the City are required to:

- Immediately notify the City of any sewage spill they encounter.
- Make attempts to contain the spill
- Cordon off the area to keep the public safe
- Remain onsite until AGENCY staff arrives and relieves them.

This language is included in service agreements and discussed during pre-job meetings.

EFFECTIVENESS

Key Performance Indicators:

- Has all training been completed as scheduled?
- Have records of training and attendance been documented and maintained?
- Have all staff demonstrated ability and knowledge after each training event?
- Have contractors received, at a minimum, direction for reporting and responding to spills.

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Sup
4.3.1	Review training documentation to ensure all staff have received required training	Quarterly		X	X
4.3.2	Review agreements with contractors and/or Pre-Job meeting minutes to ensure contract personnel have received instruction for responding to sewage spills	Each Contract		X	X

4.4. Equipment Inventory

WDR REQUIREMENTS

Att. D-4 (pg. D-5)

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

COMPLIANCE

The Sewer Public Works Division maintains an inventory of vehicles and sanitary sewer repair and replacement parts that are maintained in the City's corporation yard. The inventory of vehicles includes the vehicle type currently utilized to perform the necessary operation and maintenance activities of the City's wastewater collection system. Each cleaning trucks is equipped with a fresh supply of high-pressure hose including a supply of repair couplings.

The vehicles and replacement parts are made readily accessible to maintenance staff. The replacement parts maintained in the City yard generally consist of parts necessary for specific types of repairs performed by maintenance staff. Additionally, the City maintains a resource list of contractors and vendors who stock materials and are available for emergency and short notice deliveries. The inventory of repair and replacement parts includes a summary of part size and type and a description and application of its use. The materials and parts inventories have been integrated into the City's CMMS and maintenance services database.

The City's Sewer Division maintains a small supply of VCP pipe and associated materials in stock for performing pipe repairs on their system. Typically, pipe materials include approximately 24 feet of 4, 6, 8, 10, and 12-inch VCP. A supply of couplings and bands are also maintained. These are identified as critical spare parts.

Manhole frames and lids are kept in stock to facilitate quick repairs if necessary. As the City's wastewater collection system does not include lift or pump stations, related items are not maintained in reserves. Other or additional materials identified as necessary are easily obtainable on an as needed basis.

EFFECTIVENESS

Key Performance Indicators:

- Have inventory lists been audited as scheduled?
- Have any inventory deficiencies or omissions been discovered and rectified?
- Has the agency experienced any equipment failure that inhibited a spill response?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Sup
4.4.1	Audit inventory lists to ensure stock is adequate	Annually		X	X
4.4.2	Check with vendors to ensure critical parts lead times are as expected.	Annually		X	X
4.2.3	Ensure contracts with emergency support services are current	Annually			X

RESILIENCE

Resilience is addressed for Element 4 by:

- Developing an SOP for updating maps when errors are discovered.
- Developing and using forms (paper or electronic) for data collection to help ensure all pertinent information is consistently collected.
- Periodically evaluating inspection cycle intervals to help ensure they are optimized.
- Requiring staff to demonstrate ability and/or knowledge for all training activities.
- Monitoring equipment and critical spare parts usage for and trends.
- Performing periodic audits of the Vehicle and Equipment Inventory List.

APPENDIX 4 INCLUSIONS:

- None

Specifications 5.19 - Operations and Maintenance

WDR REQUIREMENTS

Spec. 5.19 (pg. 27)

To prevent discharges to the environment, the Enrollee shall maintain in good working order, and operate as designed, any facility or treatment and control system designed to contain sewage and convey it to a treatment plant.

COMPLIANCE

The City has a very effective preventive maintenance program that maintains the integrity of the sewer system and ensures continuous and safe conveyance of wastewater, resulting in a reduced frequency, number, and volume of spills. The City's preventive maintenance program has evolved into a very proactive program that is designed to locate, identify, and address problems that may exist in the collection system prior to the occurrence of a failure in the system. It is efficient by establishing, where possible, standard cleaning cycles in predetermined geographic areas. By creating large work orders bound within a single geographic area, high productivity is achieved by reducing travel time and utilizing the same work crews for continuity. It should be noted that the City's maintenance program is never static and continues to be re-examined to improve its efficiency and effectiveness.

The prioritization and scheduling of the City's preventive maintenance program is enhanced by the capabilities of Lucity, which is used to electronically store, track, and manage all operations and maintenance activities pertaining to the collection system. Maintenance history information, asset information, service call data, cleaning schedules, and closed-circuit television (CCTV) data are all kept and managed through the Lucity database. The linking of the City's GIS and Lucity database is a powerful feature for field use and provides office staff the ability to graphically represent or tabulate any collection system asset or historical maintenance data to help facilitate its analysis. The primary components of the sewer system receiving preventive maintenance include main lines, lower laterals, and manholes. The City's preventive maintenance program for each component is described below through a discussion of specific maintenance routines, cleaning methods, and service call response procedures.

Hydraulic Cleaning

The City's Public Works Sewer Division staff conducts the routine cleaning of the entire wastewater collection system once every 18 months. The City's wastewater collection system is divided into three districts and 52 sub-basins. Using the three (3) combination hydro-vacuum trucks, the cleaning efforts are focused on cleaning each district concurrently. Each sub-basin in each of the districts is cleaned in the direction of flow to convergence locations.

Three crews consisting of two staff members each are assigned to perform daily routine cleaning task. Cleaning efforts are documented daily. Documentation includes:

- Street name in which the facility is located
- Lineal footage cleaned
- Beginning and ending manhole
- Documented pipe length
- Type and quantity of debris removed
- Names of staff performing the cleaning, and
- Any additional pertinent comments

Once the cleaning of a basin is completed, information pertaining to the cleaning activities and dates are entered into the GIS system for each specific pipeline.

High Frequency Maintenance Locations (HFMLs)

The City has identified locations within the collection system as HFML's. The City's preventative maintenance program includes cleaning of the HFMLs on a regularly scheduled basis. Generally, the HFMLs are referred to as "special projects" are cleaned on a scheduled 1, 3, 6, or 12-month interval. These locations include the City's siphons, pipelines with sags and capacity constraints, and areas identified as having excessive amounts of grease accumulation and/or root concentrations.

Cleanout Lateral Program

The City's Cleanout Lateral Program is available to assist residents with root blockages that are caused in developed areas with large mature trees. The program is limited to residential properties and requires an initial evaluation of the property to be performed to determine if the property qualifies for the program. The evaluation includes:

- confirmation of an existing 4-inch sweep type of clean-out in the front of the property for sewer access,
- verification of tree root problems through video inspection by City crews, and
- verification that no private trees are near the sewer line.

City crews use portable CCTV equipment to inspect laterals and confirm the tree roots are the source of the problem and verify the roots originate from a City owned tree. Where it is determined a City tree is the source of the problem, City crews use mechanical rodding equipment to cut and remove the roots. Upon completing the clearing of the pipeline, crews record the location and footage on daily work reports. The service is generally performed annually, and crews are available to respond to emergency blockages. Where it is determined that tree roots are the source causing excessive infrastructure damage at a specific location, the tree may be scheduled for removal.

Root Treatment

A component of the City's cleaning efforts includes using the City's hydro-vac truck to minimize root intrusion that can damage sewers, cause restricted flow in sewer pipelines, and contribute to the potential for spills. Mechanical root cutting is used in areas where tree root intrusion is the primary cause of sewer line restriction and potential blockages. As necessary, the mechanical Hydro-vac truck is used to clear roots from the wastewater collection system.

The City has increased root-cutting efforts as roots have been identified as being a primary cause of spills. According to the City staff, increasing the root cutting efforts has reduced the number and risk of potential blockages due to roots. In addition, the City has an annual contract to treat sewer mains with chemicals that are in difficult access areas or that have excessive root intrusions.

Manhole Inspections

Manholes are routinely inspected by hydro-cleaning crews and the CCTV crew. A top-down inspection is performed, as the covers are removed for maintenance activities The crews use a “Manhole Inspection Report” to document manhole features and overall conditions.

Based on the defects repair, rehabilitation, or replacement of the manhole is prioritized and scheduled. Defective manhole lids are replaced if damaged and as it is typically not cost-effective to repair manhole lids.

Manhole Treatment

To control infestations of insects and root intrusion to maintain adequate access to the wastewater collection system, the system manholes are systematically treated for the removal of roaches and root intrusion. A treatment program is implemented by City staff as determined necessary.

System Inspection and Assessment

The City employs CCTV technology for the inspection of pipelines. With the use of the City’s one CCTV truck, the City performs inspections of select sewer pipelines of the City’s wastewater collection system. The City’s truck is equipped with Pipeline Observation System Management software that is certified by National Association of Sewer Service Companies and complies with the Pipeline Assessment and Certification Program (PACP). The information obtained and recorded from the CCTV inspections is reviewed as assessed by City staff. Permanent records of the inspections are made by capturing still images of defects and other pertinent observations. The City’s CCTV capability extends to various pipe sizes.

Inspections are performed by a two-person crew and are typically performed after the cleaning of the pipelines to be televised. Daily progress is recorded by the inspection crew and utilized for recording, tracking, and reporting purposes. As the necessity to televise a particular location or portion of the wastewater collection system arises, staff assignments are reorganized, and resources are reallocated to accommodate the requirement. Additionally, the CCTV crews perform inspections to routinely monitor the effectiveness of the cleaning efforts crews.

5. Design and Performance Provisions

5.1. Updated Design Criteria/Construction Standards/Specifications

WDR REQUIREMENTS

Att. D-1.1 (pg. D-5)

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.

COMPLIANCE

The City has complete standard specifications and drawings that are maintained by the City Engineering Division, which meet or exceed industry standards. These standards are used for guidance to all developers, design engineers, contractors, and City departments.

The City's current design and performance standards are addressed in its municipal codes and permitting procedures that allow the City to require and enforce the proper design, construction, and connections to the City's collection system, and ensure access to the City sewer pipelines for maintaining, inspecting, and repairing the system. Also referenced are the City of Fullerton standard drawings.

To address the requirements as required by the WDR, the following subsections provide a summary of the applicable procedures that are currently being implemented. Further detailed information of the design and performance standards and guidelines are included in Municipal Code of Title 12, Waters and Sewers, and Title 16 Subdivisions

Design and Construction Standards and Specifications

Requirements for the design and construction of new, rehabilitated, and replaced sewer system facilities, including main, tie-ins, service laterals, cleanout, manholes, and other system appurtenances, are necessary to ensure the proper operation of the sewer system.

Section 12.08.120 Sewer design, of the City's Municipal Code requires that all sewer mains, laterals, manholes, and other appurtenances be designed, constructed, and inspected in accordance with all applicable sections of the Fullerton Municipal Code, Title 16 Subdivisions; the City of Fullerton standard drawings; the latest edition of the Greenbook or as required and approved by the City Engineer.

The City of Fullerton Municipal Code 16.05 Public Improvements, Dedications, Performance Agreements, and Improvement Securities, includes that serve to regulate and control the design and improvement of public works facilities.

The City of Fullerton Municipal Code 16.05.020, requires that all wastewater improvements, construction, rehabilitation, and dedications conform to the standards and specifications of the City and the applicable portions of the latest editions of the Greenbook. The title also grants the City Engineer the authority to amend and change such standards and specifications as deemed to be in the best public interest.

Section 16.05.040 Public improvements, includes the standards and criteria that shall apply for the design and construction of all public improvements required under Title 16. Part I, Sewerage Facilities, of Section 16.05.04 requires that sewer mains, manholes, and appurtenances be constructed to the sizes, lines, grades and design as approved by the City Engineer and as required by any Master Plan of Sewer or element of the General Plan in effect.

Design considerations for wastewater facilities that the City considers non-standards, such as pump or lift stations, force mains, siphons, etc., require prior approval from the City before design can begin.

EFFECTIVENESS

Key Performance Indicators:

- Is plan checking QA/QC processes helping to ensure adherence to the standards?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Eng
5.1.1	Ensure all project plans are approved in accordance with the City's Standard Specifications and Details.	Each Project			X
5.1.2	Verify design standards and hydraulic model previously completed are adequate and consistent with current standards of practice.	2025			X

5.2. Procedures and Standards

WDR REQUIREMENTS

Att. D-1.1 (pg. D-5)

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

COMPLIANCE

Inspecting and Testing

Compliance with the sewer Greenbook requires the contractor performing work on the City's sewer facilities to be responsible for conducting a CCTV inspection for all new and rehabilitated sanitary sewer systems and other appurtenances.

The Greenbook includes procedures and standards for inspecting and testing the installation of sewer mains and related appurtenances and for the rehabilitation and repair of existing sanitary sewer systems. Compliance with the Greenbook specifications requires air tests to be performed in accordance with Section 306-1.1.4. Also, it includes inspection and testing criteria for various pipe materials and installation methods. Section 500-1.2.6 requires the Engineer to review pipeline inspection video submitted by the Contractor to verity the pipeline point repair or replacement when retained for construction and installation of wastewater pipelines and manholes prior to backfilling.

Additionally, Section 16.05.070, Inspection of Public Improvements, requires that all improvements under Title 16 be subject to inspection and testing by the City Engineer or his authorized representatives to ensure compliance with the standards and specifications. The section also requires that reasonable access to the construction and work be provided at all time to obtain full knowledge of the progress, workmanship and character of the material used in the work.

EFFECTIVENESS

Key Performance Indicators:

- Were any design or installation deficiencies found during warranty inspections?
- Are deviations from standard procedures and/or specs, testing, etc., justified and documented?
- Does the City stay abreast of industry design standards and technical advances in the industry?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Eng
5.2.1	Verify inspection procedures are adequate and consistent with current standards of practice	2017 (10-year cycle)			X
5.2.2	Verify design standards and hydraulic model previously completed are adequate and consistent with current standards of practice.	2017 (10-year cycle)			X

RESILIENCE

Resilience is addressed for Element 5 by:

- Staying abreast of industry trends and standards.
- Performing warranty inspections of newly installed or repaired assets to evaluate design and installation practices.
- Evaluating as-built changes for trends and areas for design and performance improvements.

APPENDIX 5 INCLUSIONS:

- None

6. Spill Emergency Response Plan

WDR REQUIREMENTS

Att. D-1.1 (pg. D-6)

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.*

COMPLIANCE

The City's Spill Emergency Response Plan (SERP) is a stand-alone document that contains all the key elements necessary for an appropriate Spill response: notification, emergency incident response, reporting, and impact mitigation. The current plan, prepared by Fischer Compliance, LLC, meets the requirements of the State Water Resources Control Board's reissued Waste Discharge Requirements (Order WQ-2022-0103-DWQ), which became effective on June 5, 2023. Initial training has been provided to affected staff and refresher training is conducted annually. A copy of the SERP is available for viewing at the City office upon request.

EFFECTIVENESS

Key Performance Indicators:

- Have staff spill response efforts helped to prevent the discharge of sewage to surface waters?
- Do post-spill assessments indicate staff are following the procedures outlined in the SERP?
- Is SERP training effective and trainees demonstrating adequate knowledge and abilities?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Sup
6.1	Perform SERP training including practice drills.	Annually		X	X
6.2	Review Post Spill Assessments to ensure adherence and to indemnify any trends that should be addressed	Annually		X	X

RESILIENCE

Resilience is addressed for Element 6 by:

- Multiple staff are trained to respond to spill events
- Post-spill assessments are conducted to evaluate staff adherence to the SERP and to identify areas for improvement.
- Data collection forms direct staff to collect all the required data to be submitted to CIWQS and are designed as a guide to a proper spill event response.
- The City employees several different spill volume estimation methods to account for different circumstances.

APPENDIX 6 INCLUSIONS:

- None

7. Sewer Pipe Blockage Program

WDR REQUIREMENTS

Att. D-7 (pg. D-7)

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:

a. *An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;*
b. *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;*
c. *The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages.*
d. *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;*
e. *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;*
f. *An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and*
g. *Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.*

COMPLIANCE

City's FOG Control Program

The City is committed to complying with the mandates set forth under the WDRs. To comply with the one of the eleven mandatory elements of the SSMP, the City is required to either prepare a FOG Control Program or demonstrate its existing preventative maintenance program effectively reduces the quantity and/or the effects of FOG and other debris discharged to the wastewater collection system that may cause sewerage collection system blockages or spills.

The City retained outside services to prepare the FOG Characterization Study, which was completed in 2004. The primary goal of the FOG Characterization Study was to identify the source and nature of FOG within the City's wastewater collection system and compile and categorize the findings. At that time, the study identified over 400 FSE within the City's service area. A map illustrating the location of the FSEs was developed and allowed the City to identify potential HFMLs and facilitated development of a comprehensive GIS database to allow staff to efficiently monitor FSEs, schedule and perform inspections, and issue permits. Additionally, the study included the inspection of approximately 50 percent of the FSEs during 2003-2004.

The inspections were to determine practices related to the disposal of grease and identify establishments that may discharge FOG into the wastewater collection system and that used the following:

- Kitchen Equipment (deep fryer, wok, grill, etc.)
- Kitchen Drains (sinks, garbage grinders, dishwashers, trashcan wash areas, etc.)
- Grease Removal Equipment and Grease Disposal Practices
- Evidence of Kitchen BMPs
- Trap Maintenance
- Spill Prevention/Clean-up Practices
- Evaluation menu and FOG usage
- Compliance with Uniform Plumbing Code

The City developed and implemented the City of Fullerton Fats, Oils, and Grease Control Plan for the Sanitary Sewer System in 2005. The intent of the plan was to identify the activities necessary to facilitate the maximum beneficial public use of the City's sanitary sewer system while preventing blockages of the sewer lines and reducing the adverse effects on sewage treatment operations resulting from discharges of FOG into the system. The plan served as a basis for developing and implementing the City's FOG Control Program. The City's FOG Control Program summarizes the components of the processes and procedures intended to reduce the quantity of FOG discharged into the City's sanitary sewer system to achieve the goal of minimizing spills due to excessive FOG.

The WDR requirements above are addressed in order below:

a. Public Education and Outreach

The City maintains a presence at community events, such as the Farmer's Market, Airport Days, and the City's On the Go Program to promote best practices to help prevent the disposal of pipe blocking substances (Non-dispersible wipes, grease, etc.) into the collection system. In addition, has developed a flyer to distribute to residents and businesses within the service area that explains responsibilities and promotes kitchen best practices and lists items that should not be disposed of in the sewer system. Field staff have informational doorhangers that are used for targeted outreach when called for.

b. Disposal of Pipe-Blocking Substances

Pipe blocking substances collected during maintenance activities, primarily through hydro-cleaning activities, are collected and disposed of. Each hydro-vac debris tank has the capacity to hold up to 1,200 gallons of water, which is forced through the jetter nozzle at approximately 2,000 pound of pressure per square inch. The sewer mains are typically cleaned by inserting a high-pressure water jetting nozzles in the pipeline and removing the debris from a downstream manhole. The types of nozzles used vary based on the type of cleaning performed including routine cleaning, root removal, or grit removal. The debris that is removed from the sewer mains is separated into solid and liquid waste tanks as it is vacuumed into the truck. Liquids that are re-released back into the system are generally stored in special containers at Basque Yard and once filled, the waste is disposed of at the OCSD in Fountain Valley. Hydro-vac debris tanks are emptied on an as-needed basis.

c. Legal Authority to Prohibit Discharges

The City's current legal authority to limit and prohibit FOG from entering the City's wastewater collection system is established through its existing municipal codes, ordinances, and permitting procedures. Section Chapter 12.20 FOG Control Ordinance of the Fullerton Municipal Code includes

the requirements and prohibitions pertaining to the use of the City's wastewater collection system.

Specifically, Section 12.20.050. Prohibitions, of the City's Municipal Code, includes a general description of the various types of substances restricted by the City from being directly or indirectly discharged into the collection system. The restrictions are applicable to all users of the City's system.

FOG Ordinance No. 3051, which serves to adopt the City's Fats, Oils, and Grease Program, also specifies appropriate FOG discharge requirements, limitations, and prohibitions for FSEs to prevent blockages of sewer lines resulting from discharges of FOG. The key elements of the FOG Control Program include Waste Discharge Permit Requirements; Kitchen BMPs; the installation, operations and maintenance of approved type and adequately sized grease control device(s); and the notification, monitoring, reporting and record keeping conditions.

d. Requirements to Install Grease Removal Devices

The requirement for the installation of a grease control devices is a key component of the City's Municipal Code and FOG Control Program. Section 12.20.210. Grease Interceptor Requirements, and Section 12.20.220, Grease Trap Requirements, includes a description of the requirements for the installation of grease interceptors and grease traps.

