# Sewer System Management Plan Audit

Sewer Maintenance Districts of Los Angeles County

*Los Angeles County, CA*

FINAL - October 31, 2024

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## Table of Acronyms

| Acronym | Description |
|---|---|
| BMP | Best Management Practices |
| CCTV | Closed Circuit Television |
| CIP | Capital Improvement Plan |
| CIPP | Cured-In-Place Pipe |
| CIWQS | California Integrated Water Quality System |
| CS | Collection System |
| CSMD | Consolidated Sewer Maintenance Division |
| FOG | Fats, Oils and Grease |
| FSE | Food Service Establishment |
| GIS | Geographical Information System |
| LACPW | Los Angeles County Public Works |
| LRO | Legally Responsible Official |
| MSMD | Marina Sewer Maintenance Division |
| NASSCO | National Association of Sewer Service Companies |
| PACP | Pipeline Assessment and Certification Program |
| SMD | Sewer Management Division |
| SSMP | Sewer System Management Plan |
| WDID | Waste Discharger Identification |

# 1 Purpose

The purpose of this document is to report the results of the Sewer System Management Plan (SSMP) Program Audit conducted for the Sewer Maintenance Districts of Los Angeles County, covering the audit period beginning May 2, 2021 and ending May 2, 2024. This report was prepared pursuant to the requirements included in the State Water Resources Control Board Order No. 2022-0103-DWQ – Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (General Order). The audit requirements are:

*The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit must be conducted for the period after the end of the Enrollee's last required audit period. Within six months after the end of the required 3-year audit period, the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 (Sewer System Management Plan Audit Reporting Requirements) of Attachment E1 of this General Order.*

*Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff.*

*The internal audit shall be appropriately scaled to the size of the system(s) and the number of spills. The Enrollee's sewer system operators must be involved in completing the audit. At minimum, the audit must:*

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

*The Enrollee shall submit a complete audit report that includes:*

- *Audit findings and recommended corrective actions;*
- *A statement that sewer system operators' input on the audit findings has been considered; and*
- *A proposed schedule for the Enrollee to address the identified deficiencies.*

This audit serves as the 2024 SSMP Program Audit for the Sewer Maintenance Districts of Los Angeles County.

# 2 Background

The Los Angeles County (County) Public Works Sewer Maintenance Division (SMD) is the County's business unit responsible for operations, maintenance and management of the Sewer Maintenance Districts collection systems. The Sewer Maintenance Districts of Los Angeles County includes both the Consolidated Sewer Maintenance District (CSMD) and the Marina Sewer Maintenance District (MSMD). CMSD operates and maintains collection systems for 37 cities and 7 zones. MSMD operates and maintains one collection system serving one zone (i.e., Marina Del Rey) and has enrolled this one collection system in the CIWQS database. In addition, Los Angeles County Department of Public Works has four Sewer Maintenance Agreements to operate and maintain collection systems for Irwindale, West Hollywood, Maywood[1] and Montebello. Together, SMD operates, maintains and manages approximately 4,614 miles of sanitary sewer pipelines, over 104,000 maintenance access structures, and 159 sewage pump stations.

In unincorporated areas, the County owns the sewer mainlines but does not own any portion of the sewer lateral beyond the sewer connection. Similarly, the 37 cities, for which the County provides sewer operations and maintenance services, own the sewer mainlines and the point of connection to the sewer mainlines, but do not own any portion of the sewer lateral beyond the sewer connection.

The County has three staff authorized to serve as Onsite Managers for the collection systems managed by the County. These staff include:

- Andrew Ngumba, Assistant Deputy Director
- Alex Villarama, Principal Civil Engineer
- Robert Swartz, Senior Civil Engineer
- Jeffrey Bouse, Senior Civil Engineer
- Voltaire Llana, Senior Civil Engineer
- May Hong, Civil Engineer
- Eric Liu, Civil Engineer

Each of these staff members are authorized to act on behalf of SMD to serve as Legally Responsible Officials for each of the collection systems listed in Table 2-1.

[1] The City of Maywood sewer system was recently annexed into the Consolidated Sewer Maintenance Districts in September 10, 2024. For purposes of this audit, the City will be shown as a Sewer Maintenance Agreement City since the annexation occurred after the end of the Audit Period.

## Table 2-1: Collection Systems Operated, Maintained and Managed by Sewer Maintenance Division

| WDID Type[2] | CIWQS WDID | CIWQS Collection System Name |
|---|---|---|
| **CSMD – City** | 4SSO11366 | Agoura Hills CS |
| **CSMD – City** | 4SSO10364 | Artesia City CS |
| **CSMD – City** | 4SSO10366 | Baldwin Park City CS |
| **CSMD – City** | 4SSO10368 | Bell Gardens City CS |
| **CSMD – City** | 4SSO10369 | Bellflower City CS |
| **CSMD – City** | 4SSO10371 | Bradbury City CS |
| **CSMD – City** | 4SSO11447 | Calabasas City CS (SSO) |
| **CSMD – City** | 4SSO10374 | Carson City CS |
| **CSMD – City** | 4SSO10377 | Commerce City CS |
| **CSMD – City** | 4SSO10380 | Cudahy City CS |
| **CSMD – City** | 4SSO10382 | Diamond Bar City CS |
| **CSMD – City** | 4SSO10384 | Duarte City CS (SSO program) |
| **CSMD – City** | 4SSO10389 | Glendora City CS |
| **CSMD – City** | 4SSO10390 | Hawaiian Gardens City CS |
| **CSMD – City** | 4SSO11439 | Hidden Hills CS |
| **CSMD – City** | 4SSO10394 | Industry City CS |
| **CSMD – City** | 4SSO10397 | La Canada Flintridge City CS |
| **CSMD – City** | 4SSO10398 | La Habra Heights City CS |
| **CSMD – City** | 4SSO10399 | La Mirada City CS |
| **CSMD – City** | 4SSO10402 | Lakewood City CS |
| **CSMD – City** | 4SSO10403 | Lawndale City CS |
| **CSMD – City** | 4SSO10404 | Lomita City CS |
| **CSMD – City** | 4SSO10414 | Palos Verdes Estates City CS |
| **CSMD – City** | 4SSO10415 | Paramount City CS |