The City requires sizing and installation of grease interceptors and grease traps to conform to the applicable sections of the current edition of the California Plumbing Code (CPC) or as required by the FOG Control Manager. FOG Ordinance No 3051 included amendments to various sections of the 2001 CPC. Specifically, Section 14.07.070 and 14.07.080 were added to and serve to amend Sections 1014.1 and 1014.6 of the CPC, respectively.

Section 14.07.070 modifies the CPC to grant the City the administrative authority to require all FSEs to install and operate a grease control device in conformance with Chapter Chapter 12.20 FOG Control Ordinance, of the Municipal Code. Section 14.07.080 establishes more specific maintenance requirements for grease interceptors in accordance with the Chapter Chapter 12.20 FOG Control Ordinance, of the Municipal Code.

Section 12.20.250, Grease Interceptor Maintenance Requirements, of the City's Municipal Code outlines the provisions for maintaining the grease interceptors in proper operational conditions. Additionally, to ensure proper operation and maintenance of the approved grease control devices, the FOG Control Program includes monitoring and reporting conditions that may require the FOG Control Program Manger to identify any deficiencies in meeting the requirements of the permit.

e. Authority to Inspect Grease Producing Facilities

Implementation of the FOG Control Program requires all FSEs to obtain and renew a FOG Waste Discharge Permit. Although the requirements for compliance with the permit may vary among FSEs, generally each permit will require the FSE to meet the requirements for installation of FOG removal devices where required, comply with applicable City policies, and pay all required fees as set forth by the permit fee schedule.

Section 12.20.270. Inspection and Sampling Conditions, allows the FOG Control Manager to enter the premises for purposes of inspecting the grease control devices, reviewing manifests, records, and other applicable documents related to the cleaning, maintenance and inspection of the sewer

conveyance system and grease control devices to determine compliance with the conditions of the Waste Discharge Permit, FOG Control Program, and City ordinances.

Section 12.20.280, Right of Entry requires persons or occupants of FSE to allow the FOG Control Program Manager, or designated City representatives, access to all parts of the wastewater generating and disposal facilities for purposes of inspecting and sampling. Additionally, the section authorizes City representatives attempting to inspect any facility involved directly or indirectly with a discharge of wastewater into the City's sewer system, access to adjoining businesses or properties that share a sewer conveyance system with an FSE in order to prevent or remediate an actual or imminent spill.

Implementation of the City's maintenance procedures has been successful in minimizing the number of spills and addressing the high frequency maintenance locations, the City intends to continue its current FOG Control Program.

f. Identification of FOG in Collection System

The performance and scheduling of preventive, operation and maintenance activities is performed by the City's Source Control Inspectors. The Preventative Maintenance Program includes a cleaning cycle for the areas that have been identified by City staff as "special projects." The City's "special projects" include pipe segments identified as having high FOG, root concentrations, and siphons. The pipe segments within the wastewater collection system identified as "special projects" are routinely cleaned on a 1, 3, 6, or 12-month intervals based on field observations.

g. Implementation of Source Control Measures

The Sewer Division has two Source Control Inspector assigned to the FOG Control Program that is responsible for conducting the scheduled FSE inspections schedule, meeting reporting requirements, adjusting and implementing additions/changes to the inspection schedule as FSEs are established, closed, or where there is a change in ownership or operations. While the existing Source Control Inspector has successfully conducted the timely inspections of restaurants, adding an additional inspector would allow the City to implement the following programs:

- Educational component of the FOG Control Program: As the FOG Control Program is primarily concentrated on educating FSE staff, the additional inspector would be focused on performing the initial educational site visits.
- Inspection of business that include food processing, which create packaged meals or process cooking oil, and determined that these businesses are considered FSE and are inspected for proper grease control programs.
- Commercial and industrial oil/water separator program: Although oil/water separators are installed in non-food service environments such as car washes, loading docks, and service stations, or anywhere where oil and other toxins can mix with runoff water, they operate similar to grease interceptors and are part of the City's overall NPDES compliance efforts.

EFFECTIVENESS

Key Performance Indicators:

- Have there been any blockages/spills from any identified problem area?
- Is the agency receiving feedback on public outreach efforts?
- Are debris and other sewage solids collected during cleaning activities being disposed of appropriately?
- Have there been spills due to excessive fats, oil, grease, roots, or non-dispersible wipes discovered in the sewer system during the audit period?
- Are there repeat offenders among FSEs?
- Are enforcement trends decreasing?
- Are Source Control and Collection staff included in the plan check process?

IMPLEMENTATION PLAN/SCHEDULE

No	Plan	Schedule	Responsible Party		
			DPW	Mgr.	Sup
7.1	Review/evaluate enforcement and inspection findings and implement changes as necessary.	Annually		X	X
7.2	Review spill rates and causes and make changes to maintenance programs, as necessary.	Annually		X	X

RESILIENCE

Resilience is addressed for Element 7 by:

- Inspection of select assets directly downstream of grease producing businesses to ensure source control is effective.
- Residential FOG outreach and education program.
- Performance of regular assessments of system assets to monitor performance.
- QA/QA process for evaluating pipe cleaning effectiveness.
- Daily disposal of pipe blocking materials retrieved during maintenance activities.

APPENDIX 7 INCLUSIONS:

- None

8. System Evaluation, Capacity Assurance, Capital Improvements

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

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.*

8.1. System Evaluation and Condition Assessment

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

The City SSMP must include procedures to:

a. *Evaluate the sanitary sewer system assets utilizing the best practices and technologies available.*
b. *Identify and justify the amount (percentage) of its system for its condition to be assessed each year.*
c. *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.*
d. *Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods.*
e. *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.*
f. *Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and*
g. *Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: (a) sea level rise, (b) flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; (c) wildfires; and (4) increased power disruptions.*

COMPLIANCE

The above requirements are addressed in order below:

a. Evaluate System Using Best Practices and Technologies

The assessment of a collection system involves every component of the City collection system, including pipelines, manholes, and siphons. The assessment of pipeline condition is the most significant condition assessment responsibility the City has. It is of key importance to regularly perform pipeline condition assessments to initially establish a condition baseline so conditions can be monitored over time. The condition rating of a pipeline is one of the key parameters used prioritizing risk, which in turn is used to help develop the City's CIP.

The City has divided their system into three (3) Districts and 52 sub- basins, allowing for efficient and systematic assessment of the collection system. and field staff inspect the system in a systematic manner, which improves efficiency, allowing to City to achieve the goal of properly maintaining the system.

Field staff monitors easements to help ensure access. There are occasions when activities are performed on or about easements, which can create access concerns, such as the construction of a shed or other outbuildings, installation of a fences, swimming pools (above and below surface), dumping of garbage and trash that blocks drivable easements, to name a few.

City has a manhole inspection program, and inspections are performed during cleaning operations and manholes are inspected employing a visual, top-down approach, without entry, and documented in the Lucity CMMS (every 5 years.)

b. Justify the Amount of Yearly Condition Assessment

Currently the City has one CCTV truck and dedicates two staff to operate it. Staff assesses the condition of the collection system on a five-year interval (+/- 65 miles/year). The City maintains a relatively low spill rate, incurring only 3 spills between 1/1/2018 and 1/1/2025. In addition, the City cleans the system on an 18-month interval, which means the pipes will be cleaned over three (3) times between inspection cycles. Though the current five-year cycle seems appropriate for the City's collection system, staff is evaluating their current practices to help ensure an optimal inspection cycle.

c. Prioritize Condition Assessment

The City CCTV inspects all gravity mains and manholes on a five-year interval and is knowledgeable about the performance of its collection system. Staff believes it is appropriate to address all pipe segments in the same manner as the risk and consequence of a spill from any portion of the collection is essentially the same. Field staff use proffer skids, one size down from the pipe diameter, and monitors debris found during pipe cleaning activities and would recognize if there was a significant failure. As mentioned previously, gravity mains are cleaned every 18 months.

The City performs top-down, visual inspections of manholes and video inspections of gravity mains. Level monitors and flow monitoring devices are utilized to monitor flow conditions, pipe performance and infiltration.

The City is not aware of exfiltration from their collection system. The City has identified all sewage conveyance facilities near surface water. Approximately 6044 feet of gravity main runs parallel to creeks and some have been lined. Other pipes located near surface water are located within the

public right-of-way, in streets and show no evidence of defects that could lead to exfiltration. The City continuously monitors defects such as cracks, separated joints, and infiltration. Significant findings will be addressed in a timely manner.

d. CCTV inspections are documented in the POSM sewer inspection software. The City documents all maintenance activities in the Lucity CMMS. All collected data is used for the purpose of documenting maintenance efforts, evaluating system performance, and making maintenance and corrective action decisions today and into the future.

e. The City, generally its service area and has determined that flooding is the one climate change impact that affects the sewer system. The City has identified areas susceptible to flooding and has implemented a program to seasonally plug the vent and pick holes in manhole covers.

EFFECTIVENESS

Key Performance Indicators:

- Has the City maintained its schedule and is data being reviewed in a timely manner?
- CCTV Gravity Mains
- Laterals
- Manholes
- Are inspection efforts discovering deficiencies in a timely manner?
- Are maintenance and inspection activities properly documented?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			Dir	Mgr.	Sup
8.1.1	Review/evaluate enforcement and inspection findings and implement changes as necessary.	Annually		X	X
8.1.2	Review spill rates and causes and make changes to maintenance programs, as necessary.	Annually		X	X
8.1.3	Hold meeting to discuss any issues that may result from climate changes	Annually	X	X	X

8.2. Capacity Assessment and Design Criteria

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

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 above-ground 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.*

COMPLIANCE

In October 2024, the City updated its Sewer System Master Plan. The capacity assessment completed as part of the City's Sewer Master Plans was based on hydraulic modeling of the City's collection system under current and future design flows. The objective of the plan was to:

- Update the City's existing sewer model with system improvements completed since the 2009 Sewer Master Plan.
- Using recent flow monitoring data, allocate dry weather sewer flows throughout the system and calibrate the hydraulic model to existing dry and wet weather flow conditions.
- Evaluate the existing and future capacity of the City's collection system under both dry and wet weather conditions.
- Perform condition assessment of pipelines throughout the collection system.
- Develop a prioritized list of recommended Capital Improvement Program (CIP) projects, with engineer's cost estimates, intended to address anticipated pipeline capacity and/or condition concerns.

Both dry weather and wet weather capacity analyses were performed on the modeled system under Existing,

Near-Term (2030) and Ultimate (2045) loading conditions. The dry weather analysis indicated that no pipeline in the modeled system is anticipated to exceed capacity under dry weather conditions. During peak wet weather flows, which includes a 10-year storm, two deficiencies were identified.

The Master Plan identifies the areas with the highest infiltration and inflow (I/I) based on flow monitoring data. Basins identified with the highest I/I were generally sewered with pipes constructed before 1960 and therefore suggested that the pipes were potentially deteriorated such that high levels of infiltration were entering the system through cracks and other defects. The analysis determined that the wastewater system did not experience a significant amount of ground water infiltration and that elevated levels of infiltration did not persist during the entire wet weather seasons.

Condition assessment reports were reviewed to determine an appropriate rehabilitation or repair method intended to address observed structural and other physical defects. The reports were generated between 2008 and 2024 and used in preparation for this Sewer Master Plan Update.

EFFECTIVENESS

Key Performance Indicators:

- Number of capacity-related spills or surcharge conditions during the audit period?
- Has the system responded to rain events as indicated by the hydraulic model?
- Have there been any changes to zoning designations (residential, commercial, industrial)?

IMPLEMENTATION PLAN/SCHEDULE

No	Plan	Schedule	Responsible Party		
			Dir	Eng	Sup
8.2.1	Monitor/Evaluate significant rain events to see if they exceed the design storm in the hydraulic model.	Each significant rain evet		X	X
8.2.2	Identify and monitor flood-prone areas susceptible to erosion from rain events	After each significant rain event		X	X
8.2.3	Monitor flows in each basin and updates the hydraulic model	Per Engineering Division schedule			X

8.3. Prioritization of Corrective Action

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

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.

COMPLIANCE

The determination of repair priority for short-term repair activities and long-term CIP projects can be very challenging due to the complexity in analyzing all the various factors affecting the pipeline's risk of failure.

All defects discovered from CCTV inspections of the gravity system are rated using the PACP defect coding system. Repairs are prioritized by considering the severity of defect, likelihood the defect would cause a spill and the consequence of a spill at that location. Collections staff, in coordination with engineering, evaluates and prioritizes each defect and determines which repairs will be performed in house and which will be performed by contracted services.

Larger, more involved work such as install liners and line replacement or rehabilitation is recommended by collection staff, and engineering designs the project and includes the projects in the CIP. When prioritizing work to be done, staff considers all factors such as location of facility to surface water or other environmentally sensitive areas, difficulty of access and likelihood and consequence of failure or inaction.

As a rule, for identified capacity improvements, any potential capacity deficiencies identified under peak dry weather flows (PDWF) conditions will be prioritized over those anticipated under peak wet weather flow (PWWF) conditions.

EFFECTIVENESS

Key Performance Indicators:

- Has the City adhered to its system evaluation/condition assessment schedule?
- Has the City adhered to its prioritization/corrective procedures for sewer repair and capacity improvement projects?
- Have projects been completed before deficiencies caused failures?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			Dir	Mgr	Sup
8.3.1	Utilize all available data for prioritizing corrective actions considering severity and consequences of potential spills.	Each CIP Update		X	X
8.3.2	Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities.	Continuously		X	X

8.4. Capital Improvement Plan

WDR REQUIREMENTS

Att. D-8 (pgs. D-7/D-8)

The capital improvement plan must include the following items:

a. *Project schedules include completion dates for all portions of the capital improvement program.*
b. *Internal and external project funding sources for each project; and*
c. *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.*

COMPLIANCE

The City's Sewer Master Plan identifies the wastewater collection system CIP short and long-term projects necessary to correct identified system deficiencies.

A comprehensive list of Capital Improvement Program (CIP) projects, including projected costs, for the City's existing collection system was developed based on the results of the capacity analysis and condition assessment.

A total of two gravity main capacity improvements were identified as hydraulically deficient, as well as needing replacement due to poor condition, indicating a high priority.

Repair and Rehabilitation Projects - The City's preventative maintenance program serves as a basis for identifying the repair, replacement, and/or rehabilitation improvements to the collection system and provides for the elimination of high frequency maintenance locations and/or "hot spots" through capital investment in permanent repairs and replacements.

For the implementation of repairs that extend beyond the City's internal resource capabilities, the City retains the services of professional contractors. Repairs that require further prioritization and planning are coordinated and scheduled with the City's CIP.

CIP Development - Using the results of CCTV inspection efforts, crews identify pipeline sections with structural damage, capacity issues, and/or locations where there is potential for a spill occurrence. Where structural defects are noted, numeric values are assigned and using the PISCES software, a risk assessment is performed.

The Sewer Division's management team works with the Engineering Division to identify and prioritize capital improvement and repair projects. The Sewer Division managers provide a report that identifies and summarizes the system deficiencies. The list of priority projects is routinely updated and evaluated by the Engineering Department and the projects are systematically scheduled and incorporated into the City's existing CIP.

Several factors determine the priority of projects identified during the assessment process, although the condition of the pipe is usually the primary factor. Additional factors may include goals to reduce sanitary sewer overflows, providing sufficient system capacity, reducing I/I into pipes located below the water table, or reducing maintenance efforts by improving the pipe condition. Other considerations include coordinating the surface and utility improvements with the other agencies that may be impacted by improvements

2024 Sewer Master Plan, Appendix E, provides a summary of CIP projects, while Appendix F includes project cost details.

Funding for capital improvement and replacement of the sewer system is generated through the Sewer Service Fee.

EFFECTIVENESS

Key Performance Indicators:

- Has the agency's capital improvement plan schedule been adhered to?
- Have there been any instances when a failure or service disruption occurred that would have been prevented if a project been completed?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			Dir	Eng	Sup
8.4.1	Hold regular coordination meetings, with all parties, to help keep the projects on track and resolve issues that may arise in a timely manner.	Annually		X	X
8.4.2	For schedules that are not kept, justify and document the reason	Each Delayed Project			X

RESILIENCE

Resilience is addressed for Element 7 by:

- Is there an annual review of the Capital Improvement Plan by all appropriate individuals including both Engineering and Operations?

APPENDIX 8 INCLUSIONS

8.1 2024 Sewer Master Plan and Capital Improvement Program.

9. Monitoring, Measurement, and Program Modifications

WDR REQUIREMENTS

Att. D-9 (pg. D-9)

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

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

COMPLIANCE

The above requirements are addressed in order below

a. The City maintains accurate and relevant inspection and maintenance records for the collection system. Much of the documentation today is maintained electronically, which allows for ease of access and analysis. This helps City staff to make sound decisions and prioritize activities when dealing with the routine and the unexpected.

b. Monitoring of the City's SSMP focuses on each element in terms of its implementation and effectiveness. Monitoring the implementation of SSMP elements would achieve the following goals:

   - Stated objectives of each element are valid and achievable
   - Tasks cited in each element leads to reaching these objectives
   - Tasks are being implemented
   - Responsibility for implementation is identified

   By establishing specific performance indicators for each element, an assessment can be made to determine the degree of success achieved. The SSMP has been designed to include key performance indicators (KPIs) for each element, which are used to measure effectiveness.

c. The City Assesses the success of maintenance and operation activities by ensuing activities are being performed as expected by performing quality assurance reviews, monitoring actual outcomes compared to intended outcomes, as well as monitoring spill trends.

d. The City is committed to continuous improvement and monitors and evaluates performance of work programs and SSMP elements to ensure intended outcomes are achieved while looking for areas for improvement. Although the SWRCB requires that the SSMP be updated every six years, the SSMP should be considered as a dynamic document and may require updating on a more frequent basis. Routine changes to administrative information, notwithstanding, minor changes will likely be required to address improvements identified through the SSMP Audit or through modifications required as conditions change.

e. The City monitors and analyzes spill trends, at a minimum every three (3) years during required audits, utilizing the CMMS database, inspection records and CIWQS data. In addition, spill trends are monitored and analyzed annually, when the Annual Report is submitted, by reviewing the Performance Analysis graphs that are required to be produced and submitted in the report. These reviews and analysis are helpful in planning and programing work, and adjusting as needed, enabling the City to be adaptive and capitalize on lessons learned.

EFFECTIVENESS

Key Performance Indicators:

- Are SSMP Elements periodically evaluated for effectiveness?
- Are work activities and spill events being documented?
- Has a plan and schedule been established to address audit findings/deficiencies from the last audit?
- Is Trend Analysis being performed on spill causes?
- Have work programs been assessed and updated as necessary?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			Dir	Mgr.	Sup
9.1	Assess work programs to ensure outcomes are as intended	Annually		X	X
9.2	Ensure updates to work programs and the SSMP based on assessments.	As Needed		X	X
9.3	Monitor and evaluate spill trends. Document efforts.	Annually		X	X

RESILIENCE

Resilience is addressed for Element 9 by:

- Development of key performance indicators to measure effectiveness of the Sewer System Management Plan.
- Performing periodic reviews of the Sewer System Management Plan to help ensure the plan is being properly implemented.
- Developing and adhering to a timeline to correct deficiencies found during the audit process.
- Periodically evaluating work programs to help ensure effectiveness.

APPENDIX 9 INCLUSIONS:

- None

10. Internal Audits

WDR REQUIREMENTS

Att. D-10 (pg. D-10)

The City SSMP 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 this General Order.

COMPLIANCE

The above requirements are addressed in order below

a. The City will complete audits every three (3) years moving forward. The objective of the audit is to evaluate compliance, implementation and effectiveness of the SSMP.

b. The SSMP includes a description of how the City will comply with the requirements of each Element. The audit review includes an evaluation to determine if compliance has been met.

c. Implementation is evaluated by determining if the agency is executing the SSMP as stated.

d. Effectiveness is evaluated by using key performance indicators, which have been developed specifically for each element.

e. An additional evaluation is performed to comply with Specifications 5.6 addressing resilience. Resilience indicators have been developed for each element, and they serve to demonstrate how resilience is built into the SSMP and inspection, maintenance and spill response activities.

f. Any deficiencies discovered through the audit process are noted and a plan and schedule to implement corrective measures are established.

EFFECTIVENESS

Key Performance Indicators:

- Have audits been performed as required?
- Have the audits assessed compliance, implementation, and effectiveness?
- Have deficiencies been identified?
- Has a plan and schedule to rectify the deficiencies been established?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			DIR	Mgr	SUP
10.1	Schedule audits in advance of due dates to ensure adequate time to complete. Agency has 6 months to complete the audit from the end of the audit period.	Begin end of audit period		X	X
10.2	Ensure a plan and schedule is developed to address deficiencies.	Once the Audit is completed		X	X

RESILIENCE

Resilience is addressed for Element 10 by:

- Periodically evaluate key performance indicators during the audit period to assess effectiveness and make corrections, if necessary, prior to the audit.
- Evaluate previous audit to ensure deficiencies have been rectified.
- Calendar the audit due dates and complete the audit on time.