[2] CSMD – Consolidated Sewer Maintenance District
MSMD – Marina Sewer Maintenance District
SMA – Sewer Maintenance Agreement

## Table 2-1: Collection Systems Operated, Maintained and Managed by Sewer Maintenance Division

| WDID Type[2] | CIWQS WDID | CIWQS Collection System Name |
|---|---|---|
| **CSMD – City** | 4SSO10417 | Pico Rivera City CS |
| **CSMD – City** | 4SSO10420 | Rancho Palos Verdes City CS |
| **CSMD – City** | 4SSO10423 | Rolling Hills City Estates CS |
| **CSMD – City** | 4SSO10424 | Rosemead City CS |
| **CSMD – City** | 4SSO10425 | San Dimas City CS |
| **CSMD – City** | 4SSO10429 | Santa Clarita City CS |
| **CSMD – City** | 4SSO10430 | Santa Fe Springs City CS |
| **CSMD – City** | 4SSO10434 | South El Monte City CS |
| **CSMD – City** | 4SSO10437 | Temple City CS |
| **CSMD – City** | 4SSO10441 | Walnut City CS |
| **CSMD – City** | 4SSO11407 | Westlake Village CS |
| **CSMD – County Zone** | 4SSO10465 | Malibu Mesa Zone of the CSMD CS |
| **CSMD – County Zone** | 4SSO10496 | Trancas Zone of the CSMD CS |
| **CSMD – County Zone** | 4SSO11365 | Unincorporated County Area CSMD South/County Sanitation District CS |
| **CSMD – County Zone** | 4SSO11370 | Unincorporated County Area CSMD North/County Sanitation District CS |
| **CSMD – County Zone** | 4SSO11372 | Unincorporated County Area CSMD/Las Virgenes Tapia CS |
| **CSMD – County Zone** | 4SSO11374 | Unincorporated County Area CSMD-NW/County Sanitation District CS |
| **CSMD – County Zone** | 6SSO10459 | Unincorporated County Area Lake Hughes Zone of the CSMD CS |
| **MSMD – County Zone** | 4SSO11373 | Unincorporated County Area Marina/Aneta Zone of the CSMD/City Hyperian CS |
| **SMA** | 4SSO10411 | Montebello CS |
| **SMA** | 4SSO10409 | Maywood City CS[3] |
| **SMA** | 4SSO10396 | Irwindale City CS |
| **SMA** | 4SSO11368 | West Hollywood CS |

[3] Maywood City CS was recently annexed into the Consolidated Sewer Maintenance Districts in September 10, 2024. For purposes of this audit, WDID 4SSO10409 will be shown as a Sewer Maintenance Agreement City since the annexation occurred after the end of the Audit Period.

# 3 Audit Overview

This audit reviews the period between May 2, 2021 and May 2, 2024 and was performed to comply with Specification 5.4 – Sewer System Management Plan Audits of the General Order requiring completion of an internal audit of the Sewer System Management Plan at a minimum frequency of once every three years.

The SMD's Sewer System Management Plan was last updated November 2018. This audit assesses the current state of Sewer System Management Plan compliance with the General Order, identifies deficiencies found in the Sewer System Management Plan and program implementation, and recommends corrective actions. In addition, the audit provides an evaluation of Sewer System Management Plan and program implementation effectiveness. The County intends to use the audit results to improve Sewer System Management Plan compliance and performance in reducing sewer overflows.

HDR conducted the audit on behalf of the County through a series of meetings with staff involved with implementation of activities required by the General Order. The audit team members supporting the audit interviews and audit process are identified in **Table 3-1**.

**Table 3-1: SSMP Audit Team Members**

| Team Member | Organization | Role |
|---|---|---|
| Michael Flores | HDR | Lead Auditor, Project Manager |
| Karina Sandoval | HDR | Audit Support |
| Tom McCormack | HDR | Audit Support |

SSMP audit interviews were performed via multiple virtual meetings over the period from August 20, 2024 through September 10, 2024. The dates of audit interviews, WDR provisions discussed, and County staff interviewed are documented in **Table 3-2**.

## Table 3-2: SSMP Audit Participants

| Date | General Order linkage | Topics | Participants |
|---|---|---|---|
| 08/20/24<br>1:00 -<br>4:00pm | D.1 Sewer System Management Plan Goal and Introduction<br>D.2 Organization<br>D.3 Legal Authorities<br>D.9 Monitoring, Measurement and Program Modifications<br>D.10 Internal Audits<br>D.11 Communication Program | Goal,<br>Organization,<br>Legal Authorities,<br><br>Monitoring, Measurement and Program Modifications<br><br>Internal Audits, and Communication | Andrew Ngumba<br>Alex Villarama<br>Voltaire Llana<br>Michael Flores<br>Karina Sandoval |
| 08/28/24<br>1:00 -<br>4:00pm | D.4 Operations and Maintenance Program<br>D.6 Spill Emergency Plan | Collection System Operation and Maintenance<br><br>Overflow Emergency Response Plan | Dajuan Clark<br>Voltaire Llana<br>Juan Alonso<br>Christopher Pussman<br>Alex VIllarama<br>Michael Flores<br>Karina Sandoval |
| 09/03/24<br>1:00 -<br>2:30pm | D.7 Sewage Pipe Blockage Control Program | Sewage Pipe Blockage Control Program | Alex Villarama<br>Frank Chin<br>Michael Flores<br>Tom McCormack |
| 09/03/24<br>2:30 -<br>4:00pm | D.8 System Evaluation, Capacity Assurance, and Capital Improvements | Capacity Assessment and Design Criteria | Nikko Pajarillaga<br>Alex Villarama<br>Karina Sandoval<br>Michael Flores |
| 09/10/24<br>1:00 -<br>3:00pm | D.5 Design and Performance Provisions<br>D.8 System Evaluation, Capacity Assurance, and Capital Improvements | Design and Performance System and Evaluation and Condition Assessment | Mahdi Mortazavi<br>May Hong<br>Voltaire Llana<br>Karina Sandoval |
| 09/10/24<br>3:00 -<br>4:00pm | D.4 Operations and Maintenance Program<br>D.5 Design and Performance Provisions<br>D.8 System Evaluation, Capacity Assurance, and Capital Improvements | Lift Station Operation and Maintenance<br><br>Design and Performance System Evaluation, Condition Assessment, and Capital Improvements | Alfredo Duran<br>Anthony Valles<br>George Modlin<br>Jeffrey Bouse<br>Long Thang<br>Mark Ramirez<br>William Martinez |