APPENDIX 10 INCLUSIONS:

- None

11. Communication Program

WDR REQUIREMENTS

Att. D-11 (pg. D-10)

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

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

COMPLIANCE

a. When the City experiences a spill, it is standard procedure to secure the affected area and keep the public away. This is generally done using barricades, cones and caution tape. Should the City experience a spill that may require closure of public areas or enter a source drinking of water, signs will be immediately placed indicating the issue and providing contact information. Staff will remain on site to provide an additional safety factor until appropriate authorities respond and direct otherwise. In all cases, the City will follow the advice of higher authorities, such as the local environmental health department and other regulatory authorities.

   There are several opportunities for the public to participate and provide input into the development and update of the City SSMP. During its initial development stage, as with each SSMP Audit and update of the SSMP, the SSMP and related documents are presented to the City Council for review and acceptance. As previously noted, SSMP Audits are performed every two years and re-certification and acceptance of updated SSMPs are required every five years. In addition to the extensive initial development process, to date there have been five updates and re-certifications of the SSMP that have been presented to the Board. Prior to each Council Meeting, these documents are included in Board Agenda packet which are readily available for review on the City's website. The SSMP is posted on the City's website, which provides the public several ways to contact the City, via the "Contact Us" feature.

b. The City does not currently have satellite systems.

EFFECTIVENESS

Key Performance Indicators:

- Does the agency place all Sewer System Management Plan action items on the agenda for regular counsel/board meetings?
- Does the agency have signage, or other means, readily available to notify the public of environmental or public risk factors related to a sewage spill?
- Does the agency perform outreach to residential customers?

IMPLEMENTATION PLAN/SCHEDULE

No.	Plan	Schedule	Responsible Party		
			Dir	Mgr	Sup
11.1	Ensure the City Counsil approves the SSMP per schedule	Every 6 years		X	X
11.2	Ensure the SSMP is posted on the City Website and the link functions properly.	Annually		X	X
11.3	Ensure Sewage Spill Warning signs are readily available to communicate with the public when necessary	Annually			X

RESILIENCE

Resilience is addressed for Element 11 by:

- Use the Sewer System Management Plan as a tool to communicate to the public how the agency is managing the system.
- Maintain a consistent presence in the service area by attending community events or issuing periodic newsletters or other communications to the public.
- Make it clear and easy for the public to contact the agency.

APPENDIX 11 INCLUSIONS

- None

LIST OF APPENDICIES

APPENDIX 1

- None

APPENDIX 2

- None

APPENDIX 3

- None

APPENDIX 4

- None

APPENDIX 5

- None

APPENDIX 6

- None

APPENDIX 7

- None

APPENDIX 8

- 8.1 Capital Improvement Program

APPENDIX 9

- None

APPENDIX 10

- None

APPENDIX 11

- None

APPENDIX 12

- 12.1 SSMP Effectiveness Worksheet

APPENDIX 8

- 8.1 Capital Improvement Program

Sewer CIP Projects Priority List

							GREEN	Design Phase
							RED	Construction Phase
Date Revised:	3/3/25						BLUE	Complete

Priority	Project Name	Planning ID	Atlas Map Area	Scope of Work	CIP Project No.	Engr	Date Completed	Notes
SEWER IMPROVEMENT PROJECTS REQUESTED BY SEWER DIVISION								
Very High	Composite Manhole Covers		Various	Replace/Modify Composite Covers to allow overflow				Sewer Div to lead. Eng to provide project list
Very High	Valley View - Atlas map 45	CIP2427072	45	Replace pipes in private property easement				Sewer Div to lead. Pilot project in one of the three areas.
Very High	Chapman Area - Alley behind commercial center parking lot	CIP2427078	33	Extend laterals to 10" pipe and abandon existing 6". MH 70-31 and MH 23-33. Approx 4-5 laterals				Sewer Div - dye test & locate laterals.
Very High	Chapman-Victoria Area - Alley west of shopping mall		29	Replace 8" steel pipe located adjacent to buildings				Sewer Div - inspect downstream pipes for condition and lateral connection locations. Eng Div - Obtain survey/basemap quote. Confirm alley right of way. Pipe appears to be located on Walgreens property. Recommend getting title report to confirm easement rights.
Very High	Pritchard south of Commonwealth		13	Replace existing 6" MH 71-13 to 40-13. Capacity concerns due to adjacent high density. Consider upsizing 6" north of Commonwealth as part of project				Need to discuss water main replacement with Water Division
Very High	Casa Blanca-Barris-Fern Area	CIP2427021	46	Upgrade 6", redirect flow away from school.	51030	Melissa	Oct 2023	Complete
Very High	Balcom Alley	CIP2427066	27	Phase 1 only-Upsize 6" to 8". Lining. Alley reconstruction		Nick	Oct 2023	Complete
Very High	Kimberly Water Well 1A Site	CIP2427073	30	Replacement of sewer pipe under water well site. Pipe accidently removed during PFAS treatment construction	51031	Nick	Nov 2023	Complete
Very High	Orangethorpe @ State College Intersection - East Side		34	Lining of pipe on Orangethorpe MH 24-34 to MH 30-34	51033	Nick	June 2024	Complete
Very High	Juanita Pl	CIP2427074	93	Lining of pipe in street. MH 80-93 to MH 76-93 minimum	51033	Nick	June 2024	Complete
Very High	Glenview Dr CDS, north of Valencia Mesa	CIP2427075	45	Lining of pipe in easement. MH 81-45 to MH 52-45 minimum		Nick	June 2024	Complete
Very High	Fox Dr CDS, north of Valencia Mesa	CIP2427076	71	Lining of pipe in easement. MH 83-71 to MH 86-71 minimum		Nick	June 2024	Complete
Very High	Commonwealth/Highland intersection	CIP2427077	23	Lining of pipe in street. MH 4-23 to MH 103-23	51033	Nick	June 2024	Complete
Very High	Laguna Terrace	CIP2427079	69	Repair and Lining of pipe in easement. MH 4-69 to MH 13-69 minimum	51033	Nick	June 2024	Complete
High	N Newell Alleys Replacement	CIP2427029	25, 27	Old pipe with multiple fractures.				Sewer Div - inspect pipe conditions and confirm scope of work
High	Euclid siphon at Malvern	CIP2427070	44, 46	Sewer will be routed away from intersection and a new siphon will be installed under channel east of intersection. Need OCFCD permit for work under channel. Consultant RFP				Eng Div - release RFP to consultants for design
High	Orangethorpe from Lemon to Raymond		7, 8, 26, 28	Create separate City of Anaheim and City of Fullerton pipes. Repair/replace manholes				Coordination with Anaheim has stalled.
High	Basque-Commonwealth		17	Connect missing 15" sewer main now that the AT&T ducts have been moved		Nick		Coordinate project with Water project
High	Euclid/Bastanchury at Railroad		69	Upgrade 8" pipe under railroad crossing.	51029	Nick		Improvements needed in conjunction with upstream development. Developer to pay impact fees
High	West Chapman Ave	CIP2427080	17	Lining of pipe in street. MH 2-17 to MH 14-17	51033	Nick	June 2024	Complete
High	Morningside Drive	CIP2427080	78	Lining of Pipe in street. MH 55-78 to MH 56-78	51033	Nick	June 2024	Complete
High	Glenwood/Union/Brookdale	CIP2427023	50	Replace 6" VCP	51028	Melissa	June 2022	Complete
High-Medium	Santa Fe Parking Lot/Lawrence Phase 2	CIP2427027	25	Upsize 6" to 8" VCP. Replace lamphole with manhole. Replace 8" VCP in alley		Joseph		
High-Medium	Alley north of Amerige, west of Lemon		25	Work requires replacement of water main in order to replace sewer pipe				
Medium	S Woods Replacement	CIP2427039	22	Heavy roots causing further damage. Update/Confirm Scope				
Medium	Knepp and Malden Alleys replacement	CIP2427022	24	Replace all lampholes with manholes. Trenchless replacement between 55-24 and 54-24				
Medium	Washington Phase 1	CIP2427019	22	Remove/Replace main adjacent to channel west of Woods. OCFCD permit required	51025	Joseph		Design on hold
Medium	Washington Phase 2	CIP2427019	22	Replace 21/24" with 8". Includes street reconstruction.	51025	Joseph		Design on hold
Medium	Valencia from Gilbert to Magnolia	CIP2427040	13, 14	Downsize pipe due to upstream flow modifications	44058	Melissa	August 2022	Complete
Medium	Ellis Ave 6" Replacement @ Pomona	CIP2427007	50	Replace 6" and add MH at top of line.	51020	Melissa	July 2023	Complete. Phase 1 - Overall project scope revised to coord with Fox Block development
Low	Pomona and Ellis Alley	CIP2427007	50	Replace 6" in Pomona and Ellis Ln alley				Phase 2 improvements
Low	Orangethorpe from Highland to Woods		5, 6	Combine pipes and connect to OCSD at Ray. Study needed for OCSD				
Low	Brookhurst - North of Commonwealth		15	Abandon pipes under railroad				
MISC CIP PROJECTS WITH SEWER IMPROVEMENTS								
	State College Blvd		81,82,100	Point repairs	44068	Nick		
	Maplewood Area (including Valencia Dr)		22	Combine pipes on Ash. Point repairs. Water & Street Improvements planned for area.	53047	Michael		
	Sudene Ave & Santa Fe Ave		27	Replace 6" VCP. Pipe burst between properties. Water & Street Improvements planned for roadway. CDBG street funded project.	53048	Michael		
	Orangethorpe @ State College Intersection - West Side		32, 34	Lining of pipe on Orangethorpe MH 35-32 OCSD Main. MH needed for lining upstream of OCSD main. Street project to construct MH.	44062	Nick		Lining as separate project after MH construction
	Nutwood-Yale-Union	CIP2427062	52	Combine pipes on Nutwood	53013	Michael	April 2022	Complete
	San Juan		95	Sewer main lining. No reconstruction	53014	Gar	June 2022	Complete
	Marion Area		49, 75	Point repairs and install lining in pipes. Some pipes in area have been previously lined	53021	Joseph	July 2023	Complete
	Associated Rd - Bastanchury to Imperial			Point repairs.	44061	Jose	Oct 2023	Complete
	Valencia Mesa Dr Rehab		43	Manhole lining. Frame & cover replacement	44055	Joseph	Aug 2024	Complete
	Costa Court Area Street Rehab		33	Drop manhole reconstruction	44070	Melissa	Aug 2024	Complete
	Hermosa Area Street Rehab		94,95,96,97	Point repairs, brick MH reconst, drop MH const	44075	Joseph	Aug 2024	Complete

APPENDIX 12

- 12.1 SSMP Effectiveness Worksheet

SSMP Effectiveness Worksheet

CONTENTS

ELEMENT 1 – INTRODUCTION AND GOALS

ELEMENT 1			
No.	**Assessment Criteria**	**Yes**	**No**
1.1	None	☐	☐
1.2	Are SSMP Audits and SSMP Updates being performed as scheduled?	☐	☐
1.2	Has the Sewer System Management Plan been approved by the governing board on schedule (every six years)?	☐	☐
1.2	Are specific internally established sewer program milestones being monitored?	☐	☐
1.3	Are asset statistics periodically reviewed and updated as necessary?	☐	☐
1.3	Are corrections addressed in a timely manner?	☐	☐
1.3	Are system maps up to date?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 2 – ORGANIZATION

ELEMENT 3			
No.	**Assessment Criteria**	**Yes**	**No**
2.0	Have there been any changes requiring updates to the Organizational Chart?	☐	☐
2.0	Have there been instances when a service call for a spill was not properly routed to response personnel?	☐	☐
2.0	Were all spill response activities documented and forwarded to the LRO?	☐	☐
2.0	Have there been any changes in assigned responsibilities for implementing the Sewer System Management Plan?	☐	☐
2.0	Is there a process in place to ensure all contact information remains up to date?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 3 – LEGAL AUTHORITY

ELEMENT 3			
No.	**Assessment Criteria**	**Yes**	**No**
3.0	Are the Agency ordinances and standards adequate for fulfilling the Sewer System Management Plan legal requirements?	☐	☐
3.0	Does the Agency have a process in place for periodic review and evaluation of ordinances?	☐	☐
3.0	Have there been instances when the code or ordinance did not address a need or circumstance?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 4 – OPERATIONS AND MAINTENANCE

ELEMENT 4			
No.	**Assessment Criteria**	**Yes**	**No**
4.1	Were all map updates completed in a timely manner?	☐	☐
4.1	Are all staff trained in the procedure for providing map update information?	☐	☐
4.1	Are newly installed sewer assets incorporated into the system maps?	☐	☐
4.1	Are there terrain features or assets that should be incorporated in future map updates (e.g. exposed pipe, siphons, ARVs, surface water, etc.)	☐	☐
4.2	Is the agency's maintenance, operations, engineering work orders periodically audited for accuracy and completeness?	☐	☐
4.2	Does the agency monitor "open," "overdue," or "not yet completed" work orders to ensure completion of tasks?	☐	☐
4.2	Are inspection and maintenance activities reducing the number and volume of spills?	☐	☐
4.2	Is maintenance work being completed as scheduled?	☐	☐
4.3	Has all training been completed as scheduled?	☐	☐
4.3	Have records of training and attendance been documented and maintained?	☐	☐
4.3	Have all staff demonstrated ability and knowledge after each training event?	☐	☐
4.3	Have contractors received, at a minimum, direction for reporting and responding to spills.	☐	☐
4.4	Have inventory lists been audited as scheduled?	☐	☐
4.4	Have any inventory deficiencies or omissions been discovered and rectified?	☐	☐
4.4	Has the agency experienced any equipment failure that inhibited a spill response?	☐	☐
Comments			

ELEMENT 4	
Corrections	
Reviewed By	
Approved By	

ELEMENT 5 – DESIGN AND PERFORMANCE PROVISIONS

ELEMENT 5			
No.	**Assessment Criteria**	**Yes**	**No**
5.1	Are the Agency ordinances and standards adequate for fulfilling the Sewer System Management Plan legal requirements?	☐	☐
5.2	Were any design or installation deficiencies found during warranty inspections?	☐	☐
5.2	Are deviations from standard procedures and/or specs, testing, etc., justified and documented?	☐	☐
5.2	Does the Agency stay abreast of industry design standards and technical advances in the industry?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 6 – ELEMENT 6 – SPILL EMERGENCY RESPONSE PLAN

ELEMENT 6			
No.	**Assessment Criteria**	**Yes**	**No**
6.0	Have staff spill response efforts helped to prevent the discharge of sewage to surface waters?	☐	☐
6.0	Do post-spill assessments indicate staff are following the procedures outlined in the SERP?	☐	☐
6.0	Is SERP training effective and trainees demonstrating adequate knowledge and abilities?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 7 – SEWER PIPE BLOCKAGE PROGRAM

ELEMENT 7			
No.	**Assessment Criteria**	**Yes**	**No**
7.0	Have there been any blockages/spills from any identified problem area?	☐	☐
7.0	Is the agency receiving feedback on public outreach efforts?	☐	☐
7.0	Is the debris and other sewage solids collected during cleaning activities being disposed of appropriately?	☐	☐
7.0	Have there been spills due to excessive fats, oil, grease, roots, or non-dispersible wipes discovered in the sewer system during the audit period?	☐	☐
7.0	Are there repeat offenders among FSEs?	☐	☐
7.0	Are enforcement trends decreasing?	☐	☐
7.0	Are Source Control and Collection staff included in the plan check process?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 8 – SYSTEM EVALUATION, CAPACITY ASSURANCE, CAPTIAL IMPROVEMENTS

ELEMENT 8			
No.	**Assessment Criteria**	**Yes**	**No**
8.1	Has the Agency maintained its schedule for CCTV inspections and is data being reviewed in a timely manner.	☐	☐
8.2	Number of capacity-related spills or surcharge condition during the audit period?	☐	☐
8.2	Has the system responded to rain events as indicated by the hydraulic model?	☐	☐
8.2	Has there been any changes to zoning designations (residential, commercial, industrial)?	☐	☐
8.3	Has the Agency adhered to its system evaluation/condition assessment schedule?	☐	☐
8.3	Has the Agency adhered to its prioritization/corrective procedures for sewer repair and capacity improvement projects?	☐	☐
8.3	Have projects been completed before deficiencies caused failures?	☐	☐
8.4	Has the agency's capital improvement plan schedule been adhered to?	☐	☐
8.4	Have there been any instances when a failure or service disruption occurred that would have been prevented if a project been completed?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 9 – MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

ELEMENT 9			
No.	**Assessment Criteria**	**Yes**	**No**
9.0	Are SSMP Elements being periodically evaluated for effectiveness?	☐	☐
9.0	Are work activities and spill events being documented?	☐	☐
9.0	Has a plan and schedule been established to address audit findings/deficiencies from the last audit?	☐	☐
9.0	Is Trend Analysis being performed on spill causes?	☐	☐
9.0	Have work programs been assessed and updated as necessary?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 10 – INTERNAL AUDITS

ELEMENT 10			
No.	**Assessment Criteria**	**Yes**	**No**
10.0	Have audits been performed as required?	☐	☐
10.0	Have the audits assessed compliance, implementation, and effectiveness?	☐	☐
10.0	Have deficiencies been identified?	☐	☐
10.0	Has a plan and schedule to rectify the deficiencies been established?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

ELEMENT 11 – COMMUNICATIONS PROGRAM

ELEMENT 11			
No.	**Assessment Criteria**	**Yes**	**No**
11.0	Does the agency place all Sewer System Management Plan action items on the agenda for regular counsel/board meetings?	☐	☐
11.0	Does the agency have signage, or other means, readily available to notify the public of environmental or public risk factors related to a sewage spill?	☐	☐
11.0	Does the agency perform outreach to residential customers?	☐	☐
Comments			
Corrections			
Reviewed By			
Approved By			

SPILL EMERGENCY RESPONSE PLAN (SERP)

January 2024

SERP Review and Approved By	Name/Title	Signature/Date
Legally Responsible Official (1)		
Legally Responsible Official (2)		
Legally Responsible Official (3)		

PART 1 (COMPLIANCE GUIDE)

ACTIVITY CHANGE LOG (SERP)		
Date	Responsible Person/Title	Description Activity/Change

PART 2 (FIELD GUIDE)

LIST OF TABLES

LIST OF ATTACHMENTS

Introduction

This document, the Spill Emergency Response Plan (SERP), formerly known as the Overflow Emergency Response Plan (OERP) has been prepared by Fischer Compliance LLC with assistance from the City of Fullerton (City) staff for complying with one of a series of updated regulatory requirements resulting from the State Water Resources Control Board 2022 adoption of the "reissued" Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems[1] (referred to as "the 2022 WDR" throughout this document."

One primary area of focus by the State Water Board through updated regulatory requirements in the 2022 WDR is *objective compliance* with effective implementation of elements of the City's Sewer System Management Plan (SSMP). The State Water Board emphasizes urgency on the structure, content, and organization of an agency-specific SERP for ensuring effective spill, containment, control, and mitigation[2].

The effectiveness of the SERP is measured by the following objectives, providing City-specific translation of the corresponding State Water Board expectations for required effective spill responses:

- Implement effective and proactive spill containment, control, and mitigation
- Comply with State Water Board guidance on SERP implementation (see Attachment 1)
- Reduce future City WDR violations, potential water quality impacts, and nuisances
- Meet/exceed all WDR compliance points in a systematic, streamlined, and transparent manner to facilitate use by Legally Responsible Official(s), Managers, and field staff
- Measure and improve City SERP effectiveness (see Attachment 2)
- Expedite review by Water Board compliance inspectors and prepare the City for future regulatory audits of the SERP

These objectives provide the cornerstone for PART 1 (COMPLIANCE GUIDE) of this document, formulated by Fischer Compliance LLC around a streamlined process for objectively reviewing each applicable SERP compliance point, presenting the method(s) for how City is complying with each requirement, and providing customized Key Performance Indicators (KPIs) for the City SERP for measuring effectiveness. PART 2 (FIELD GUIDE) includes streamlined information and procedures for City first responders and field operations staff.

Table 1 below provides a summary of applicable Spill Emergency Response Plan requirements for full compliance with the WDR.