# 4 Evaluation of SSMP Effectiveness

Overall, based on analysis of the spill trends between May 2, 2021 through May 2, 2024 and the results of the SSMP Program audit, the overall program for managing the sewer systems is effective and operates at a high level of performance.

## 4.1 Sewer Overflow Performance

The primary measure of the effectiveness of the SSMP is sewer overflow performance. The primary indicators of sewer overflow performance include:

- ***Spill Rate****: Number of Spills per 100 miles of gravity mainlines and force mains per Year*
- ***Spills Impacting Surface Waters****: Number of Spills and Spill Volume Reaching Surface Waters*
- ***High-Volume Spill Events****: Number of High-Volume Spill Events and associated Spill Volume*

This section reviews the Sewer Maintenance Districts' recent sewer overflow performance through analysis of the sewer overflow data reported to the State Water Resource Control Board (SWRCB) California Integrated Water Quality System (CIWQS) database.

### 4.1.1 Sanitary Sewer Overflow Rate

The spill rates of the Consolidated Sewer Maintenance Districts 42 collection systems, Marina Sewer Maintenance District's collection system, and the four cities managed through Sewer Maintenance Agreements are in the category of medium-performing sewer systems. During the audit period (May 2021 through May 2024), the District's 42 collection systems, separated into CSMD-Cities and CSMD-County Zones, have consistently operated between 0.99 and 1.81 spills per 100 miles per year as shown in **Table 4-1**. When viewed as one unified system, the spill rate for all sewer pipelines was below 1.53 spills per 100 miles over the audit period.

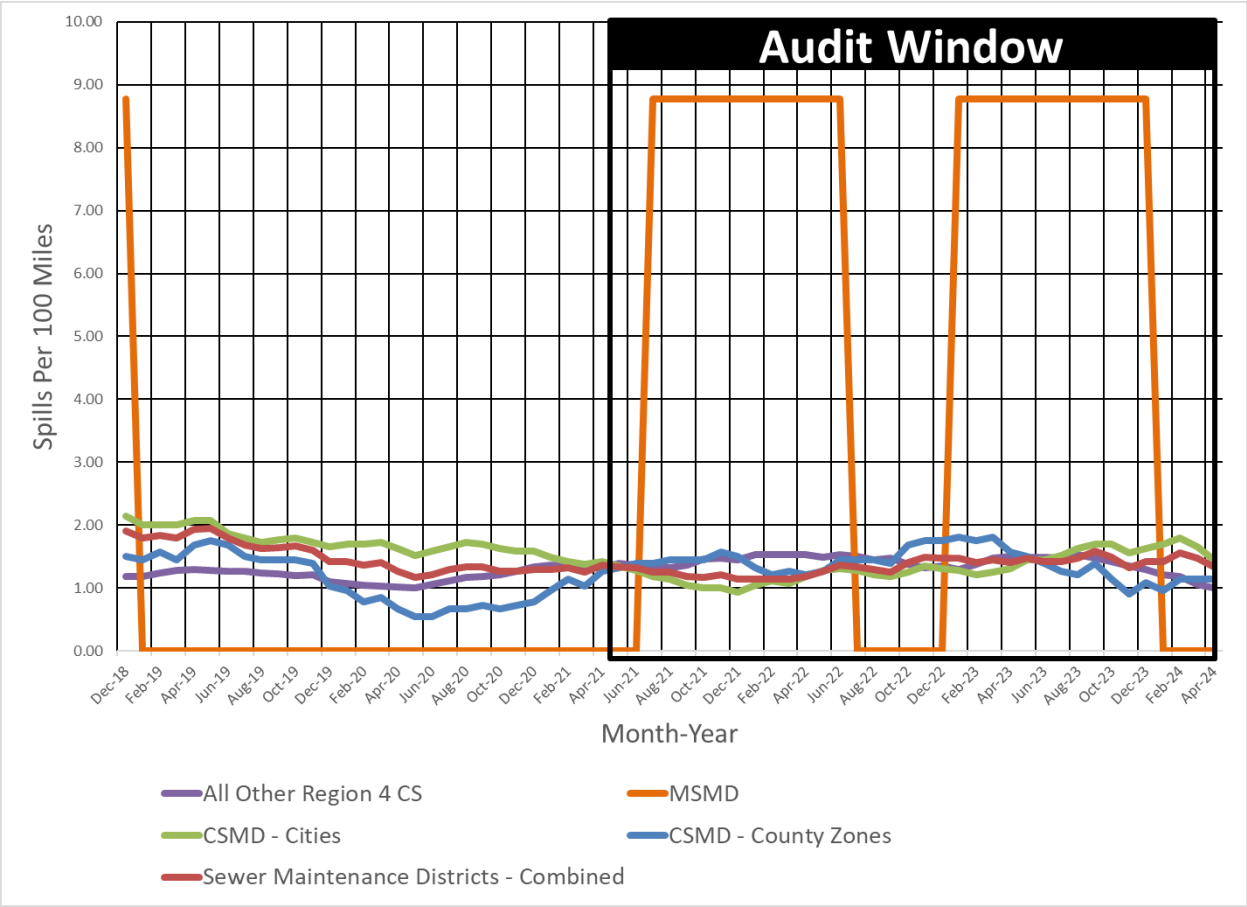
**Table 4-1: Spill Rates for SMD's Collection Systems during the Audit Period**

| Collection System | Minimum Spill Rate | Average Spill Rate | Maximum Spill Rate | Miles |
|---|---|---|---|---|
| CSMD - County Zones[1] | 0.90 | 1.38 | 1.81 | 1,658 |
| CSMD - Cities[2] | 0.93 | 1.33 | 1.80 | 2,893 |
| MSMD | 0.00 | 5.69 | 8.77 | 11 |
| Sewer Maintenance Districts - Combined[4] | 1.14 | 1.35 | 1.58 | 4,563 |
| All Other Region 4 CS[5] | 1.01 | 1.40 | 1.53 | 14,813 |