---

[1] See Order No. 2022-0103-DWQ

[2] See Order No. 2022-0103-DWQ, Attachment D (page D-2) which states *"the State Water Board or a Regional Water Board may consider the Enrollee's efforts in implementing an effective Sewer System Management Plan to prevent, contain, control, and mitigate spills when considering Water Code section 13327 factors to determine necessary enforcement of this General Order."*

Table 1 - Summary of Applicable Spill Emergency Response Plan Requirements

Compliance Point	WDR Section	Page	Regulatory Requirements
1	Spec. 5.7	22	• Allocate necessary resources for spill responses
2-1	5.12	23	• Update and Implement SERP within 6 months of 2022 WDR adoption date (6/5/2023); certify SERP up to date in Annual Report)
2-2	5.12	24	• Targets and measures for protection of public health and environment
2-3	5.12	24	• Timely spill responses, minimized impacts and nuisances by stopping, intercepting, recovering, cleaning publicly accessible areas, preventing toxic discharges to waters of the State
3	5.13	24	• Comply with Notification, Monitoring, Reporting, Recordkeeping requirements
4	ATT D-3	D-4	• Collaborate with storm drain agencies and ensure easement accessibility agreements for locations requiring operations
5-1	ATT D-4	D-5	• SERP training and practice drills
5-2	ATT D-4	D-4.4	• Inventory of sewer system equipment/identification of critical replacement and spare parts
6-1	ATT D-6	D-6	• Ensure Training/Implementation of SERP for staff and contractors
6-2	ATT D-6	D-6	• Address Emergency Operations/Traffic Control
6-3	ATT D-6	D-6	• Implement technologies, practices, equipment, coordination
6-4	ATT D-6	D-6	• Conduct Post-spill assessments
6-5	ATT D-6	D-6	• Annually review/assess effectiveness of SERP/update
see 2-1 above	ATT D-6	D-6	• Spill Emergency Response Plan/prompt detection/response
see 3 above	ATT D-6	D-6	• Notifications (primary responders, agencies)
see 3 above	ATT D-6	D-6	• Notifications (other potentially affected agencies)
see 3 above	ATT D-6	D-6	• Comply with WDR Att. E1 requirements
see 2-3 above	ATT D-6	D-6	• Containment, minimize/prevent spills to waters of state and drainage conveyances
see 2-2 above	ATT D-6	D-6	• Minimize public health and environmental impacts
see 2-2 above	ATT D-6	D-6	• Remove sewage from drain conveyance
see 2-2 above	ATT D-6	D-6	• Clean spill area/drain conveyance
see 4 above	ATT D-6	D-6	• Implement pre-planned coordination and collaboration with storm drain agencies
see 3 above	ATT D-6	D-6	• Document and report spill events

Compliance Evaluation

For preparing the SERP, an assessment was completed of the City's existing spill prevention, containment, control, and mitigation effectiveness[3]. This included review of the City's existing Overflow Emergency Response Plan (OERP), spill prevention/reduction strategies, field practices, data collection approach, critical spare parts/inventory, and field staff training. In addition, the inspection included review of data in the State Water Board's "California Integrated Water Quality System" (CIWQS[4]) including agency spill response metrics and benchmarks (see Table 2 below for details).

Table 2 – City spill data and compliance benchmarks

Element	Benchmarks
• Spill Response Metrics (agency notification - operator arrival)	
• Notification Compliance (Category 1 spill notification to Cal-OES >2 hours)	
• Draft Reporting Compliance (Category 1 spills within 3 business days)	
• Spill Recovery (%) Spill data- 10/28/2018-10/28/2023	

SERP Effectiveness

For facilitating review, assessment, and measurement of SERP effectiveness, Key Performance Indicators (KPIs) were generated for facilitating annual review, assessment, and update of the SERP for improving its effectiveness (see Attachment 2).

[3] See Order No. 2022-0101-DWQ, Provision 6.1.6 (Water Boards' considerations for discretionary enforcement purposes)
[4] CIWQS, publicly available at:
https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_main

COMPLIANCE POINT #1

1-1 Regulatory Requirement

WDR Section	Summary of Requirements
Specif. 5.7 (p22)	• Allocate necessary resources for spill responses

1-2 Compliance

- The City Legally Responsible Official (LRO) is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.
- The City LRO and Data Submitters for the sewer system are authorized to submit electronic and written spill reports and other required information to the CIWQS.
- For an overview of ensuring adequate resources for spill responses, refer to the City SSMP Elements 2 (Organization), 4 (Operations and Maintenance), and 6 (Emergency Response Plan).
- The City has ample resources, including three combination units, a fully stocked emergency response trailer including a 4" trash pump, air compressor and blocking plugs to effectively handle sewer spills within its jurisdiction. This equipment ensures a quick and efficient response to sewer spills, demonstrating the City's dedication to protecting the environment and public health.
- The City has allocated funds for its Capital Improvement Projects. The City has developed a comprehensive list of CIPP rehabilitation and open cut sections and has prioritized the list based on the condition assessment of each asset.

1-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, the City utilizes Attachment 2, Compliance Point #1.

COMPLIANCE POINT #2-1

2-1-1 Regulatory Requirements

WDR Sections	Summary of Requirements
• Specif. 5.12 (pgs23-24)	• Update and Implement SERP within 6 months of 2022 WDR adoption date (6/5/2023) • Certify the SERP up to date in the Annual Report
• ATT D-6 (pgD-6)	• Prompt detection and response to spills to reduce spill volumes and collection information for prevention of future spills. • Containment, minimize/prevent spills to waters of state and drainage conveyances

2-1-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.

- The City's SSMP includes the following goals with regards to preventing and mitigating spills:
    - Conduct a well-organized and comprehensive Operation and Maintenance (O&M) program
    - Minimize the potential for and the occurrences of spills.
    - Comply with all regulatory requirements
    - Ensure the public's health and safety
    - Provide appropriate staffing
    - Acquire appropriate funding
    - Manage an effective Fats, Oils and Grease (FOG) program
    - Ensure adequate capacity to convey peak wastewater flows
    - Maintain a long range planning and improvement plan
    - Maintain a new and renewed wastewater collection system
    - Inform and educate the public on programs, projects and issues related to the wastewater collection system
- During business hours, calls are answered by Administrative staff at the Public Works Department. For after-hours notifications, the City relies on Police Dispatch. While the contact information is available on the City's webpage, the Sewer Division should ensure clearer instructions on the phone tree for residents experiencing sewer issues.
- For procedures to ensure prompt detection and responses to spills, reducing spill volumes, and collecting information for prevention of future spills, refer to the City Spill Response Field Guide (PART 2)

- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

2-1-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, the City utilizes Attachment 2, Compliance Point #2-1.

COMPLIANCE POINT #2-2

2-2-1 Regulatory Requirements

WDR Section	Summary of Requirements
• Specif. 5.12 (p24)	• Targets for protection of public health and the environment
• ATT D-6 (pgD-6)	• Minimize public health and environmental impacts • Remove sewage from drain conveyance • Clean spill area/drain conveyance

2-2-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.

- The LRO for the City of Fullerton has sole responsibility for the operation and maintenance, inspection and repair of the City's sewer and storm drain conveyance system.

- The City has identified the process for removing sewage from a drainage conveyance system in the City Spill Response Field Guide Part 2. Crews will remove all debris and solids, Hydro-Vac to clean and vacuum all water from the drainage conveyance system and wash all affected concrete areas with the high-pressure wand. All wash water will be captured and removed with final containment measures.

- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

2-2-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, City utilizes Attachment 2, Compliance Point #2-2.

COMPLIANCE POINT #2-3

2-3-1 Regulatory Requirements

WDR Section	Summary of Requirements
• Specif. 5.12 (p23-24)	• Timely spill responses, minimized impacts and nuisances by stopping, intercepting, recovering, cleaning publicly accessible areas, preventing toxic discharges to waters of the State
• ATT D-6 (pgD-6)	• Containment, minimize/prevent spills to waters of state and drainage conveyances

2-3-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.
- The City has identified strategies in the SERP Field Guide to intercept, contain and divert spills from entering waters of the state.
- The City has established processes in place for prompt response to the report of a spill. These processes are identified in the SERP Field Guide- Part 2.
- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

2-3-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, see Attachment 2, Compliance Point #2-3.

COMPLIANCE POINT #3

3-1 Regulatory Requirements

WDR Section	Summary of Requirements
• Spec. 5.13 (p24) • ATT D-6 (pD-6)	• Comply with Notification, Monitoring, Reporting, Recordkeeping requirements • Notifications (primary responders, agencies) • Notifications (other potentially affected agencies) • Comply with WDR Att. E1 requirements and document and report spill events

3-2-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.
- The City has identified both internal and external contacts to enable prompt notification to regulatory agencies and City Staff primary responders should a spill occur.
- The City conducts extensive research for its spills for ensuring accurate volume estimations prior to the Legally Responsible Official (LRO) certifying spill reports in CIWQS.
- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

3-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, City utilizes Attachment 2, Compliance Point #3-1.

COMPLIANCE POINT #4

4-1 Regulatory Requirements

WDR Section	Summary of Requirements
• ATT D-3 (pD-4)	• Procedures: Collaborating with storm drain agencies
• ATT D-6 (pD-6)	• Implement pre-planned coordination and collaboration with storm drain agencies and other utilities/departments prior to, during and after a spill.

4-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.
- The City Public Works Department has responsibility for the operation and maintenance of both the sewer system and storm drain system within its boundaries.
- The City utilizes a GIS Layer to identify all storm drain assets and outfall locations. In addition the City uses the following resources for its storm drain collaboration activities: USGS mapping tool with watershed and topography information[5], California Board Basin Plan Beneficial Use Viewer tool,[6] and the State Water Board eWRIMS tool[7].
- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

4-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, City utilizes Attachment 2, Compliance Point #4.

[5] See https://apps.nationalmap.gov/viewer/
[6] See https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=116f7daa9c4d4103afda1257be82eb16
[7] See https://waterrightsmaps.waterboards.ca.gov/viewer/index.html?viewer=eWRIMS.eWRIMS_gvh#

COMPLIANCE POINT #5-1

5-1-1 Regulatory Requirement

Page #(s)	WDR Section	Summary of Requirements
Page D-5	ATT D-4.3	• SERP training and practice drills

5-1-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP including review of internal response procedures, practice drills, skilled volume estimation, and CIWQS reporting.

- For ensuring compliance, the City is conducting SERP training covering the following subjects for field staff:
    - Annual refresher training on the City's Spill Emergency Response Plan including hands-on and practical scenarios.
    - Spill Volume Estimation
    - Bypass pumping

- The City has established processes in place but no written Standard Operating Procedures (SOPS) to support the on-boarding and training of its wastewater staff. Prioritizing and developing written procedures for training and certifying the competency of its wastewater staff is recommended for the City.

- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

5-1-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, the City utilizes Attachment 2, Compliance Point #5-1.

CO1MPLIANCE POINT #5-2

5-2-1 Regulatory Requirement

Page #(s)	WDR Section	Summary of Requirements
Page D-5	ATT D-4.4	• Inventory of sewer system equipment/identification of critical replacement and spare parts

5-2-2 Compliance

- The City LRO is responsible for ensuring full compliance with an inventory of system equipment, including identification of critical replacement and spare parts.

- The City's SSMP doesn't currently include a list of system equipment and replacement parts inventory to operate and maintain the City's wastewater infrastructure. The City needs to develop a written list of critical and spare parts required to operate their system.

- The City will utilize Attachment 11 —Equipment Inventory and Critical Spare Parts List, to document spare parts and equipment needed to operate its system.

5-2-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, the City utilizes Attachment 2, Compliance Point #5-2.

COMPLIANCE POINTS #6-1

6-1-1 Regulatory Requirement

Page #(s)	WDR Section	Summary of Requirements
Page D-6	ATT D-6	• Ensure training/implementation of SERP for staff and contractors

6-1-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.
- The City performs annual drills on spill volume estimation, emergency response to spills and drills for bypass pumping.
- The City LRO is responsible for ensuring the annual review and assessment of the effectiveness of the SERP, and to update as needed. If changes are made to the SERP, employees shall be trained on the updated SERP.
- It is recommended the Sewer Department develop language with assistance from the City Attorney's office, requiring contractors to train their staff on the City's SERP prior to starting any project. The language should be included in contract documents during negotiations and requiring Contractor acceptance when signing contract documents.
- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

6-1-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, the City utilizes Attachment 2, Compliance Point #6-1.

COMPLIANCE POINT #6-2

6-2-1 Regulatory Requirement

Page #(s)	WDR Section	Summary of Requirements
Page D-6	ATT D-6	• Address Emergency Operations/Traffic Control

6-2-2 Compliance/Effectiveness

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.
- The City trains with an outside contractor and uses Cal Trans WATCH manual for guidance.
- For additional procedures, refer to the City Spill Response Field Guide.

6-2-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, City utilizes Attachment 2, Compliance Point #6-2).

COMPLIANCE POINT #6-3

6-3-1 Regulatory Requirement

Page #(s)	WDR Section	Summary of Requirements
Page D-6	ATT D-6	• Implement tech, practices, equipment, coordination

6-3-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.
- Currently the City hasn't seen the need for using technology to monitor and provide early detection within their system.
- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

6-3-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, City utilizes Attachment 2, Compliance Point #6-3.

COMPLIANCE POINT #6-4

6-4-1 Regulatory Requirement

WDR Page #(s)	Section	Summary of Requirements
Page D-6	ATT D-6	• Conduct Post-spill assessments

6-4-2 Compliance

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.
- The City LRO is responsible to conduct an assessment of every spill response to determine the effectiveness of the response, and to modify the SERP, should a deficiency be noted.
- The City will utilize forms in Attachment 8 to document its response to spills, and ensure the SERP program is utilized and modified as necessary. In addition, it would be a best practice for the first responder to write a spill narrative to be included in all spill documentation.
- The City Sewer Department conducts a failure investigation for every spill to determine the cause of the spill and identify necessary corrective actions to prevent future spills from the same location. All relevant data will be reviewed as part of the investigation to determine the appropriate corrective actions for the sewer line segment or lift station.
- For additional procedures, refer to the City Spill Response Field Guide.

6-4-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, City utilizes Attachment 2, Compliance Point #6-4.

COMPLIANCE POINT #6-5

6-5-1 Regulatory Requirement

WDR Page #(s)	Section	
Page D-6	ATT D-6	• Annually review/assess effectiveness of SERP/update

6-5-2 Compliance/Effectiveness

- The City LRO is responsible for ensuring full compliance through implementation, review, and training on the updated SERP.

- For additional details demonstrating compliance, refer to the City Spill Response Field Guide.

6-5-3 Effectiveness

- For tracking ongoing operational performance metrics required for conducting its annual review/assessment of the SERP, City utilizes Attachment 2, Compliance Point #6-5.

LIST OF ATTACHMENTS

(These attachments are designed for assisting agencies in complying with the Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems (Order No. 2022-0103-DWQ)

PART 2 (FIELD GUIDE)

LIST OF TABLES

1.0 RESPOND AND ASSESS

WDR General Order 2022-0103-DWQ Section D-6

The response begins upon notification of the potential spill. The task sequence may vary depending on the circumstance(s) encountered, and the First Responder shall exercise the best judgment while responding to and mitigating the spill's effects. The first responder shall contact their supervisor for direction as appropriate. The First Responder's Goals are to:

- Prevent, contain, control, and mitigate the spill
- Safely respond to the site as quickly as possible. The City of Fullerton has established response time goals of 10 minutes during business hours and 30 minutes for after-hour calls.
- Thoroughly assess to determine the responsibility, if additional resources are needed, and the best course of action to control and mitigate the spill.
- Collect all required data and document on forms provided.

A. Arrival

- Document the "Arrival Time" and how the call was received (dispatch, answering service, City staff, etc.) on the Sewer Spill Response Field Report
- Take a 10-second video of the spilling structure (if currently active)
- Take photos of the affected area

B. Is problem within City of Fullerton's owned/operated sewer system? (if no, proceed to C below)

The first responder will quickly assess the spill to determine the extent, the category, and the resources needed to mitigate the spill. The ***First Responder*** is responsible for the following:

- If the spill is a category 1 or 2, immediately contact the Sewer Supervisor at 714-412-1116 to make the *2-hour notification to Cal Office of Emergency Services (CAL-OES)*
- Determine the spill appearance point and attempt to contain or divert the spill. Block or plug any storm drain inlets in the spill path.
- Use storm drain maps to determine the potential destination of the spill if it has entered a storm drain conveyance system.
- Determine and request additional resources and personnel as needed.
- Setup traffic control measures to divert pedestrians away from the affected area(s).
- Determine if Raw Sewage signs need posting to alert the public.
- Determine if Contaminated Water Signs need posting and if water quality sampling is required.
- Record all field documentation, including photographs, drawings, and measurements of the spill, to complete the Field Spill Report Form.

C. Is problem due to another agency's facility?

- Contact the agency and inform them of the problem.
- Control and contain the spill to keep it from reaching a DCS and redirect the public until the agency's staff arrives.

D. Is problem due to a privately-owned facility?

- Contact the property manager, owner, or resident and inform them of their responsibility. Request they stop using all water until the problem is rectified.
- Recommend that they call a plumbing service and setup containment if there is immenent danger of the spill reaching waters of the state, danger to public health or damage to public or private property. Continue containment until the plumber arrives and clears the blockage.
- If necessary, contact the Orange County Health Care Agency at 714-4333-6000 for assistance.
- Contact your supervisor for further directions.

E. Is there a backup in a home or building?

- Advise the customer to keep people and pets out of the spill areas to not track any contamination into non-affected areas. If necessary, people should evacuate the premises.
- Contact the Sewer Supervisor to inform them of a spill event into a home or business.
- During business hours, notify Veronica Gutierrez– Risk Management Analyst 2 at 714-738-5328 of the spill.
- The owner or resident should contact a restoration company to repair any water damages, then file a claim with the City. The claim forms are available at City Hall or online at https://www.cityoffullerton.com/home/showpublisheddocument/4981/637592691709770000
- Document activities and findings on the Spill Response Field Report (Attachment 13).

2.0 SPILL CATEGORIES

WDR General Order 2022-0103-DWQ Section 5.13.1

Individual spill notification, monitoring, and reporting must be in accordance with the following spill categories:

Category 1: Any volume of sewage from or caused by a sanitary sewer system regulated under the General Order that results in a discharge to:

- A surface water, including a surface water body that contains no flow or volume;
- A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sewer system;
- Any spill volume not recovered is considered discharged to surface water unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility;
- A spill from an agency-owned and/or operated lateral that discharges to a surface water is a Category 1 spill

Category 2: A spill of 1,000 gallons or greater from or caused by a sanitary sewer system regulated under this general Order that does not discharge to a surface water.

- A spill of 1,000 gallons out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 2 spill

Category 3: A spill of 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 50 gallons and less than 1,000 gallons that spill out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.

Category 4: A spill of less than 50 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 less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.

3.0 CONTAIN AND MITIGATE

WDR General Order 2022-0103-DWQ Section 5.12 and Section D-6, 6.6 & 6.7

Containment is a primary strategy for minimizing the consequences of a spill. The environment and public health can be protected by swiftly determining the source and extent of spills, enabling containment or control. Immediately cover or plug storm drain inlets, diverting flow to a containment point. If a spill enters a drainage conveyance system or waterway, it becomes increasingly difficult to control and contain. The first responder's decisions should be based on the best action(s) for mitigation to prevent discharging to surface waters. Multiple techniques are listed in Table 1 for spill containment depending on circumstances, spill category, and available material.

Table 1- Spill Containment Strategies

Location	Strategies for Containment
Curb & Gutter	Create a berm or dam using the following: ○ Rubber Berm ○ Dry Sweep ○ Dirt ○ Sandbags ○ Deploy Absorbent Bags ○ Hydro-Vac
Open Space	○ Hand-Dig a trench to contain the spill ○ Create sandbag dam/for diverting sewage to natural low point
Drainage Channel	○ Create a Dam using sandbags or dirt ○ Use vacuum retrieval if accessible by hydro-vac
Strom Drain	○ Block inlets using rubber mats and/or sandbags ○ Plug manhole outlets using pneumatic plugs or sandbags ○ Plug outfall manhole to prevent discharge into the environment
Backup In Building	○ Attempt to remove cleanout caps to allow the sewage to discharge outside the building ○ Establish containment using the most effective method from above
Creeks/Streams (Low flow only)	○ Create Sandbag Dams ○ Install a silt fence to contain floating solids ○ Contact the local health department or Fish and Wildlife for direction NOTE: Containment attempts should not negatively impact aquatic life

4.0 EMERGENCY SYSTEM OPERATIONS

WDR General Order 2022-0103-DWQ Section D-6, 6.5

First responders may need to set up temporary traffic control to protect the public's health and safety in the event of a street collapse or undermining of a roadway. Temporary traffic control allows crews responding to safely contain and clear the blockage and prevent sewage from further dispersing by vehicular traffic. In addition, responding crews shall use temporary traffic control devices or barriers to divert the public from contact with the spill. If needed, the City of Fullerton can request additional help from the Police Department for traffic control. City of Fullerton uses the Cal Trans Work Area Traffic Control Handbook (WATCH) for temporary traffic control.