[1] This is a total of 7 CSMD County Zone Collection Systems
[2] This is a total of 37 CSMD Member City Collection Systems
[4] This includes both CSMD Collection Systems (42) and Marina Sewer Maintenance District
[5] Does not include any CSMD Collection Systems or Marina Sewer Maintenance District

SMD's spill performance over the past five years has been excellent and has averaged 1.35 spill per 100 miles over this audit period. **Figure 4-1** shows the 12-Month rolling average of spills per 100 miles of sewer pipeline per year. The chart compares the County's 12-month rolling average spill rate to the 65 other Region 4 collection systems operated by municipal agencies that are not responsible for laterals. The chart also includes comparison of spill rate by District operated collection systems groupings shown in **Table 4-1**.

**Figure 4-1: 12-Month Rolling Average Spills per 100 Miles of Sewer Pipeline per Year**




## 4.1.2 Spills Impacting Surface Waters

SMD experienced a total of 179 sewer overflow events during the audit period. **Table 4-2** summarizes the total spill volume released from collection systems managed by SMD annually during the audit period. On average, SMD has discharged to surface water approximately 84 percent of the total volume spilled. On average, SMD is recovering approximately 0.2 percent of the total volume spilled. During this same time period, other Region 4 agencies with no lateral responsibility discharged 98 percent of the total volume spilled to surface waters and recovered 7 percent of the total volume spilled.

**Table 4-2: Percent of Sewer Overflow Events and Volume Reaching Surface Waters between May 2021 and May 2024**

| Calendar Year | Total SSO Volume | Total Volume Reaching Surface Waters | Total Volume Recovered | Percent of Volume Reaching Surface Waters | Percent of Volume Recovered |
|---|---|---|---|---|---|
| **2021** | 2,345,350 | 1,436,750 | 0 | 61% | 0% |
| **2022** | 1,973,540 | 1,904,440 | 0 | 96% | 0% |
| **2023** | 2,363,070 | 2,191,520 | 17,520 | 93% | 1% |
| **2024** | 492,060 | 475,050 | 0 | 97% | 0% |
| ***Total*** | ***7,174,020*** | ***6,007,760*** | ***17,520*** | **84%** | **0.2%** |

### 4.1.3 Number and Size of Sewer Overflows

State Water Resources Control Board categorizes spill events into Category 1, Category 2, Category 3 or Category 4[4] as shown in **Table 4-3.** Category 1 Spills are considered most severe because all reach surface waters. Category 4 Spills are least severe because all are less than 50 gallons and do not reach surface waters. **Figure 4-2** shows that most of the SMD spills are the higher severity Category 1 Spills. Approximately 68 percent of the SMD spills are Category 1, 16 percent are Category 2 and 16 percent are Category 3. There are no Category 4 spills. When compared to other Region 4 agencies with no lateral responsibility, approximately 21 percent are Category 1 Spills, 39 percent are Category 2 Spills, and the remaining 40 percent are either Category 3 or 4 Spills.

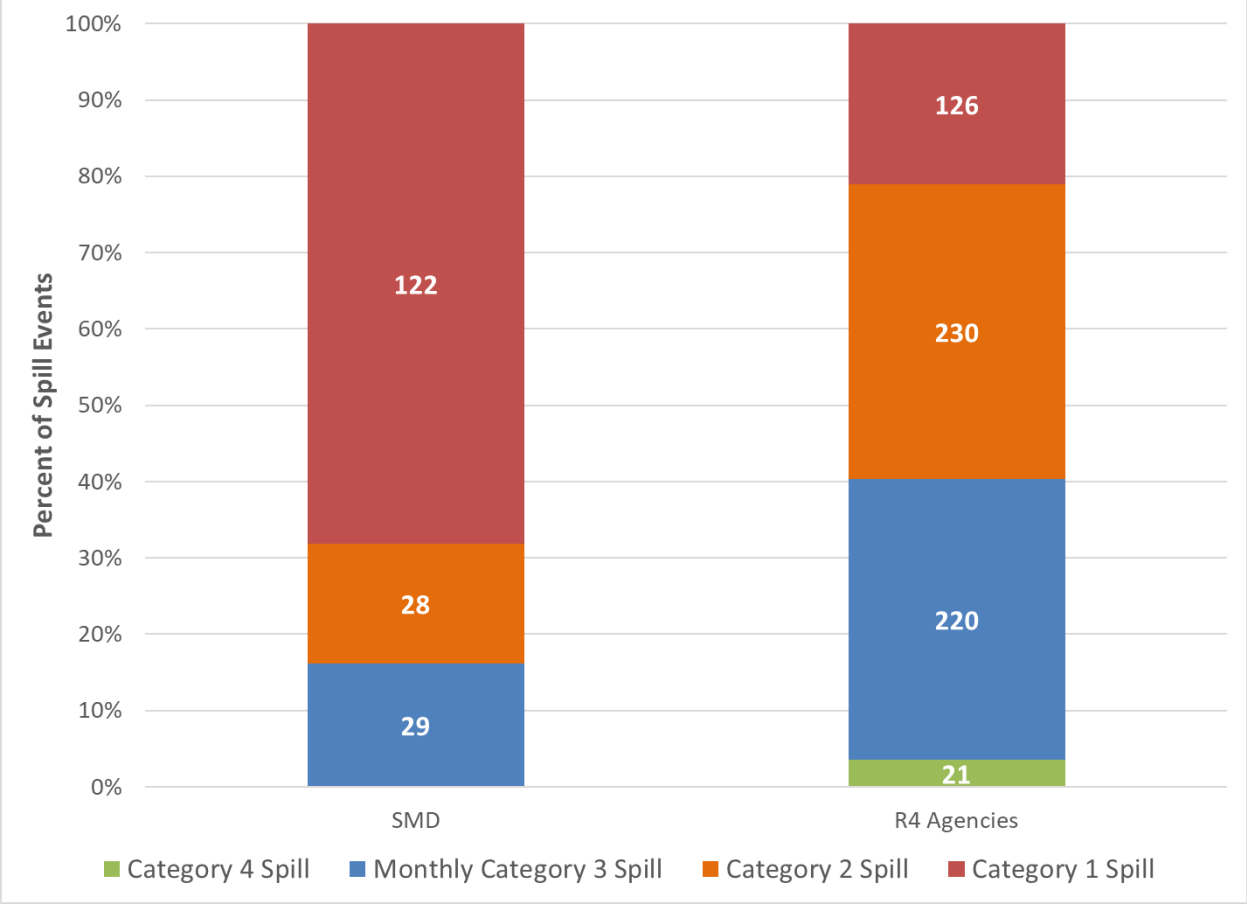
[4] State Water Resources Control Board Order No. 2022-0103-DWQ revised the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, introducing a new spill category, Category 4, alongside updated classifications for spill events. Previously, under Order No. 2006-0003-DWQ, spill events were grouped into Categories 1, 2, and 3. This modification, implemented on June 5, 2023, required an adjustment in reporting procedures. HDR conducted a comprehensive analysis of all spills recorded in CIWQS prior to June 5, 2023, and aligned them with the updated spill categories.

### Table 4-3: Spill Categories and Definitions*

| Spill Category | Definition |
|---|---|
| **Category 1** | A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:<br>• A surface water, including a surface water body that contains no flow or volume of water; or<br>• A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.<br>Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.<br><br>A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of the General Order. |
| **Category 2** | A Category 2 spill is 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.<br>A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill. |
| **Category 3** | A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.<br>A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill. |
| **Category 4** | A Category 4 spill is 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.<br>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. |

** Definitions from Monitoring and Reporting Requirements (Order No. WQ 2022-0103-DWQ)*

## Figure 4-2: Number and Percentage of Spills by Category (May 2021 through May 2024)




The majority of spills occurring in the SMD collection systems are in the range of 1,000 to 9,999 gallons. **Table 4-4** show the number of spills by size category for the District's collection systems.

## Table 4-4: Number and Size of Spills (5/2/2021 – 5/2/2024) in SMD Collection Systems

| Size of Spill (gallons) | 2021 | 2022 | 2023 | 2024 | TOTAL | Percent of Total |
|---|---|---|---|---|---|---|
| 50,000 and greater | 6 | 11 | 10 | 4 | 31 | **17%** |
| From 10,000 to 49,999 | 3 | 11 | 9 | 4 | 27 | **15%** |
| From 1,000 to 9,999 | 18 | 36 | 36 | 7 | 97 | **54%** |
| From 100 to 999 | 2 | 9 | 10 | 3 | 24 | **13%** |
| From 10 to 99 | - | - | - | - | - | **0%** |
| From 1 to 9 | - | - | - | - | - | **0%** |
| **Total** | 29 | 67 | 65 | 18 | 179 | **100%** |

### Causes of Spills

The five main causes of the number of sewer overflows are roots, debris, grease, pipe structural failure and pump station failure. These causes account for 88 percent of all spills occurring between May 2, 2021 through May 2, 2024 as shown in **Figure 4-3.** These same five causes also account for 88 percent of the volume spilled from the collection system as shown in **Figure 4-4**.