5.0 CORRECT CAUSE AND RESTORE FLOW

Correcting the cause and restoring flow depends on the type of Agency infrastructure the spill is discharging from.

A. Mainline

If the blockage is in the main, it will be between a manhole with little to no flow and a manhole surcharging or spilling. Response crews should set up the hydro-vac or jetter truck on the dry manhole, downstream from the surcharged manhole, to clear the blockage and restore flow. Clear the blockage and observe the flow in the manhole to ensure the blockage doesn't reoccur downstream. If it is difficult to remove the blockage, increase containment, request an additional Hydro-Vac or initiate bypass pumping to control flows. Request additional assistance to CCTV inspect the line to assess the problem. If needed, contact your supervisor for assistance.

6.0 SPILL SPECIFIC MONITORING

WDR General Order 2022-0103-DWQ Section D-6, 6.3 & E-1, 2.1

The City of Fullerton shall visually assess the spill locations and spread using photography, a global positioning system (GPS), or other best available tools. In addition, a best practice would be to provide a drawing of the spill spread and dimensions specific to the spill. In the drawing, indicate the spill's final destination or containment point. The City of Fullerton shall document the spill locations, including;

A. Photography and GPS coordinates for:

- The system location where the spill originated. If multiple spill appearance points exist, use the point closest to the spill origin;
- Include GPS coordinates for the spill destination or containment point if available
- Drainage conveyance system entry locations
- The locations of discharge to surface waters, if applicable
- The extent of the spread, and
- The location(s) of the spill clean up

7.0 INITIATE SPILL CLEAN UP

WDR General Order 2022-0103-DWQ Section 5.12 & Section D-6, 6.9

Recovery and thorough cleanup are necessary for all sewer spills. When recovering spills, all solids and materials should be recovered and removed from the site, and every effort should be made to recover as much of the spill as possible. Disinfection of contaminated soil or drainage ways is only performed when directed by Orange County Health Care Agency or California Department of Fish and Wildlife. Any water that is used in the cleanup process should be de-chlorinated before using.

Sewer staff will post signs, place barricades, and other traffic control devices as needed to keep vehicles and pedestrians away from the spill area. Additionally, all posted warning signs in critical public areas, such as parks and creeks, shall be left in place until the Orange County Health Care agency or Regional Board staff authorizes removal.

Procedures for cleaning affected areas after a spill are as follows:

A. Backups in Building

- Under no circumstances should City staff enter a residence.
- If the backup is due to a blockage or failure in the City of Fullerton's system, the resident should reach out to a restoration and remediation company to repair any water damage, followed by filing a claim with the City.

B. Street, Curb or Gutter or Hardscape

- Remove all debris and solids with broom, shovels and wash down water
- Before removing any contaminated soil and plants, photograph the area and speak to the property owner.
- Wash pavement, curb and gutter area, with the high-pressure wand, then vacuum all wash water with a hydro-vac.
- Photgraph the entire area after cleanup is completed.

C. Open Area/ Landscape

- In an open area that is primarily dirt, response crews shall use either a hydro-vac vacuum nozzle or dig and remove dirt until a dry layer is visible.
- If the area is a grass landscaped area, flush the spill area with copious amounts of water and vacuum the area thoroughly.

D. Natural and Man-Made Waterways

- Contain contaminated creeks where feasible. Remove all contaminated water by pumping to the collection system or vacuuming using a vacuum truck and return all collected water to the sewer system. Introduce additional wash water to flush contaminated areas towards the containment area.
- Photograph the area(s) cleaned to confirm the spill has been thoroughly cleaned, and document the locations on the Field Spill Report form

8.0 REMOVE SEWAGE FROM DRAINAGE CONVEYANCE

WDR General Order 2022-0103-DWQ Section 5.12 & Section D-6, 6.8 & 6.9

First responders and cleaning crews must take photographs or videos to verify the conditions before and after cleaning activities. Response crews shall remove all sewage that has entered the drainage conveyance system by vacuuming all water, debris, solids, and paper in the drainage conveyance system. The City of Fullerton will use GIS mapping to establish the flow direction within the Drainage Conveyance System (DCS) and set up containment below where evidence of the sewer spill has ended. With containment in place, either hydro-jet the storm drain or flush the affected area with water to the containment location and vacuum water and debris.

The City of Fullerton determines the condition of the DCS when deciding to hydro-jet. If the pipe condition may damage the hydro-vac equipment, flushing to the containment point is the best option. Once thoroughly cleaned, remove the containment and flush and vacuum the remaining area, capturing all water.

9.0 REGULATORY NOTIFICATION/REPORTING REQS.

WDR General Order 2022-0103-DWQ Section D-6, 6.3

The notification requirements of this section apply to all spills resulting from a failure or blockage in the City of Fullerton's owned and /or operated sanitary sewer system regulated under this Order. Table 2 will aid field staff, data submitters and the LRO (s) in meeting the requirements for notification and reporting in the re-issued general order. Once the event is complete, Collection staff will provide the draft event summary to be submitted into CIWQS within the required timeframe (See Table 2).

Table 2 - Monitoring and Reporting

Spill Category	OES Notification	Monitoring	Draft Report	Certified Report
Category 1 Any volume of sewer discharging to surface water	• Within 2 hours of the Agency's knowledge of the spill of 1,000 gallons or greater discharging or threatening to discharge to surface waters. • Obtain a Control number from OES	• Conduct spill-specific monitoring. • Conduct water quality sampling within 18 hours of knowledge of a spill 50,000 gallons or greater to surface waters	• Due within 3 business days of knowledge or self-discovery of Category 1 spill.	• Due within 15 calendar days of the spill end date. Upon completion, the CIWQS will issue final spill event ID number. • Submit Technical Report within 45 calendar days after the spill end date for spill greater than 50,000 gallons. • Submit the Amended Report within 90 calendar days after spill end date
Category 2 Spills of 1,000 gallons or greater that do not discharge to waters of the State	• Within 2 hours of the Agency's knowledge of the spill of 1,000 gallons or greater discharging or threatening to discharge to surface waters.	• Conduct spill-specific monitoring.	• Due within 3 business days of the Agency's knowledge of the spill	• Due within 15 calendar days of the spill end date. Upon completion, the CIWQS will issue final spill event ID number. • Submit Amended reports within 90

Spill Category	OES Notification	Monitoring	Draft Report	Certified Report
	• Obtain a Control number from OES			calendar days of Certified Report due date
Category 3 Spills of 50 gallons to less than 1,000 gallons that don't discharge to surface waters	• N/A	• Conduct spill-specific monitoring.	• N/A	• Due 30 calendar days after the end of the month in which the spills occurred. After LRO certifies the spill, CIWQS will issue a spill identification number for each spill. • Submit Amended reports within 90 calendar days of Certified Report due date
Category 4 Spills less than 50 gallons that don't discharge to surface waters	• N/A	• Conduct spill-specific monitoring.	• N/A	• Within 30 calendar days after the end of the month in which the spills occurred, certify monthly the volume spilled and the total number of spills. • Upload and certify a digital report of all Category 4 spills in CIWQS by 1 FEB after the end of the calendar year in which the spills occur.

10.0 REGULATORY NOTIFICATION PROCEDURES

WDR General Order 2022-0103-DWQ Section D-6, 6.1 & 6.2

If a spill that discharged in or on the waters of the State or discharged to a location where it will probably be discharged to the waters of the State, the City of Fullerton shall notify the Office of Emergency Services (OES) and obtain a control number as soon as possible, but no later than 2 hours after becoming aware of the discharge; and notification can be provided without substantially impeding clean-up or emergency measures. Tables 3 and 4 below provide the required contacts for complying with the regulatory notification requirements. During business hours, the Sewer Supervisor will make the required notifications. The Sewer Supervisor or their designee will handle after-hours notification requirements.

Table 3 -Internal Regulatory Notification Contacts

Agency	Name	Number	Notes
City of Fullerton	Stephen Bise- Public Works Director	714-738-6852	LRO
City of Fullerton	Anthony Reynoso – Sewer Supervisor	714-412-1116 (M) 714-738-2802 (O)	LRO/Data Submitter
City of Fullerton	TBD		Data Submitter
City of Fullerton	Veronica Gutierrez – Human Resources Analyst II	714-738-5328	Property Damage/Claims
City of Fullerton	Delaney Felix – Water Quality	714-738-2835	WQ Sampling

Table 4- External Regulatory Notification Contacts

Agency	Number	Notes
CA Office of Emergency Services	(800) 852-7550	Obtain a control number and contact name
Regional Water Quality Control Board (RWQCB) Region 8	951-782-4130 RB8SpillReporting@waterboards.ca.gov	Leave a voicemail with date/time. Send follow up email.
Orange County Health Care Agency	714-4333-6000 ehealth@ochca.com	Environmental Compliance
CA Department of Fish and Wildlife- Region 5	865-467-4201 AskR5@wildlife.ca.gov	Guidance for Sensitive Riparian areas

11.0 RECEIVING WATER SAMPLING

WDR General Order 2022-0103-DWQ Section E-1, 2.3

For sewage spills in which an estimated 50,000 gallons or greater are discharged into surface water, the City of Fullerton shall conduct water quality sampling no later than 18 hours after the knowledge of a potential discharge to a surface water. Samples will be collected and preserved by either the Water Quality or Public Works sewer staff, following established field sampling and standard operating procedures.

In addition, the City of Fullerton shall gather information during and after the spill event to assess the spill magnitude and update its notification and estimated spill volume. The water quality sampling results will enable the division to prioritize areas of concern regarding water quality impacts.

A. Spill Assessment

Through visual observation, spill volume-estimating and field calculation techniques, the City of Fullerton shall gather and document the following information for spills discharging into receiving waters:

1. Estimated spill travel time to receiving water; for spills entering a drainage system
    - Estimated travel time from point of entry to point of discharge into receiving water
2. Spill travel time can be calculated by:
    - Travel time based on standard pipe design slope/velocity (2 feet per second, fps)
    - Timed field flow test (water/marker released in clean flowing pipe timed/measured over total distance traveled)
3. Estimated spill volume entering receiving water
4. Photographs:
    - Waterbody bank erosion
    - Floating matter
    - Water surface sheen (potentially from oil and grease)
    - Discoloration of receiving water
    - Impact to the receiving water
    - Other

B. Water Quality Sampling and Analysis

Surface water samples will be collected using a grab sample technique. Employees must wear clean, new nitrile laboratory gloves when collecting all samples.

1. Trigger for Sampling: Water quality sampling is required within 18 hours of initial spill notification for Category 1 spills in which 50,000 gallons or greater are spilled into a surface water.

2. Safety and Access: Water quality sampling should only be performed if it is safe to do so and access is not restricted or unsafe. Unsafe conditions include traffic, heavy rains, slippery or steep creek banks, visibility issues, high-flowing creeks, and limited access due to soil conditions or poor terrain. If access restrictions or unsafe conditions prevent compliance with these monitoring requirements, the City of Fullerton shall provide documentation of the access restriction or safety hazards in the required report.

3. Where to Sample: The City of Fullerton must use the best professional judgement to determine the upstream and downstream distances based on receiving water flow, accessibility to waterbody banks, and size of visible plume. Collect one sample each day for the duration of the spill. In addition, the City of Fullerton shall collect receiving water samples from the following locations.

    - A point in the drainage conveyance system before the flow discharges into the receiving water. Label this sample DCS-001

    - Point of Discharge into the receiving water where sewage initially enters the receiving water. Label this sample RSW-001

    - Upstream Sample – A point in the receiving water upstream of the point of sewage discharge. Label this sample RSW-001U

    - Downstream Sample – A point in the receiving water downstream of the point of discharge where the spill is thoroughly mixed with the receiving water. Label this sample RSW-001D

Determine the water velocity in the stream or body of water during the spill. Dropping debris in the stream and timing how long the debris takes to travel a known distance is a good indicator of the water velocity present. Use this information to determine the next downstream sampling point. Then, multiply the water velocity by the spill duration to determine the furthest point downstream to sample.

C. Required Water Quality Analyses

All samples will be immediately transported to ?? Laboratory for sample analysis. Analysis, at a minimum, will include the following:

1. Ammonia
2. pH
3. Electrical Conductivity
4. Bacterial indicators, such as total and fecal coliform, enterococcus, and e-coli, per the regional Basin Plan or as directed by SWRCB
5. Temperature

D. Equipment and Supplies

The following items and PPE are required for sampling:

1. Cooler with Ice Packs
2. Clean sampling bottles, appropriate for parameters – Coliform samples bottles must be sealed up to the point of sample collection
3. Nitrile gloves
4. Safety glasses
5. Marking pen
6. Field log forms for notes and observations
7. Chain of Custody for lab samples
8. Portable meter, if available, to record Temperature, pH and EC in the field (if a meter is not available, collect samples to be run in laboratory)

E. Sampling Procedures

Put on the required PPE prior to sampling (safety glasses and nitrile gloves)

1. Drainage Conveyances: sample in drainage conveyance system before wastewater source flow discharging into receiving water. Field staff should collect this sample before starting to clean up spill
    - Label this sample DCS-001 and take pictures of sampling location
    - Avoid any debris or scum layer from the drainage system
    - Fill bottle against direction of flow, replace the cap, and secure sample to avoid contamination
    - Use a thermometer to measure sample temperature and record results
2. Receiving Water: sample approximately 100 feet upstream of wastewater source flow
3. Point of Discharge: sample approximately 10 feet downstream of the location where the spill enters the receiving stream.
    - Label the bottle RSW-001 and take a pictures of sampling location.
    - Sample away from the bank and avoid any debris or scum layer from the surface.
    - Fill the bottle against the direction of flow, replace the cap, and secure the sample to avoid contamination.
    - Use a thermometer to measure the temperature, pH and EC of the source sample location and record the results.
4. Downstream Sample**: s**ample approximately 100 feet downstream of the source.
    - Label the bottle RSW-001 and take a pictures of sampling location.
    - Sample away from the bank and avoid any debris or scum layer from the surface.
    - Fill the bottle against the direction of flow, replace the cap, and secure the sample to avoid contamination.
    - Use a thermometer to measure the temperature, pH and EC of the source sample location and record the results.
5. Following Collection: store all samples in a cooler with ice packs until delivered to laboratory and ensure all information is properly completed on Chain of Custody (COC) with signatures for laboratory staff.

12.0 FINAL SPILL VOLUME ESTIMATION

WDR General Order 2022-0103-DWQ Section E-1, 2.3

The final spill volume estimation is critical for CIWQS reporting and determines whether additional reporting to regulatory agencies is required. Additionally, the City of Fullerton shall update its notification and reporting of estimated spill volume, including spill volume recovered, as further information is gathered during and after a spill event. To assess the approximate spill magnitude and spread, the City of Fullerton shall estimate the total spill volume using updated volume estimation techniques, calibration, and documentation for CIWQS reporting.

The City of Fullerton trains on the following methods for volume estimations:

A. Measured Area/Volume

- The spill volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and depth of the contained wastewater are needed. This information is used to calculate the area and volume of the spills. Measured volume is not an appropriate estimation matrix if the spill occurs during a rain event.

B. Duration and Flow

- The spill volume can be estimated by multiplying the spill duration by the spill rate. The spill rate can be determined by pick hole or vent hole spill height, flow meter data, SCADA information, and pump data from lift stations.

C. Upstream Connections/EDU

- This method can be used for spills from residential properties when enough information has been gathered through interviewing the resident. Be clear with your questions and explanation for the interview. Only interview residents from the household contributing to the spill

13.0 SPILL EVENT DOCUMENTATION

WDR General Order 2022-0103-DWQ SectionD-6, 6.13

During business hours, the Public Works Dispatch staff will receive the call for service and gather caller information. Afterward, they will contact the Sewer Maintenance Department who will dispatch a sewer system operator to assess the call. The City of Fullerton's Police Department Dispatch handles after-hours calls for service. The Dispatcher will gather the caller's details and then reach out to the Night Response Unit, the sanitation crew or standby crew for after-hours assistance. The First Responder will collect information for the service request form and capture all necessary details about the spill event including notes, all times, equipment, and resources used during spill mitigation and closes the service request. This form provides the necessary information for the City of Fullerton to respond to the spill and document its actions.

The First Responder will also fill out the Spill Response Field Form, recording the complete spill event according to the General Order. Upon completion, the First Responder will deliver the Spill Response Field Report, event photos, service request, and any necessary additional forms to the Sewer Supervisor for evaluation. Once the information is reviewed and verified, the Data Submitter submits it on CIWQS for certification.

After reviewing the draft report and the documentation, either the Sewer Supervisor or the Director will certify the spill report in CIWQS. The Sewer Supervisor or designee will create a specific file containing the following information for each spill.

- SPILL Field Report
- CIWQS-certified reports
- All incident correspondence, field notes, and customer interviews.
- Volume estimate calculations of spilled and recovered volumes.
- Appropriate maps showing the spill location, sampling, and signage location if applicable.
- Photographs of spill location.
- Water quality sampling and test results, if relevant.

(For additional references, refer to SERP PART 1 (COMPLIANCE GUIDE).

Attachment 1 —WDR Implementation Guidance (SWRCB)

The SERP implementation guidance provided by the State Water Board in this attachment is designed for helping sewer managers and operators comply with the Reissued WDR (Order No. 2022-0103-DWQ).

No.	WDR	SERP Key Performance Indicators (KPIs)	Evaluation Frequency	Annual Success Rate (%)
COMPLIANCE POINT #1				
1.1	5.7	Annual Emergency Response Operations Expenditures vs. Budget Amount	Annual	
1.2	5.7	Annual Emergency Response Equipment Expenditures vs. Budget Amount	Annual	
COMPLIANCE POINT #2				
2.1	5.12	SERP Certified in Annual Report is Up to Date	Annual	
2.2	5.12	Annual Review/Assessment of SERP Completed by Required Due Date	Annual	
2.3	5.12	SERP Modifications Documented in Change Log	Each Modification	
2.4	5.12	Spill Volume Recovered and Properly Disposed vs. Total Volume Spilled	Annual	
2.5	ATT D-6	Cat. 1 Spills Prevented Due to Containment Operations vs. all Cat. 1 spills	Annual	
2.6	ATT D-6	Spill Volume Recovered from Drainage Conveyance Systems (DCS) vs. total volume entering DCS	Annual	
2.7	5.13	Response Time Goals Met (Response = Receipt of Call to operator arrival)	Annual	
COMPLIANCE POINT #3				
3.1	5.13	Field Records Match Data Input into CIWQS (each Report)	Annual	
3.2	ATT D-6	Outside Agencies and Internal Contacts Up to Date	Annual	
3.3	ATT D-6	Cat. 1 Spills Requiring Water Quality Monitoring Sampled w/in 18 hours	Each Event	
3.4	ATT D-6	Compliance with Regulatory Reporting and Notification Deadlines	Annual	
3.5	ATT D-6	Field Data Collection Forms Verified for Completeness and Accuracy	Each Event	
3.6	ATT D-6	Spill Notifications from the Public and Remote Sites Functioned as Intended	Annual	

No.	WDR	SERP Key Performance Indicators (KPIs)	Evaluation Schedule	Success Rate (%)
COMPLIANCE POINT #4				
4.1	ATT D-3	Easements Inspected to Ensure Access	Semi Annual	
4.2	ATT D-3	Obtain Easement Access Agreements	Annual	
4.3	ATT D-3	Number of times Easement Access Inhibited Spill Response Activities	Annual	
4.4	ATT D-3	Adherence to Agreed-Upon Coordination/Procedures w/Storm Drain Owner	Each Event	
COMPLIANCE POINT #5				
5.1	ATT D-4	SERP Training and Assessments Performed for all Appropriate Field Staff	Annual	
5.2	ATT D-4	Response Staff Training Records Complete and Up to Date	Annual	
5.3	ATT D-4	Response Staff Participation in Annual Spill Response Drills	Annual	
5.4	ATT D-4	Response Staff Qualified on Response Drill Procedures and Practices	Annual	
5.5	ATT D-4	Equipment Inventory and Critical Spare Parts List Up to Date	Annual	
5.6	ATT D-4	Contractors Trained and Documented in Accordance with SERP	Annual	
COMPLIANCE POINT #6.2				
6.2	ATT D-6	Adherence to SERP for Emergency System Operations/Response Activities	Annual	
COMPLIANCE POINT #6.3				
6.3	ATT D-6	Effective Implementation of Technologies and Inter Agency Coordination	Annual	
6.4	ATT D-6	Effective Implementation of Established Mutual Aid Coordination	Annual	
COMPLIANCE POINT #6.4				
6.5	ATT D-6	Post Spill Assessments Completed for Each Spill Event	Annual	
6.6	ATT D-6	Modifications to SERP Implemented or Scheduled	Annual	

Spill Start Time Estimation Worksheet

Milestones				
Agency Notified	Date:		Time:	☐ AM ☐ PM
Spill First Observed By Caller	Date:		Time:	☐ AM ☐ PM
Caller Observed Not Spilling	Date:		Time:	☐ AM ☐ PM
Spill First Observed by Agency	Date:		Time:	☐ AM ☐ PM
Spill End Time	Date:		Time:	☐ AM ☐ PM

Caller/Witness Description of the Spill

First Responder Description of the Spill

Site Conditions		
Evidence of Solids ☐ YES ☐ NO	Distance Solids Traveled from Spilling Structure:	Feet
Other Observations:		
Spill Rate: GPM	Method to Determine Spill Rate:	

Calculation Sheet (Can Be Used if Volume Can Be Determined without Duration i.e., Measured Volume Method)								
Spill Volume	Gals	÷	Spill Rate	GPM	=	Duration:	Minutes	
Spill End Time	☐ AM ☐ PM	-	Duration	Minutes	=	☐ AM ☐ PM		

Describe How Information Was Used to Establish the Basis for Spill Start Time Estimate
☐ Attachments

Responsible Person			
Estimation Determined By:		Date:	
Spill Event ID (From CIWQS)		Spill Name:	
Start Time: ☐ AM ☐ PM **Date:**			

Spill Start Time Estimation Worksheet

Start Time: The start time is sometimes difficult to establish. Many times, a combination of methods will need to be employed. Here are some approaches:

Nearby Witnesses: Residents and/or witnesses' interviews can be used to establish the start time. Inquire as to their observations. Spills that occur in public rights-of-way (streets, shopping centers, etc.) are usually observed and reported promptly. Spills that occur out of the public view (fields, access roads, etc.) can go on longer.

Observed Spill Rate + Volume: If the spill rate and volume spilled can be reasonably determined, this information can be used to work backwards to better determine the spill start time. Example. If the spill was discovered at 9:00 am, crews determined the spill rate was fl10 GPM and you were able to completely contain and measure the spill, which was 540 gallons. The spill end time was 9:26 am.

540 gals / 10 GPM = 54 minutes. The spill end time was 9:26. Go back 54 minutes from the spill end time and you would arrive at a spill start time of 8:32 am. This assumes that the spill rate was the same throughout the entire spill. You can consider the diurnal flow patterns, if available, and fine-tune the start time.

Telemetry Data: Lift stations and flow recorders utilize SCADA and Manholes and vaults can be monitored using Level Sensors. The data collected by these devices will indicate when flows have changed due to a blockage. A blockage upstream or downstream of a flow recorder will cause measured flows to increase or decrease. A blockage upstream of a lift station will reduce the flows into the station and cause the pumps to run less frequently. Comparing typical daily flows to the change in flows due to a blockage can help to determine spill start time.

Site Conditions: Conditions at the spill site change over time. Initially there will be limited deposits of toilet paper and other sewage solids. As time goes on, sewage solids turn black and cause staining. The quantity of toilet paper and other materials of sewage origin increase over time. The sewer solids/tissue paper will dry over time. These observations can be used to help estimate the start time and to support assumptions. Taking photographs to document the observations can be helpful if questions arise later in the process. In addition, A low spill rate and a large amount of sewage spilled might indicate a longer duration.

Accounting for Flow Variation: It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). Refer to agency diurnal flow patterns for typical flow variations. Response personnel should open the first manhole downstream from the blockage and, if flow is observed, measure, document and take pictures.

Spills that occur due to peak flows in excess of capacity will occur only during, and for a short period after, heavy rainfall. Use available rainfall data as appropriate.

Interviews: Interview the caller and ask, "when did you first observe the spill." Also ask "can you recall the last time you observed it was not spilling." This will help you to establish a Start Time window. "…I first noticed the spill at 8:20 am. Last night when I came home from dinner at 7:30 pm last night it was not spilling." This information in conjunction with spill volume, spill rate, site data, personal experience, etc. can help to make the best estimation under the circumstance.

Is it Reasonable: When you believe you have done all you can and you have reached a conclusion, ask yourself "… is it reasonable to believe this spill began at (time) based on all the other evidence.

End Time: The end time is usually much easier to establish. Once the sewage is contained in the system (e.g., in the manhole, wet well, clean out, etc. the spill has ended.

Duration and Flow Rate Worksheet

Table A		
Spill Start Time (See Spill Start Time Estimation Worksheet)	1	Date/Time:
Spill End Time (See Spill Response Field Report, Page 4)	2	Date/Time:
Duration (Subtract 1 from 2)	3	Minutes
Spill Rate	4	GPM
Total Volume (Multiply #3 x #4)	5	**Gallons**

Required Photo & Video	
☐ Photo of Spilling Structure Attached	☐ 10-Second Video of Spilling Structure on File

Method to Determine Spill Rate	
☐ Flow Monitoring	☐ Single Family Home Flow Chart
☐ Spill Rate Calculator	☐ Photo Comparison
☐ Visual Method (Only for Low Spill Rates ≤ 10 Gallons)	
☐ Other:	
Notes:	
☐ Attach Calculation Worksheets	

Responsible Person			
Estimation Determined By:		Date:	
Spill Event ID (From CIWQS)		Spill Name:	

Measured Volume Spill Estimation Worksheet

Spill Event ID (from CIWQS) _____ Spill Name: _____

* Depths: Asphalt = 0.0013′ Concrete = 0.0026′ Ponding = Average Measured Depth

Table A

Area ID	Surface	Length	x	Width	x	% Wet	Depth*	=	Volume (c.f.)
			x		x			=	
			x		x			=	
			x		x			=	
			x		x			=	
			x		x			=	

☐ Attach Photo(s) of Wetted Perimeter (Spill Footprint) Total Volume:

Table B

Total Volume:		**x**	**7.48 (Gallons/Cubic Foot)**	**=**		**Gallons**
Completed By: _____ Date: ____/____/____						

Measured Volume Spill Estimation Worksheet

This method can be used when:

- The limits of the wetted area can be determined.
- The surfaces are dry prior to the spill.
- Sewage has left a wet stain on hard surfaces.
- Sewage has ponded and the depth can be measured.
- Sewage is contained in a structure like a storm drain or vault.

The Procedure on hard surfaces:

Step 1. **Sketch the perimeter of the spill/wetted area.**

Step 2. **Identify the surface type.**

i. Determine the depth of the wet area.

Step 3. **Break down the wetted area into shapes using rectangles and/or squares.**

i. Use cones to mark the corners of the shape.

a. This improves measurements.

b. Helps ensure all portions of the wetted area are measured.

c. Helps ensure the same area is not measured twice.

Step 4. **Label Each Shape (This is the Area ID)**

i. Use Letters so they are not confused with the measured dimensions.

Step 5. **Measure each shape.**

Step 6. **Estimate the percentage of the shape that is wet.**

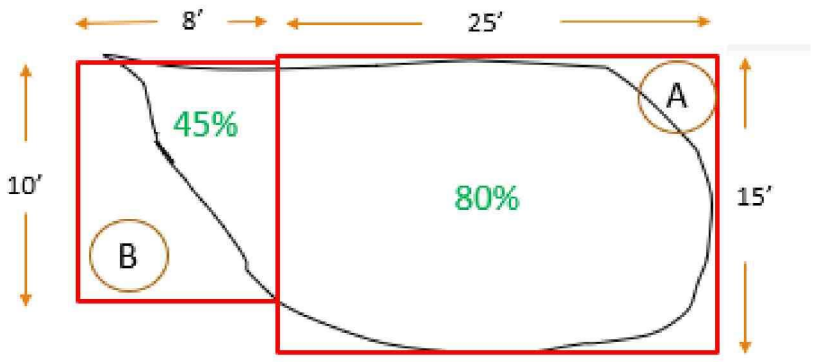
Step 7. **Complete Table A**

i. Transfer Total Volume to Table B

Step 8. **Complete Table B**

Step 9. **Sign and date to indicate who completed the form.**

Example



Upstream Connections Spill Volume Estimation Method

NOTES:

- A Single-Family Residential Unit is One Equivalent Dwelling Unit (EDU)
- This Method Can Be used for a Single Home/Building or Multiple Homes/Buildings

Procedure:

Step 1: Determine the Location of the Blockage

i. This May Require CCTV Inspection

(values in highlighted cells are established by the agency)

Step 2: Determine the Use Type for Each Connection

i. Single Family Residential (1 EDU)
ii. Multi-Family Residential (1 EDU for each Residence)
iii. Commercial/Industrial (# of EDU's Per Agency Records)

Step 3: Count the Number of Connections Upstream from the Blockage

i. If a Building is Known to Be Vacant, Do Not Include It

Step 4: Determine the Number of EDUs for each Use Type (Enter into Table A)

Step 5: Determine Duration of the Spill (Difference Between Start Time and End Time)

i. In Table B, Column E, Enter the Time the Spill Was Active for that Time Period
ii. Multiply Column D x Column E and Enter into In Table B, Column F,
iii. Total Column F for all Time Periods

Table A	
Use Type	**EDU**
Single Family Residential	
Multi-Family Residential	
Commercial/Industrial	
Total EDU's	

Table B	Estimated Flow Rate Per EDU (190 gpd)				Spill	
	A	B	C	D	E	F
Time Period	Gallons Per Period	Hours Per Period	A÷B = Gals. Per Hour	C÷60 = Gals. Per Min.	Minutes Spill Was Active	D x E= Gallons Spilled Per Period
6am -Noon	75	6	12.5	.21		
Noon – 6pm	55	6	9.16	.15		
6pm - Midnight	50	6	8.33	.14		
Midnight -6am	10	6	1.67	.03		
Total Estimated Spill Volume per EDU:					(G)	

Table C				Calculation					
Spill Volume/EDU:		Gals.	x	# of EDU's		=	Est. Spill Volume		Gals.
(from Table B, Cell G)				(from Table A)					

Sewer Spill Response Evaluation Worksheet

Spill Event ID: _____ **Spill Event Name:** _____

1. Notification and Communication Procedures

a. Were notification procedures adhered to? ☐ Yes ☐ No

b. Were notification procedures effective? ☐ Yes ☐ No

2. Response Procedures

a. Were response time goals met? ☐ Yes ☐ No

b. Were safety procedures adhered to? ☐ Yes ☐ No

c. Were safety procedures effective? ☐ Yes ☐ No

d. Were initial response procedures adhered to? ☐ Yes ☐ No

Sewer Spill Response Evaluation Worksheet

2. Response Procedures

e. Were initial response procedures effective? ☐ Yes ☐ No

f. Were containment procedures adhered to? ☐ Yes ☐ No

g. Were containment procedures effective? ☐ Yes ☐ No

h. Were clean up and recovery procedures adhered to? ☐ Yes ☐ No

i. Were clean up and recovery procedures effective? ☐ Yes ☐ No

j. Were Sewer Back up procedures adhered to? ☐ Yes ☐ No ☐ N/A

Sewer Spill Response Evaluation Worksheet

2. Response Procedures

k. Were Sewer Back up procedures effective? ☐ Yes ☐ No ☐ N/A

l. Were coordination procedures with Storm Drain Owner/Department adhered to? ☐ Yes ☐ No ☐ N/A

m. Were coordination procedures with Storm Drain Owner/Department effective? ☐ Yes ☐ No ☐ N/A

3. Reporting and Notification Procedures

a. Were reporting and notification timeline requirements met? ☐ Yes ☐ No

4. Documentation

a. Was Spill file created? ☐ Yes ☐ No

Sewer Spill Response Evaluation Worksheet

4. Documentation

b. Was field data verified and does it match CIWQS Records? ☐ Yes ☐ No

c. Was Failure Analysis Performed? ☐ Yes ☐ No

a. Were Any Corrective Actions Implemented as a Result? ☐ Yes ☐ No

5. Recommended Changes: ☐ N/A

Sewer Spill Response Evaluation Worksheet

Attendees:

Facilitated by:

	Date / /

Training Record

Notification and Communication Procedures

Trainer: _____ Trainer Position/Company: _____

Training Location/Environment: _____

Basis for Training & Materials Used:

1.	2.
3.	4.
Comments:	
(Basis Examples: SOP, Power Point, Manufacturer's Recommendations, on-the-job-training. Reference Title when applicable)	
Training Description	Attachments: ☐

(Describe in detail what training entailed)

Training Method: (Check all that apply) Attachments ☐

☐ Classroom/Instructor ☐ Breakout Sessions ☐ Tabletop Exercise ☐ Drill ☐ Hands-on

☐ Coaching/Mentoring ☐ Role Playing ☐ Computerized/on-line Training

☐ Other: _____

Method to Qualify Trainees: (Check all that apply) Attachments ☐

☐ Exam/Quiz ☐ Assessment of Ability ☐ Attendance/Participation

☐ Other: _____

(Maintain Qualifying Records with Training Records)

Trainer Signature: _____ Date: _____/_____/_____

Length of Training (Time) _____ hours

Training Record

Signature Sheet

Trainee Name (Print)	Signature	Qualified	Qualified By (initials)
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	

Training Record

Trainee Name (Print)	Signature	Qualified	Qualified By (initials)
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	

Cleaning Services Declination Waiver

Customer Name:			
Customer Address:			
Customer Phone:	(H)	(W)	(C)

On (date) _____ at (*time*): _____ approximately _____gallons of (*check one*):

☐ Sewage ☐ Grey Water ☐ Toilet Bowl Water ☐ odor ☐other

Overflowed from/odor emanating from:

☐ Toilet ☐ Shower/Tub ☐ Toilet Bowl Water ☐ Washer ☐other

☐ Other (*specify*): _____

The overflow affected the following area:

☐ Bathroom ☐ Hallway ☐ Kitchen ☐ Dining Room ☐ Living Room ☐ Crawlspace

☐ Other (*specify*): _____

The overflow affected the following materials:

☐ Tile ☐ Linoleum ☐ Carpet ☐ Wood Flooring ☐ Area Rugs

☐ Towels ☐ Clothing ☐ Other (*specify*): _____

Photos were/were not taken (*circle one*): _____ # of photos taken.

This Form Completed By: _____ Date & Time: _____

I/We acknowledge that _____(AGENCY) has offered to provide professional cleaning and decontamination services to remediate the sewage backup and/or overflow described above and that I/We declined the offer. I/We further understand and acknowledge that because I/We have declined the AGENCY's offer of assistance, the AGENCY will not be responsible for any necessary remediation activities and will not be responsible for any expenses incurred as a result of this incident.
I/We understand that by signing this form, I/We hereby waive any and all claims I may have against the AGENCY as a result of the sewage backup and/or overflow described above.
The information above was explained to the customer by (*please print*):

Employee Signature: _____ Title: _____

Customer Signature: _____ Date: _____

Equipment Inventory – Critical Spare Parts List

Agency shall Maintain an inventory of sewer system equipment, including the identification of critical replacement and spare parts.

[1] If an Item can be used at Lift Stations (i.e., pump, portable generator, relay, etc.) list stations that item can be used.

Critical?	Item ID (If Applicable)	Item Description	Manufacturer	Qty	[1] Lift Station Compatibility (List Stations Item Can Be Used)	Storage Location
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						

Equipment Inventory – Critical Spare Parts List

Critical?	Item ID (If Applicable)	Item Description	Manufacturer	Qty	[1] Lift Station Compatibility (List Stations Item Can Be Used)	Storage Location
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						
☐						

Spill Data and Trends Worksheet

Asset ID	Spill Date	Spill Category	Age	Pipe Material	Dia.	Spill Cause	Cause Location	Repeat Location	Notification Category	Response Time (min)	Response Goal (min)	Response Outcome	Volume Spilled	Volume Recovered	% Recovered	2-Hour Notification Met?

Attachment 12a (Cal-OES Notification Log)

(WDR - E1, Sections 1.1, 1.2 and 1.3 Notification Requirements and 4.3 Spill Reports)

"…Shall Provide the following spill information to the Cal-OES before receiving a Control Number, as applicable:"

Name of Agency Responsible for the Spill: _____

Person Notifying Cal-OES: Name: _____ Phone: _____

Notification Time: _____ ☐ AM ☐ PM Date: _____/_____/_____

When was Agency Informed of the Spill? Time: _____ ☐ AM ☐ PM Date: _____/_____/_____

This is Internal Documentation and Does Not Have to be Reported to Cal-OES

Was 2-Hour Notification Delayed Because it would have Substantially Impeded Response Efforts? ☐ *Yes* ☐ *No*

Explain Reason(s) for Delay: _____

_____ ☐ *N/A*

Estimated: Spill Volume: _____ Gals. Spill Rate: _____ GPM Volume Contained: _____ Gals.

Estimated Spill Rate Directly or Indirectly to Waters of the State: _____ GPM ☐ N/A

Name of Water Body Receiving or Potentially Receiving Discharge: _____

Description of Water Body Impact and/or Potential Impact to Beneficial Uses: _____

_____

Spill Incident Description: _____

_____

Spill Location: City: _____ Address/Street Number: _____

Street: _____ Cross Street or Landmark: _____

Contact Person on Scene: Name: _____ Phone: _____

Spill Cause or Suspected Cause: _____ ☐ Unknown

Name of Cal-OES Representative: _____ **Control Number:** _____

Attachment 12a (Cal-OES Notification Log)

(WDR - E1, Sections 1.1, 1.2 and 1.3 Notification Requirements and 4.3 Spill Reports)

"…Shall Provide the following spill information to the Cal-OES before receiving a Control Number, as applicable:"

Notification of Spill Report Updates After Initial Notification

Updated: Date: _____/_____/_____ By: _____

- Discharge Volume (Increase or Decrease): _____
- Volume Discharged to Surface Water (Increase or Decrease): _____
- Additional Impacts to surface water and Beneficial Uses: _____

_____

_____

_____

Attachment 12b (FAILURE ANALYSIS AND CORRECTIVE ACTIONS)

Failure Analysis (To be completed by Supervisor)

Spill Name or Location Description: _____ Spill Date: _____/_____/_____

Failure Point Asset ID: _____ Age of Asset: _____ Years

Asset Type: ☐ Gravity Main ☐ Lateral ☐ Manhole ☐ Force Main ☐ Lift Station ☐ Siphon

☐ Other: _____

Cause of Spill: _____

_____

☐ Spill Cause Verified by CCTV Inspection (Attach TV Report to this form) ☐ N/A

Maintenance Activities Prior to Failure:

Last Cleaned Date: _____/_____/_____ Last Inspected Date: _____/_____/_____

Last Maintenance Date: _____/_____/_____

☐ Any Open Work Orders for Asset? Describe: _____

Describe if it Contributed to the failure: _____

_____

Has a Spill Occurred at this Same Location in the Past? ☐ Yes ☐ No If YES, Date: _____/_____/_____

Corrective Actions (To be completed by Supervisor)

Follow-Up or Corrective Action Taken to Prevent Recurrence (Select All that Apply):

☐ Place on Scheduled PM ☐ Adjust Scheduled PM Interval ☐ Provide More Training

☐ Perform Scheduled Repair ☐ Perform Immediate Repair ☐ Perform Targeted Outreach

☐ Other: _____

List Work Order Numbers: _____ ☐ N/A

Comments: _____

_____

Attachment 12c (Spill Event Interview Script)

Name of Person Being Interviewed: _____ Date: _____/_____/_____

Interviewed By: _____ Title: _____

Spill Name or Location Description: _____

1. When did you first observe the Spill? _____: _____ ☐ AM ☐ PM Date: ____/_____/_____

   Response:

   _____

2. Is it currently spilling? ☐ Yes ☐ No If YES, How Would You Describe the Spill?
   Interview Prompt: (Is it Trickling, or more like a garden hose running full?)