**Figure 4-3: Number of Spills by Spill Cause from May 2021 through May 2024**

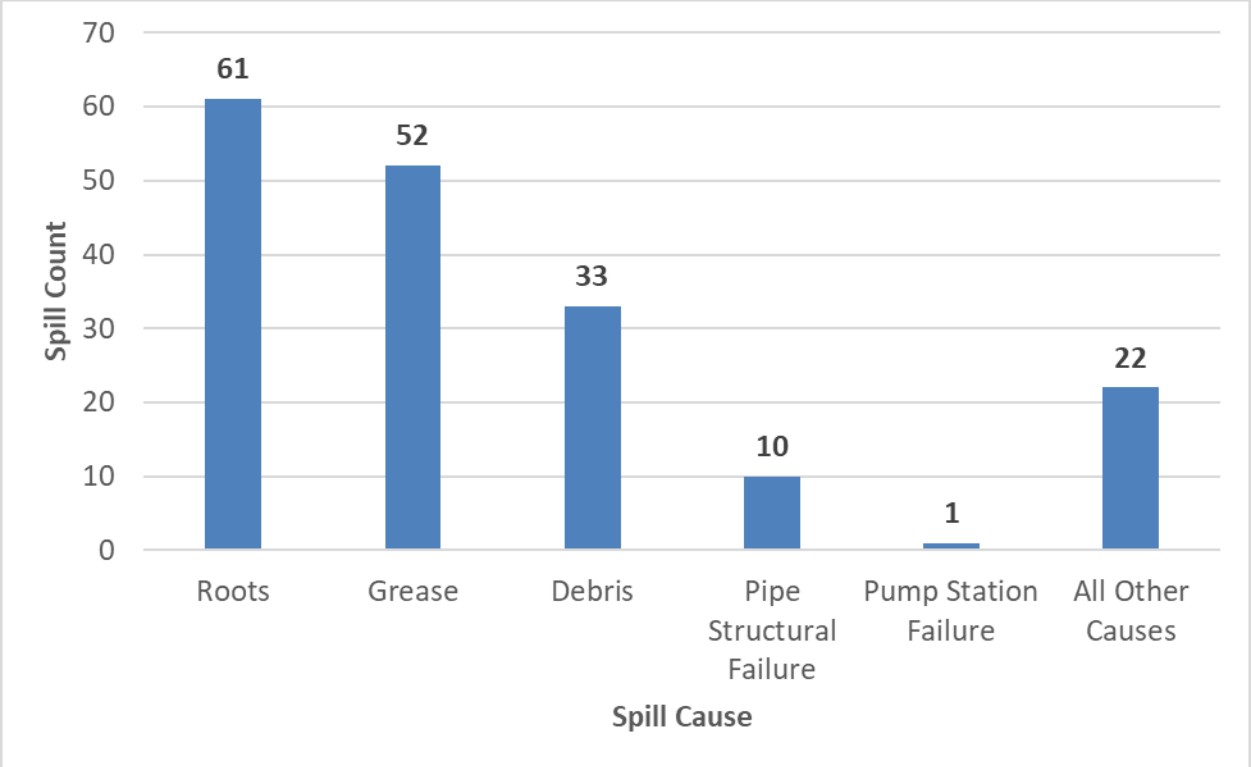
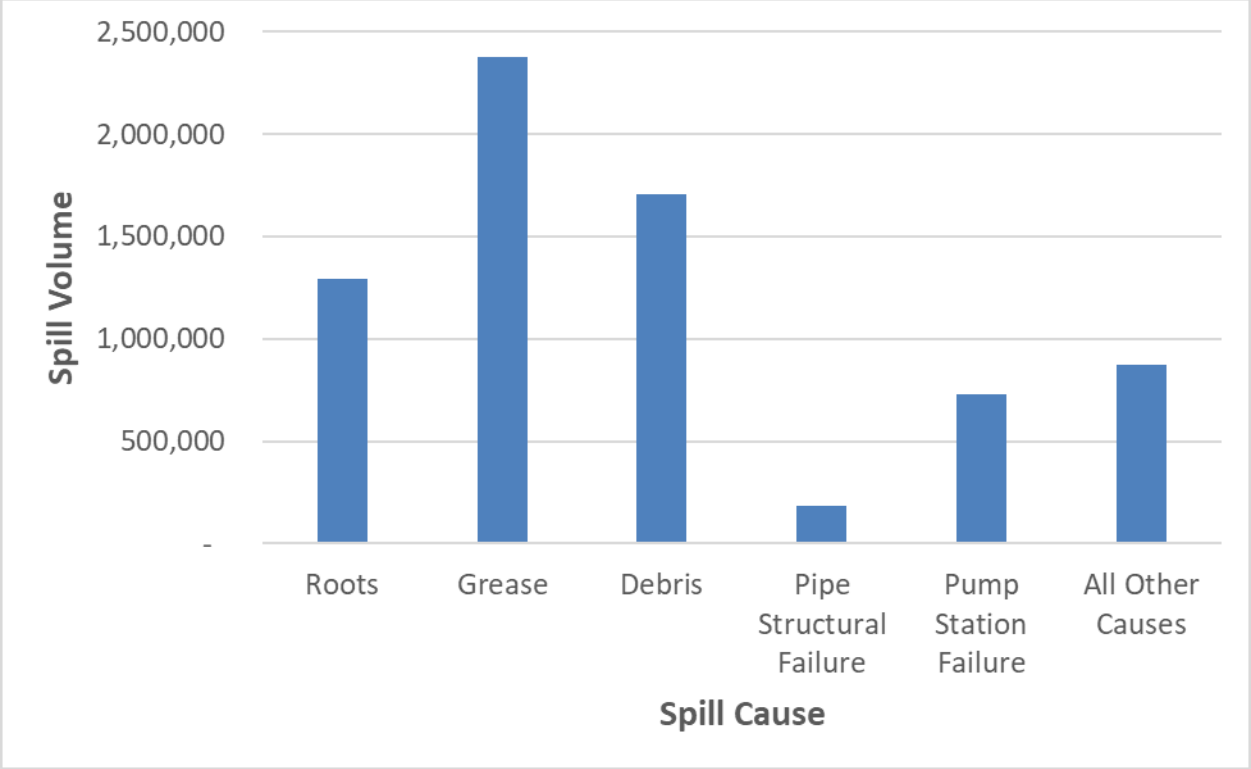


**Figure 4-4: Volume of Spills in Gallons by Spill Cause from May 2021 through May 2024**




## 4.2 Review of Effectiveness of SSMP Elements

In November 2018, the County updated the SSMP to meet the requirement for updating the SSMP every 5 years. The SSMP was approved by the Board of Supervisors on November 7, 2018. The following sections focus on evaluating the effectiveness of each element of the SSMP.

### 4.2.1 Element 1 – Goal and Introduction

#### General Order Requirements:

*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:

***Regulatory Context***

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

***Sewer System Management Plan Update Schedule***

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

***Sewer System Asset Overview***

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

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

*Additionally, the Plan Introduction section must provide reference to the Enrollee's up-to-date map of its sanitary sewer system, as required in section 4.1 (Updated Map of Sanitary Sewer System) of the General Order.*

## Audit Findings:

**Regulatory Context**

- The Goals and Actions section identifies goals for the SSMP and actions to be taken under the Plan for the accomplishment of the goals. The fourth action listed states to "completely recover the overflow". This action is not feasible. Revise the action to be attainable (e.g., "recover the overflow to the extent feasible").
- The Introduction does not provide a general description of the sewer management program as required by the reissued General Order. Update the Plan to include a description of the services the County provides and an overview of the sewer system management program.
- Section does not discuss Plan updates as required by the reissued Order. Add narrative to discuss plan updates.

**Sewer System Management Plan Update and Schedule**

- The Plan does not include an audit and update schedule as required by the reissued Order. Add schedule of plan audits and updates through the period between the

2025 SSMP update and the subsequent 2031 SSMP update. Include milestones for incorporation of key activities associated with sewer spill prevention.