   Response:

   _____

3. Can you recall a time prior to seeing the spill when you observed it was not spilling?

   Response:

   _____

4. Can you describe where the spill is coming from?
   Interview Prompt: (*Cleanouts are the size of dinner plate; manholes are the size of car wheels)*

   Response:

   _____

5. Can you describe the size of the wetted area?
   Interview Prompt: (Compared to the Size of your driveway)

   Response:

   _____

6. Do you know if the Spill has reached a water way, storm drain, or gutter? ☐ Yes ☐ No

   Response:

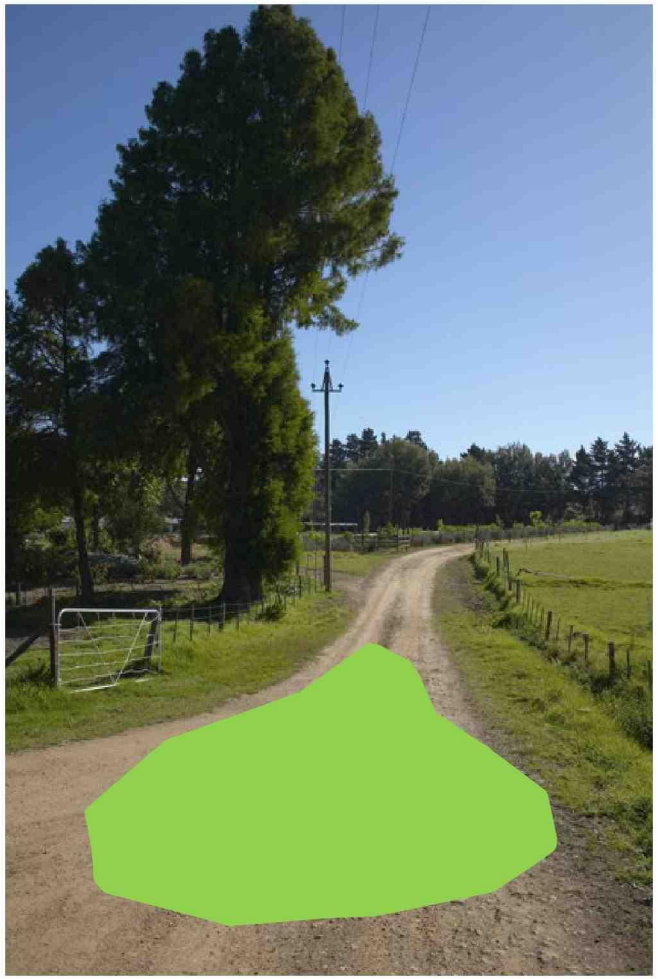
   _____

NOTES: _____

SPILL CONTAINED ON SOIL

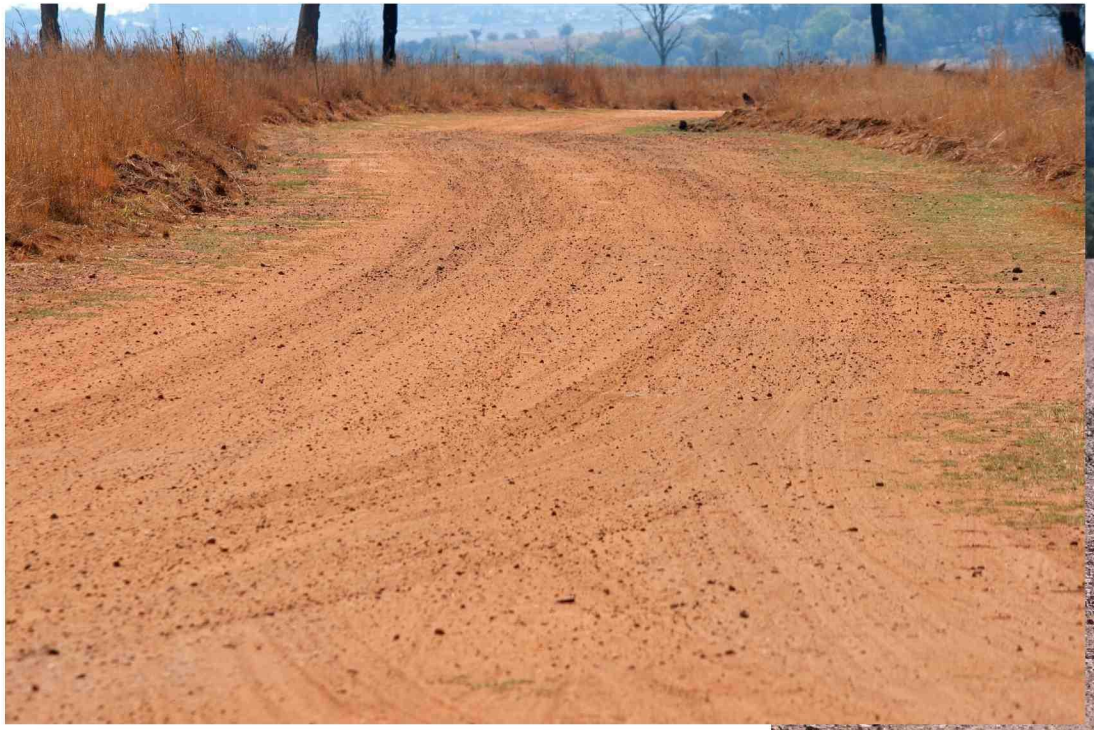
You can Measure the Area, but…

How Much of the Sewage
Soaked into the Ground?



APPLYING THIS METHOD

1. Conditions Must Be Dry
   a. No Recent Rain
   b. No Irrigation perimeter
2. The Edges of the Wetted Area Must Be Visible



STEP 1

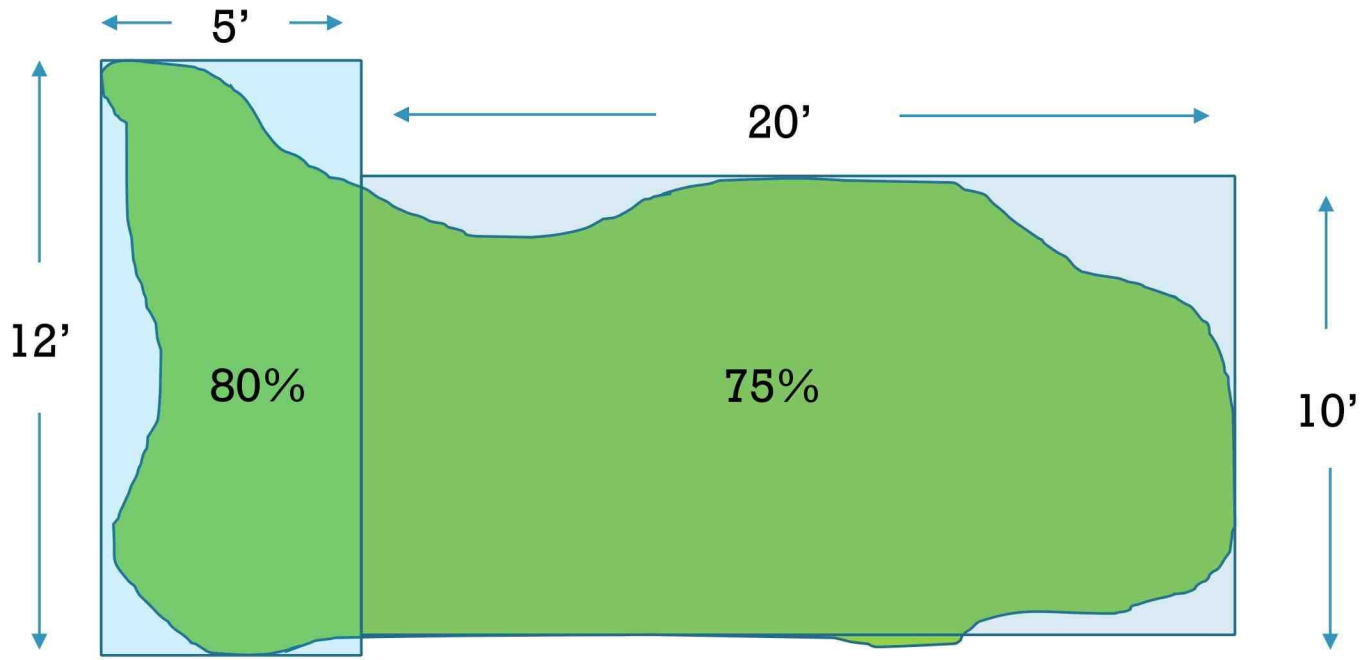
1. Measure the wetted area (Measured Volume Method)

2. Dig down to dry soil in several places within the wetted area to get average depth of wetted soil.

3. Determine Volume of wetted soil.

Step 1 – Determine the "AREA" of the Wetted Soil

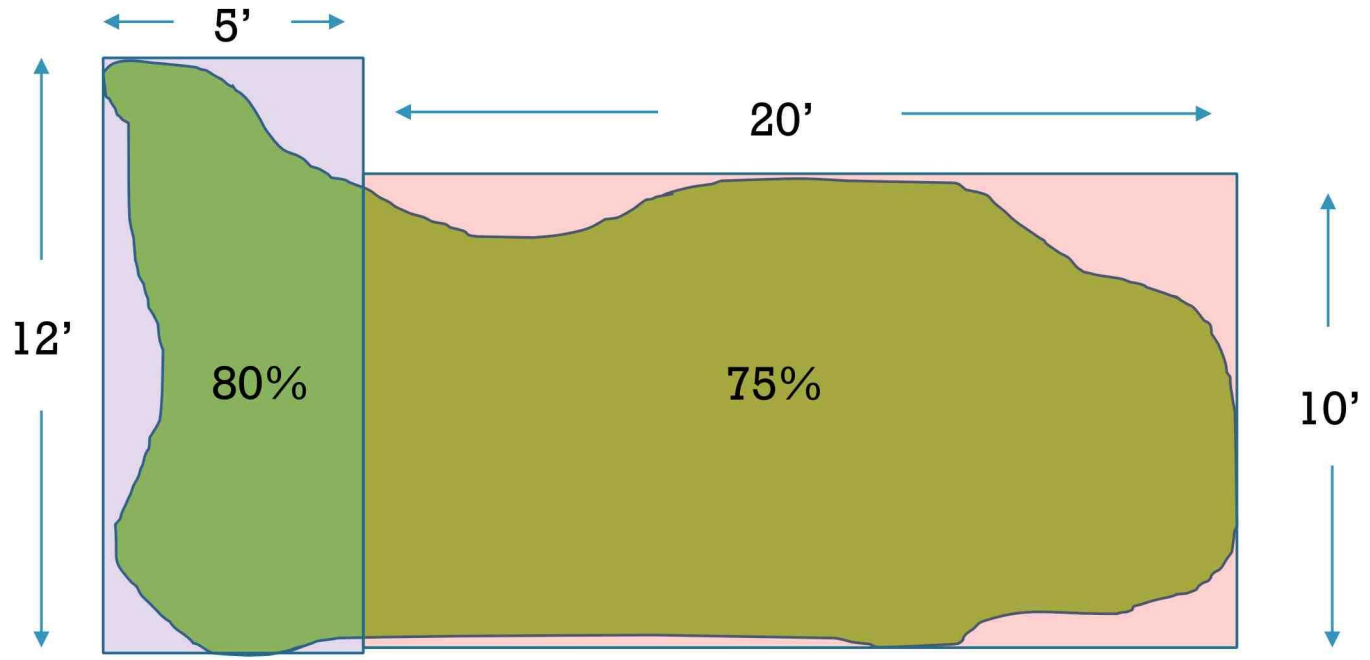
Measured Area / Volume Method



1. It is Difficult to Determine the Area of an Irregular Shape
2. Enclose the Wetted Area in a Measurable Shape (i.e., Rectangle or Square)
3. Measure the Shape
4. Estimate the Percent of the Wetted Area Inside the Shape

Step 1 – Determine the "AREA" of the Wetted Soil

Formula: Length x Width = Area



12 x 5 x 0.80 = 48 SF

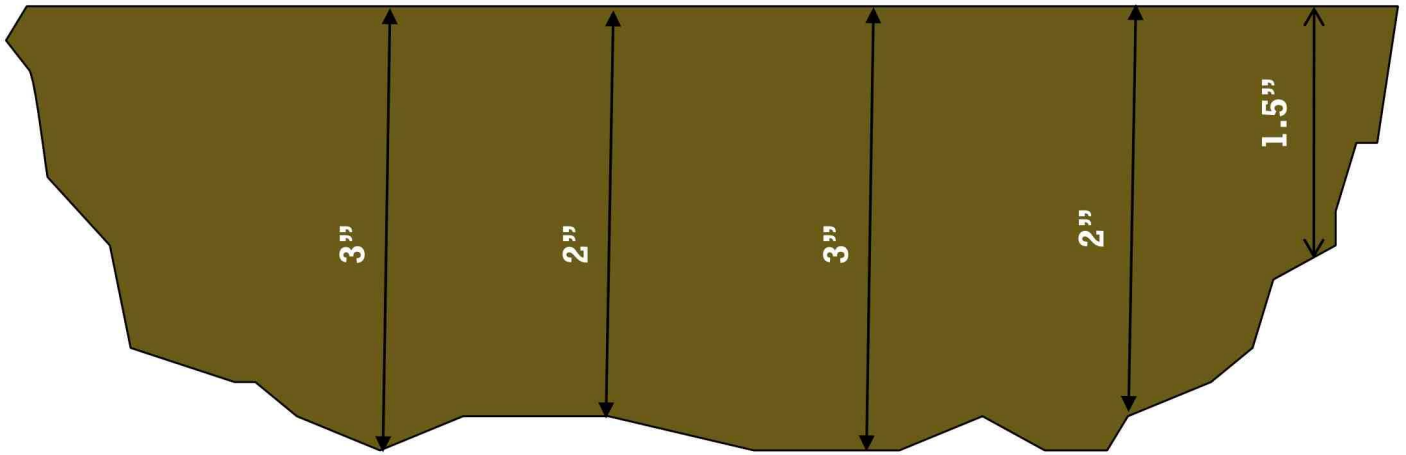
20 x 10 x 0.75 = 150 SF

48 SF + 150 SF = 198 SF

Now We Know the "Area"

Step 2 – Determine the "Depth" of the Wetted Soil

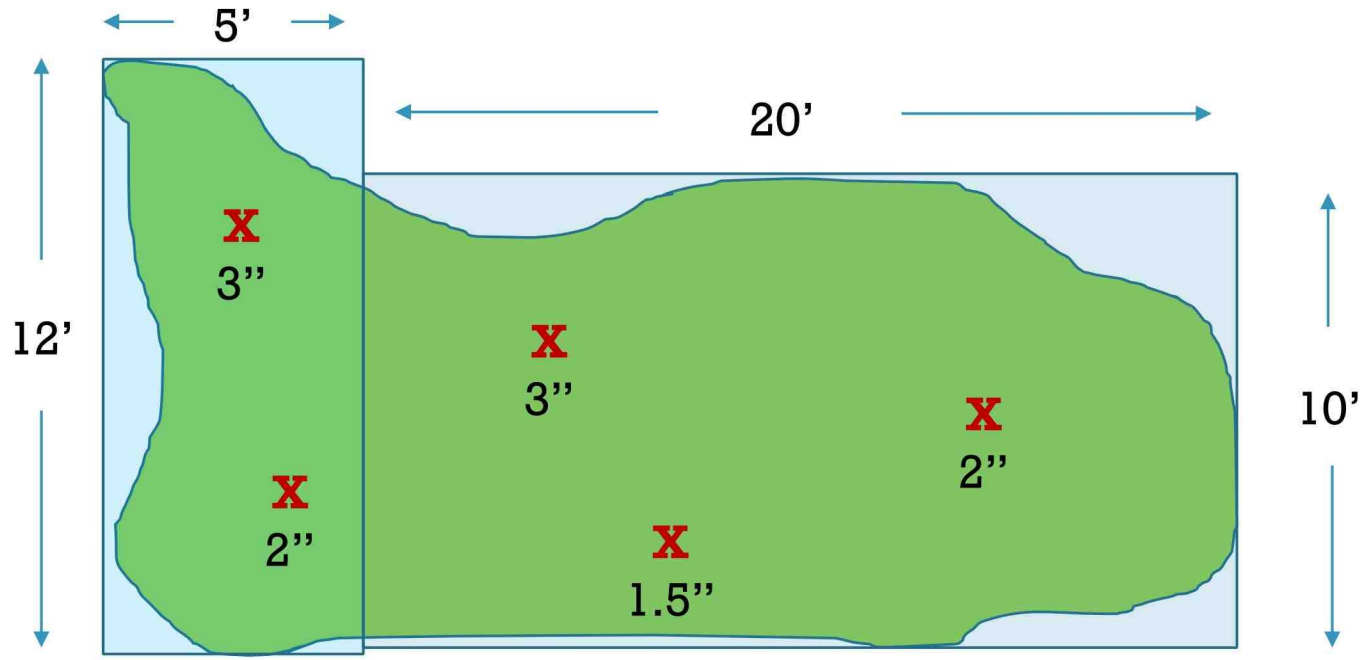
Average Depth of Wetted Soil



3" + 2" + 3" + 2" + 1.5" = **11.5"**. 11.5" / 5 = **2.3"** average depth (or 0.19')

1. Measure the Depth of the Wetted Soil by digging down until dry soil is found.
2. Do This in Enough Places to Get a Representative Sample of the Depth.
3. Average the Measurements Taken to Arrive at the Average Depths of Wetted Soil.

Step 3 – Determine the "Volume" of the Wetted Soil



Average Depth: 3" + 2" + 3" + 1.5" + 2" = 11.5 / 5 = **2.3"**

48 SF + 150 SF = 198 SF x 0.19' = 37.6 CF

37.6 CF x 7.48 = **282 gallons of wetted soil**

Now We Have to Figure Out the Water Content because some of the Volume is Dirt

Next – Take a Representative Soil Sample

Take a Sample of the Soil

(Near the Affected Area)

DETERMINE WATER CONTENT IN SOIL

Needed – A Form and a Known Amount of Water

Soil Sample Step 1

POUR ONE GALLON INTO THE (24”) DIA. FORM

(or some known amount)

Give it time to soak in…

Any Form can be Used

Soil Sample Step 2

Get Representative samples of the depth of the wetted soil inside the form.

Usually, three samples or more depending on the size of the form.

Soil Sample Step 3

MEASURED DEPTH OF WETTED SOIL

Three Samples – Determined 2.25” Average Depth of Wet Soil

Soil Sample Step 4

CALCULATED VOLUME OF WETTED SOIL

Formula: Diameter Squared x 0.785 x Depth = Cubic Feet

Ring/Form is 2' Diameter

Measured Average Depth is 2.25" (0.188')

2' x 2' x 0.785 x 0.188 = 0.59 C.F.

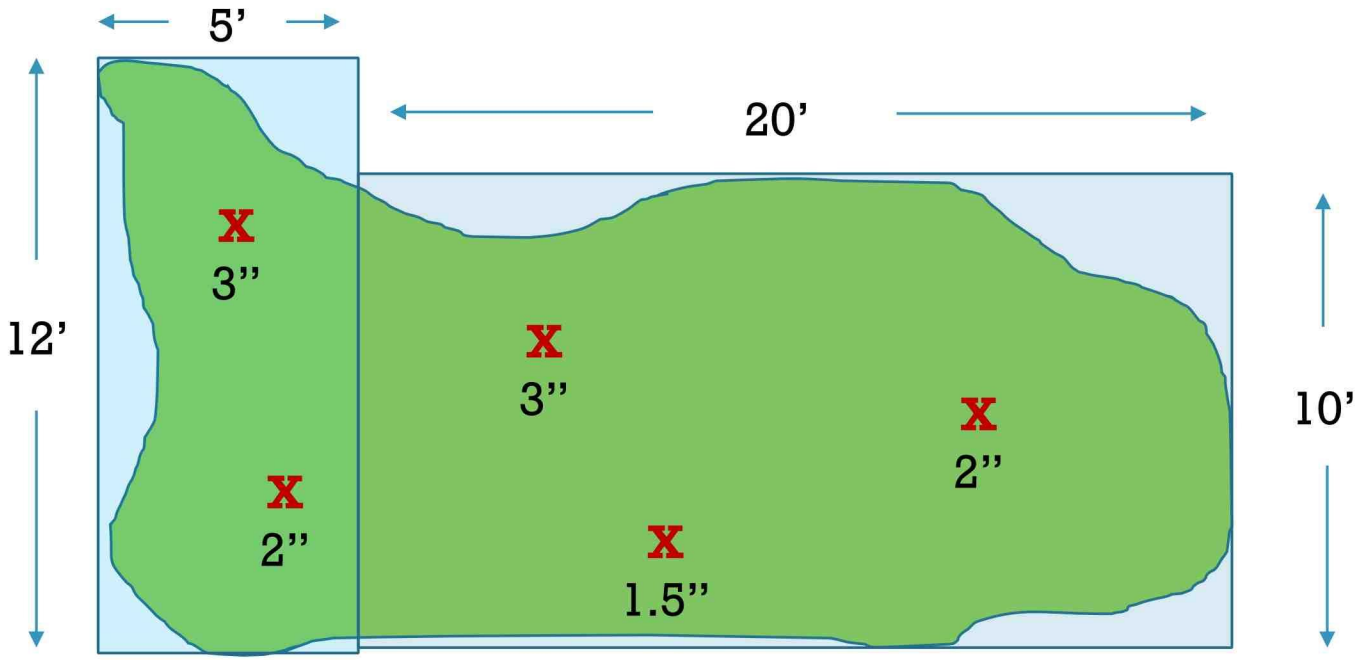
0.59 C.F. x 7.48 gallons = 4.4 gallons of wetted soil

We Know 1 Gallon of water was poured into the ring…

1 Gallon / 4.4 gallons = 23.0%

So, the water content is 23%

Soil Sample Step 5



37.6 CF x 7.48 = 282 gallons of wetted soil

282 gallons x 0.23 = 65 gallons spilled

Attachment 12e (Spill Equivalents Conversions Formulas)

EQUIVALENTS:

Values, numbers, quantities which are the same.

- 12 Inches = 1 Foot
- 60 Seconds = 1 Minute
- 60 Minutes = 1 Hour
- 24 hours = 1 Day
- 1440 minutes = 1 Day
- 7.48 Gallons = 1 Cubic foot

Quick Reference **Conversion**		
Inch	to	Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'

CONVERSIONS

Changing from one unit of measure to another.

When using formulas, units of measurement must be the same.

- Convert Inches to Feet: Divide the inches by 12.
  - Example: 39" ÷ 12 = 3.25 feet.
- Convert cubic feet to gallons: Multiply cubic feet by 7.48.
  - Example: 8 cubic feet x 7.48 = 59.8 gallons

TO AVERAGE NUMBERS

The find the average of a group of numbers, add the numbers together, then divide by the number of numbers that were added.

- Example: 12 + 21 + 33 + 18 = 84 (four numbers totaling 84)
  - 84 ÷ 4 = 21 (average)

TO SQUARE A NUMBER

To Square a number, multiply the number by itself.

- Example: 7^2 is 49 (7 x 7 = 49)

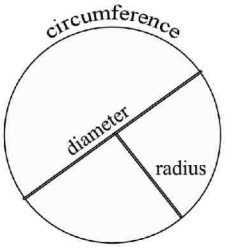
TERMS TO BE FAMILIAR WITH

Radius: Represented by r, is the distance from the center of a circle to any point on its edge.

Diameter: Represented by D, is a straight line passing from side to side through the Center of a circle.

- The Diameter is twice as long as the radius, or radius is ½ of the Diameter.

Circumference: Represented by C, is the distance around a circle (the perimeter)



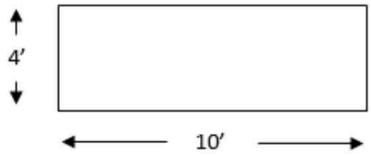
Pi: Represented by π, is the ratio of a circle's circumference to its diameter and is equal to 3.14

AREA

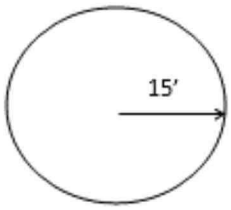
- Two Dimensional
- Represented in square feet (ft^2)
- Example: a surface is two dimensional (i.e., wall, tabletop, the ground)

Formulas:

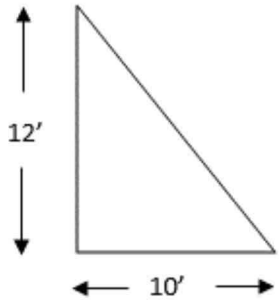
- Area of a Square or Rectangle: Length x Width = ft^2 (Area = L x W)
  - 10' x 4' = 40 ft^2



- Area of a Circle: Pi x radius squared (Area = π x r^2)
  - r = 15'
  - 15^2 = 225 (15 x 15 = 225)
  - 3.14 x 225 = 706.5 ft^2



- Area of a Right Triangle: Base x Height x 0.5 (Area = b x h x 0.5)
  - 12' x 10' x 0.5 = 60 ft^2



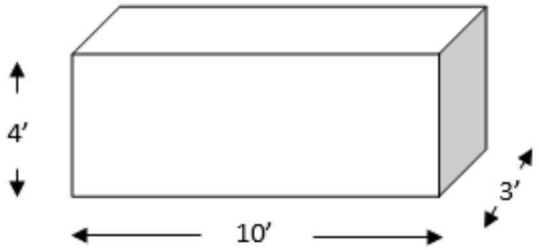
VOLUME

- Three Dimensional
- Represented in cubic feet (ft^3)
- Example: a box is three dimensional and a so is a bucket

Formulas:

- <u>Volume of a Square or Rectangle</u> (L x W x d = ft^3) or (L x W x h = ft^3)
  - d = Depth
  - h = Height
    - Height is the vertical distance from the bottom to the top of an object.
    - Depth is the distance from front to back or top to bottom of an object.
      - ☐ They can be used interchangeably.

  - 10’ x 4’ x 4’ = 160 ft^3



- Volume of a Cylinder (Pi x radius squared x depth) (Volume = π x r^2 x d) or (π x r^2 x h)
  - r = 5’
  - d = 15’
  - π x r^2 x d
  - 3.14 x (5 x 5) x 15 = 1,177.5 ft^3

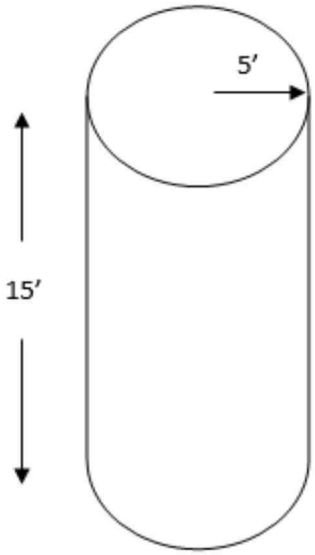
Addressing <u>depth</u> when it is a stain on concrete or asphalt.

For smooth surfaces use:

- Asphalt: 0.0013’ (which is 1/64”)
- Concrete: 0.0026’ (which is 1/32”)

If surface is rough or cracked, your calculations need to be inflated. As a general rule:

- Slightly rough/cracked ……+ 15%
- Moderately rough/cracked …… + 30%
- Severely rough/cracked ……+ 50%



SPILL RESPONSE FIELD REPORT

TABLE OF CONTENTS

SPILL RESPONSE FIELD REPORT

13.1 NOTIFICATION OF SPILL *(Select Method and Received From)* (Pg. E-1-20 Sec. 4.3)

Method: ☐ During Business Hours ☐ After Business Hours

Received From: ☐ Remote Alarm ☐ Public Discovery ☐ Employee Discovery

☐ Contractor Discovery ☐ Other: _____

Agency Notified Time: _____ ☐ AM ☐ PM Date: _____/_____/_____

Caller's Address: _____ Received by _____

Caller's Name: _____ Phone: _____

13.2 CALLER INTERVIEW (Pg. E-1-20 Sec. 4.3)

(☐ *Interview Method and Received From by other (attached)*

1. When did you first observe the Spill? _____: _____ ☐ AM ☐ PM Date: _____/_____/_____

   Response: _____

2. Is it currently spilling? ☐ Yes ☐ No If YES, How Would You Describe the Spill?
   Interview Prompt: (Is it Trickling, or more like a garden hose running full?)

   Response: _____

3. Can you recall a time prior to seeing the spill when you observed it was not spilling?

   Response: _____

4. Can you describe where the spill is coming from?
   Interview Prompt: (*Cleanouts are the size of dinner plate; manholes are the size of car wheels)*

   Response: _____

5. Can you describe the size of the wetted area? *Interview Prompt: (Compared to the Size of your driveway)*

   Response: _____

6. Do you know if the Spill has reached a water way, storm drain, or gutter? ☐ Yes ☐ No
   Response: _____

SPILL RESPONSE FIELD REPORT

13.3 RESPOND/ASSESS (Pg. E-1-20 Sec. 4.3)

First Responder's Name: _____ Arrival Time: _____ ☐ AM ☐ PM

Actively spilling Upon Arrival? ☐ Yes ☐ No ☐ Photos and Video Taken of Spilling Structure

Additional Resources Needed?

☐ None ☐ Supervisor ☐ Hydro-Vac ☐ Containment Items ☐ Traffic Control Devices

☐ Assistance/Personnel (x _____) ☐ Electrical/Controls Tech ☐ Mechanical Maint./Pump Tech

☐ Public Notification Signage ☐ Confined Space Equipment Other: _____

Resources Requested Time: _____ ☐ AM ☐ PM ☐ N/A

Notes: _____

_____

_____

13.4 SPILL CATEGORY DETERMINATION (Pg. 24,Spec. 5.13.1)

Answer the questions below, in order, beginning with Category 1. A YES answer to ANY Question Determines the Spill Category. When you Determine the Correct Category, Check the Box to the Left)

☐ Is a **CATEGORY 1 (if answer to ANY question is Yes)**

- Discharge Surface Water? ☐ Yes ☐ No
- Discharge to Drainage System that Discharges to Surface Water, but NOT Fully Captured? ☐ Yes ☐ No
- Exfiltrated to Hydraulically Connected Surface Water? ☐ Yes ☐ No

☐ Is **CATEGORY 2 (if spill is NOT a Category 1, and answer to question is Yes)**

- Is Discharge Volume 1,000 Gallons or Greater? ☐ Yes ☐ No

☐ Is a **CATEGORY 3 (if spill is NOT a Category 1 and answer to question is Yes)**

- Is Discharge Volume is between 50 Gallons and 999 Gallons? ☐ Yes ☐ No

☐ Is a **CATEGORY 4 (if spill is NOT a Category 1 and answer to question is Yes)**

- Is Discharge Volume is Less than 50 Gallons ☐ Yes ☐ No

SPILL RESPONSE FIELD REPORT

13.5 CONTAINMENT LOCATION (Pg. E1-10, SEC. 3.1.2-9) (Select all that apply):

☐ Curb & Gutter ☐ Street ☐ Open Space ☐ Storm Drain System ☐ Drainage Channel

☐ Inside Building ☐ Lawn/Landscaped Area ☐ Creek/Stream ☐ Wetland

☐ Other: _____

Description: _____

_____

_____

13.6 CONTAINMENT METHOD (Pg. E1-10, SEC. 3.1.2-9) (Select all that apply): ☐ Photo(s) of

☐ Inlet Mats ☐ Sandbags ☐ Dirt Dam/Berm ☐ Rubber Berm ☐ Vacuum Retrieval

☐ Spill Kit ☐ Naturally Contained ☐ Hand Dig Trench ☐ Dry Sweep ☐ Pneumatic Plugs

☐ Divert to Sewer System ☐ Absorbent Waddles ☐ Other: _____

Description: _____

_____

_____

13.7 FAILURE LOCATION (Pg. E1-10, SEC. 3.1.2-5&6)

☐ Lower Lateral ☐ Upper Lateral ☐ Gravity Main ☐ Force Main ☐ Air Release Valve

☐ Lift Station ☐ Siphon ☐ Manhole ☐ Backflow Prevention Device

☐ Other: _____

List Asset ID(s): _____

Age of Failed Asset: _____ Years. If Failure Location is a Pipe: Material: _____ Diameter: _____

Description: _____

_____

SPILL RESPONSE FIELD REPORT

13.8 SPILL APPEARANCE POINT(S) (Pg.E1-5, Sec. 2.1)

of Appearance Points: _____

☐ Lower Lateral Clean Out - Private ☐ Lower Lateral Clean Out - Public ☐ Manhole

☐ Upper Lateral Clean Out - Private ☐ Upper Lateral Clean Out – Public ☐ Force Main

☐ Lift Station ☐ Inside Building ☐ Other: _____

List Asset ID(s) or Address: _____

_____

☐ GPS Coordinates: Longitude: _____ Latitude: _____

NOTE: If more than one appearance point, use coordinates for the point closest to failure point

13.9 RESTORE FLOW (Select all that apply) (Pg. E1-10, Sec.3.1.2-10)

☐ **Gravity Line Blockage** - ☐ Hydro-Vac ☐ Power Rodder ☐ Hand Rods ☐ Excavation ☐ By-Pass

☐ **Manhole** - ☐ Hydro-Vac ☐ Hand Rods ☐ Confined Space Entry ☐ By-Pass

☐ **Lift Station** - ☐ Electrical ☐ Mechanical ☐ De-Rag Pump ☐ By-Pass ☐ Generator

☐ **Force Main** - ☐ Hydro-Vac. ☐ By-Pass ☐ Excavation

☐ **Lateral** - ☐ Cable Machine/Snake ☐ Hand Rods ☐ Excavation

Description of Actions taken to restore flow: _____

_____

☐ Spill End Time: _____ ☐ AM ☐ PM Date: _____/_____/_____ By: _____

13.10 SPILL CAUSE (Select all that apply)

(Pg.29 Sec. 6.1.6-6)

☐ Debris Dirt/Solids ☐ Debris Rags ☐ Non-Dispersible Wipes ☐ Debris Construction

☐ Lift Station – Power Loss ☐ Lift Station - Telemetry/Controls ☐ Lift Station - Mechanical

☐ Vandalism ☐ Root Intrusion ☐ FOG ☐ Pipe/ Structural Failure ☐ Operator Error

☐ Natural Disaster ☐ Capacity Exceeded- I&I ☐ Other: _____

Description: _____

SPILL RESPONSE FIELD REPORT

13.11 SPILL RESPONSE ACTIVITIES (SELECT ALL THAT APPLY)

(Pg. E1-10, Sec.3.1.2-10)

☐ Mitigated Effects of the Spill ☐ Contained all or Portion of Spill ☐ Restored Flow

☐ CCTV Inspection for Cause ☐ Clean Drainage Conveyance System ☐ Cleaned Spill Area

☐ Captured and Removed All Washdown Water ☐ Notify Property Owner

☐ Returned All the Spill to Sewer System ☐ Returned a Portion of the Spill to the Sewer System

☐ Collected Required Coordinates ☐ Collected Required Photos

☐ Other: _____

Description Of Spill Response Actions: _____

_____

13.12 FINAL SPILL DESTINATION (Select all that were contacted by the spill):

(Pg. E1-9,Sec.3.1.2-(1)

☐ Building/Structure ☐ Drainage Conveyance System ☐ Ground Water Infiltration System

☐ Paved Surface ☐ Street/Curb/Gutter ☐ Unpaved Surface ☐ Landscaped Area

☐ Surface Water ☐ Other: _____

Destination 1: Longitude: _____ Latitude: _____

Destination 2: Longitude: _____ Latitude: _____

Destination 3: Longitude: _____ Latitude: _____

Description: _____

_____

13.13 IMPACT TO RECEIVING WATERS (Pg.11 Spec. 3.2.2 –(6&7) (Pg. E1-10 Sec.3.1.2-(15)

☐ N/A ☐ Public Closure ☐ Restricted Public Access ☐ Temporary Restricted Use

☐ Other: _____

SPILL RESPONSE FIELD REPORT

13.14 ESTIMATED TRAVEL TIME TO RECEIVING WATERS

(Pg.29 Spec. 6.1.6 (7))

☐ N/A Point of Entry to Drainage System to Point of Discharge to Receiving Waters: _____ Minutes

- Distance from Entry to Drainage System to Discharge to Surface Waters: _____ Feet
- Description of Drainage Conveyance System: _____

  _____
- Description of Receiving Waters: _____

  _____

Method to Estimate Travel Time: _____

_____

☐ N/A Spill Appearance Point to Receiving Waters: _____ Minutes

- Distance from Spill Appearance Point to Receiving Waters: _____ Feet
- Description of Receiving Waters: _____

  _____

Travel Time Estimation Method: _____

_____

13.15 REQUIRED PHOTOS

☐ Photo Taken of Entry Point to Drainage Conveyance System …….…… N/A ☐

☐ Photos Taken of Entry Point to Surface Water ……..…….. N/A ☐

If Entered surface water,:

☐ Water Body Bank Erosion ☐ Water Sheen ☐ Floating Matter ☐ Discoloration

☐ Impact to Receiving Waters Notes: _____

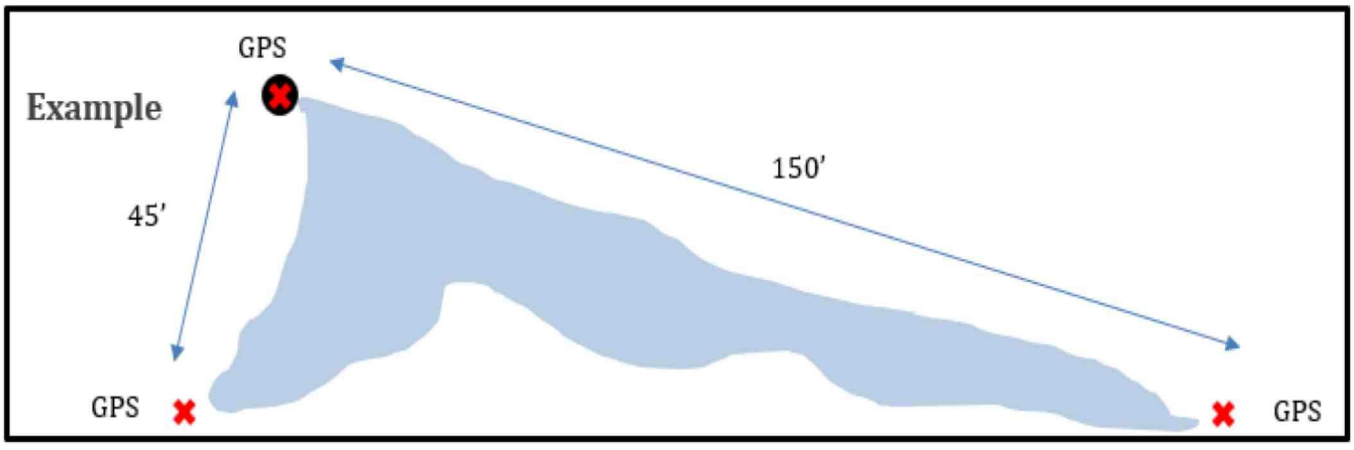
_____

SPILL RESPONSE FIELD REPORT

13.16 SPILL LOCATION AND SPREAD (Pg. E1-5 Sec. 2.1)

Sketch the footprint of the spill and provide dimensions (in feet) for size and extent of spill (use sketch area below). Include spill appearance point, spill destination(s), and indicate locations where GPS coordinates were taken.

SPILL LOCATION AND SPREAD EXAMPLE



SPILL RESPONSE FIELD REPORT

13.17 SPILL VOLUME ESTIMATIONS (Pg. E1-5, Sec.2.2)

☐ Spill Volume Estimation Worksheet(s) Attached ☐ Spill Start Time Worksheet Attached

☐ Telemetry Records Attached

Spill Volume Estimation Details:

_____

_____

_____

_____

Estimate volume discharged to drainage conveyance system flowing to surface water _____Gals.

Estimate volume recovered from drainage conveyance system flowing to surface water _____Gals.

Estimate spill volume discharged directly to surface water _____Gals.

Estimate spill volume recovered from surface water _____Gals.

Estimate spill volume discharged to land _____Gals.

Estimate spill volume recovered from discharge to land _____Gals.

Method to Estimate Spill Volume Recovered: _____

_____

_____ ☐ Same as Spill Volume Estimation

CONTACT CAL-OES (800) 852-7550 ☐ **N/A** ☐ **CAL-OES Notification Log Attached**

Attachment E1 Requirements (1.1. Notification of Spills of 1,000 Gallons or Greater to Cal-OES)

Per Water Code section 13271, for a spill that discharges in or on any waters of the State, or discharges or is deposited where it is, or probably will be, discharged in or on any waters of the State, the Enrollee shall notify the California Office of Emergency Services and obtain a California Office of Emergency Services Control Number as soon as possible but no later than two (2) hours after:

- The Enrollee has knowledge of the spill; and
- Notification can be provided without substantially impeding cleanup or other emergendcy measures.

SPILL RESPONSE FIELD REPORT

13.18 CLEANUP TIMELINE

Clean Up Begin: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Clean Up Complete: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

13.19 CLEAN UP METHOD: (Select All that Apply): (Pg. E1-10, Sec.3.1.2-(9))

☐ Fresh Water Washdown ☐ Broom/Rake/Retrieve Solids ☐ Vacuum Retrieval ☐ Soil Removal

☐ Hydro-Jet/Vacuum Retrieve from Storm Conveyance System ☐ Building Restoration

☐ Disinfectants ☐ Other Clean Up Method: _____

_____

Description of Clean Up Activities: _____

_____

_____

_____

13.20 DISPOSAL OF RECOVERED SEWAGE

☐ Returned to Sewer System ☐ Disposed of at Treatment Plant or Authorized Facility

☐ Other: _____

13.21 REQUIRED PHOTOS

☐ Entire Affected Area After Cleanup is complete.

SPILL RESPONSE FIELD REPORT

13.22 RESPONSE COMPLETE

Departure Time: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

☐ Spill sample/analysis conducted (for spills >50K gallons reaching surface waters only)

Spill Event Details:

Name(s) of all Spill Response Personnel: _____, _____

_____, _____, _____

Name(s) of Personnel Completing this Form: _____, _____

Data Verified by Response Personnel: _____ Date: _____

Data Verified by Supervisor: _____ Date: _____