**Sewer System Asset Overview**

- SMD manages 42 sewer collection systems covering over 37 cities. Coverage does not include service laterals from private connections.
- The Plan does not include an overview of sewer system assets and service area required by the reissued Order. Add sewer system asset overview and service area information for each sewer collection system. The overview must include the following:
    - Location, including counties served
    - Service Area Boundaries
    - Population and community served
    - System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons
    - Structures diverting stormwater to the sewer system
    - Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals
    - Estimated number or percent of residential, commercial, and industrial service connections
    - Unique service boundary conditions and challenge(s)
- The County has an internal PowerBI dashboard that tracks key information for each of the Cities it serves, including the number of manholes, sewer pipe lengths, and pump stations. Consider expanding this system to include the additional assets identified in the General Order, ensuring comprehensive coverage of all required data.
- Map of sanitary sewer system is included in Appendix C. Plan does not provide reference to up-to-date map of system in the Introduction as required by the reissued Order. Add a reference in the Introduction section to the up-to-date map of the entire set of collection systems managed by the County.

### 4.2.2 Element 2 – Organization

#### General Order Requirements:

*The Sewer System Management Plan (SSMP) must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organizational 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; and*
- *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.).*

#### Audit Findings:

**Organization Overview:**

- The Organization section provides an overview of the division of responsibilities between LACPW Staff for the implementation of the Plan. The narrative descriptions are helpful in defining the responsibilities under each role.
- The Plan outlines the roles and responsibilities of CSMD and the Cities towards attaining the objectives of the General Order Requirements Chapter 12. The responsibilities vary from city to city depending on the agreements made with the County. Section 12.2 lists the CSMD Cities, and the spill-related services currently provided by the Sewer Maintenance Districts to each City. Section 12.3 lists the Key Elements of the SSMP and the responsibilities the CSMD and the City have to complete it. This is helpful with gaining a big picture understanding of the organization and the division of responsibilities between various entities participating in the sewer system management. Consider moving the content from Chapter 12 to the organization and the management plan introduction sections of the Plan.

**Name of the Responsible or Authorized Representative:**

- The Plan designates the Assistant Deputy Director of the SMD as the legally authorized representative responsible for the implementation of WDR General Order requirements. The Principal Engineer and Senior Civil Engineers in SMD may also perform these duties on behalf of the Assistant Deputy Director. The Assistant Deputy Director and Principal Engineer are both included as an On-site Manager in CIWQS for all collection systems owned or managed by LACPW. Civil and Senior Civil Engineers are listed as on-site managers or data submitters for WDIDs managed by LACPW. The SSMP does not document the current Legally Responsible Officials for the collection systems managed by the County. Update the

Organization section to include the current Legally Responsible Officials for each of the collection systems, including names and titles. Periodically review and revise the Organization section between Plan updates and track revisions in the Change Log. Consider periodically verifying that each City collection system managed by the SMD has at least one City staff person designated as an Onsite Manager in CIWQS.

- If there exists a hierarchy for the LROs assigned to the WDIDs for which the County is responsible, the County should consider identifying the person or position serving as the Primary LRO for each WDID and others serving as Secondary LROs.
- Consider documenting any protocols or measures taken to assign at least one LRO on duty and available when the Primary is unavailable.
- The County's designation of multiple LROs for each WDID managed is a best practice.

**Names and Telephone Numbers for Management, Administrative, and Maintenance Positions**

- The plan includes a table with position names and phone numbers. The staff list in Section 2.3.1(b) provides names and contact information that is out-of-date and does not include email addresses. Provide a staff list with correct position names, phone numbers, and email address for positions responsible for implementing specific Sewer System Management Plan elements. The SSMP does not need to include contact information for the whole organization.
- The Plan describes the roles and responsibilities of collection system maintenance crew leaders and supervisors in relation to spill management. The Plan does not specify who is responsible for individual measures of the SSMP, as required by the General Order. Add a figure or description that identifies the specific measures of the SSMP and the names or positions of the individuals responsible for those measures. Consider creating a table or linking the positions responsible for specific SSMP measures to the roles shown on the organization chart or staff list.

**Lines of Authority**

- The Plan provides an organizational chart showing lines of authority. The organizational chart does not show the Civil Engineer's position within the line of authority. As an LRO, the Civil Engineer and any other positions with that role should be identified within the chart. Update organization chart to include all lines of authority for positions responsible for specific elements of the Plan. Consider placing a tag on the organization chart showing which positions are serving as an LRO.

**Chain of Communication**

- The SSMP includes the SMD SSO Procedures Flow Chart from the County's previous Sanitary Sewer Overflow Response Procedures that provided guidance on the typical spill response workflow from receipt of call/alarm through notification and reporting. The procedures do not identify communications and notifications for spills that require additional resources such as large spills or high impact spills. Update the procedures to include communication protocols for notifying the superintendent, managers, cities, and other agencies when additional support is needed.

### 4.2.3 Element 3 – Legal Authority

#### General Order Requirements:

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

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

#### Audit Findings:

**Copies or Electronic Link to Current Sewer System Use Ordinances, Service Agreement and/or Other Legally Binding Procedures**

- The Plan does not provide electronic links or copies of the Los Angeles County Plumbing Codes. Update SSMP to include a copy of the LACO Plumbing Codes, specifically Title 20.
- The County has service agreements with the Cities of Montebello, Maywood, Irwindale, and West Hollywood. The Plan does not provide electronic links or copies of the service agreements with the Cities as required by the General Order. Update SSMP to include copies of service agreements.

**Necessary Legal Authorities**

- The Plan provides narrative descriptions that identifies specific sections of the LA County Plumbing Code and LA County Code Title 20 that provide legal authorities for the specific areas of the 2006 General Order. The selection of relevant ordinances is outdated and does not reflect the components listed in the reissued Order. Update the Legal Authority summaries with the relevant ordinances required by the reissued Order. Consider creating a quick table that associates the specific code to the legal authority and provide narrative expanding on them in sections afterwards.

- The Plan does not document the County possesses legal authority to collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events for spills entering storm drainage systems not owned by the County, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure. Update the Plan to document the County's legal authorities related to collaborating with storm sewer agencies.
- The Plan does not address the legal authority to ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned or maintained, since the County does not own or maintain laterals. It appears that the Plan demonstrated the legal authority to obtain an easement for locations requiring access for sewer system operations and maintenance under a section titled "Legal Authority to Ensure Access for Maintenance, Inspection, or Repairs." This does not address the appropriate reissued General Order Requirement. Update title of Section 3.1.3 to "Legal Authority to Obtain Easement Accessibility Agreements for Locations Requiring Sewer System Operations And Maintenance".

### 4.2.4 Element 4 – Operation and Maintenance Program

#### General Order Requirements:

*The Sewer System Management Plan (SSMP) must include the items listed below that are appropriate and applicable to the Enrollee's system:*

***Updated Map of the Sanitary Sewer System***

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

***Preventive Operation and Maintenance Activities***

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

- *I*nspection and maintenance activities;
- *H*igher-frequency inspections and maintenance of known problem areas, including areas with tree root problems;
- *R*egular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.

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

***Training***

*In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:*

- *T*he requirements of the General Order;
- *T*he Spill Emergency Response Plan procedures and practice drills;
- *S*killed estimation of spill volume for field operators; and
- *E*lectronic CIWQS reporting procedures for staff submitting data.

***Equipment Inventory***

*An inventory of sewer system equipment, including identification of critical replacement parts.*

#### Audit Findings:

**Up-to-Date Mapping**

- As-Built maps are maintained by the entity that owns the collection system assets. For unincorporated areas, SMD maintains the as-builts. For CSMD Cities, each City

is responsible for maintaining as-built maps and the County collects a copy for maintenance operations.

- SMD gathers as-built plans and compiles into a central Document Management System, CADD System, and GIS system maintained by the SMD. Mapbook pages are electronically available on the County website and can be used to locate as-builts:
    - https://dpw.lacounty.gov/smd/sewernetwork/
- SMD prints map books for sewer maintenance crews to use in the field for locating sewer infrastructure. When discrepancies are identified in sewer mapping, crews note them on printed map pages or through GIS on a phone and forward them to SMD GIS resources for updates. Field crews have access to both paper maps and the GIS phone application, depending on their preference. Cityworks will eventually be downloaded onto cell phones and new city tablets.
- Governance and protocols for updating CADD mapping and sewer GIS is not documented. Consider documenting CADD mapping and sewer GIS governance and update processes.
- The County utilizes GIS to generate a mapping system that includes sewer features and map base layers such as aerial images, streets, parcels, and storm drain systems also available from other Divisions within Los Angeles County Public Works, County Departments and other governmental agencies.
- In the current sewer system network map, most valves on the collection system are not mapped. Although crews have drawings, these valves need to be field-verified and mapped in GIS for pipelines. Update sewer network map with valves within the sewer system service area boundaries.
- The Plan includes a map showing locations of SMD field maintenance yards and pump stations in Appendix C.
- The Plan does not state the procedures for maintaining and providing State and Regional Water Board staff access to the map. Update the Plan with procedures to provide to the State and Regional Water Board staff access to the sanitary sewer system GIS map. Consider referencing a link to sewer network map in LACPW website (https://dpw.lacounty.gov/smd/sewernetwork/) and updating map to include all features required by the general order.

**Preventive Operations and Maintenance Activities**

- LACPW conducts routine inspections and maintenance of various system components and describes these activities along with their frequency in the Plan. Activities include sewer line and manhole inspection, gas traps and siphons, drop manholes, sewer line cleaning, vermin/rodent control, sewage pump station, work scheduling, and district mapping.
- The descriptions of inspection and maintenance activities include the frequencies for each activity. Activities such as sewer line and manhole inspections, as well as gas trap maintenance, are conducted periodically, while others are determined based on inspection findings and yard determinations. The Plan does not describe the process

for determining the activities schedules. In gas trap manholes and siphons section, the Plan states that gas traps and siphons are inspected every month. Gas traps are being inspected every 6 months in the South yard. Siphons are being conducted every 6 months and may differ in timeframe between the originally scheduled period. Update the Plan to provide up-to-date inspection and maintenance frequencies and describe the procedures/steps for the scheduling system activities.

- Periodics (PMs) are sites that require higher-frequency inspections due to spills and discharges. These "hot spots" are identified in the field during maintenance and inspections of sewer facilities and are often caused by debris, root intrusion, or other factors. The reason for PMs is not clearly defined in the tracking system and it is difficult to track the specific issue that caused the periodic inspection. Update Plan to document high frequency inspections and maintenance under the operation and maintenance program, including description of the procedures/steps for the scheduling system.
- Closed-circuit television (CCTV) inspections of sewer pipes is covered under SMD's condition assessment program. The primary objectives of this program are to perform closed-circuit television (CCTV) inspections and structurally rate approximately 500 miles of sewer infrastructure each year. The complete cycle is scheduled to last a total of 10 years.
- Most work orders are generated and tracked by LACPW using the Maximo maintenance management system. LACPW is in the process of implementing Cityworks maintenance management system to schedule and track maintenance activities. The activities the field crew performs are recorded in various forms such as service requests, cleaning reports, sewer maintenance daily reports, manhole adjustments, overflow report forms, etc., and are stored in the maintenance management system. All the asset inventory documenting maintenance activities and data collected are transferring over to the Cityworks maintenance management system to aid in the electronic filing and tracking.
- CCTV inspection software applications WinCan and currently GraniteNet are used to video and log events, allowing for quick retrieval of video clips, photos, and observations. Condition assessment schedule and eventually CCTV is planned to be added to Cityworks. Cityworks will be used to record what sections have been inspected, the schedule of activities, and whether work has been complete or not.
- Consolidating data collection into centralized management systems and transitioning to electronic filing streamlines processes, reduces the risk of data loss, and allows for more accurate tracking of maintenance activities. This approach is considered a best practice

**Training**

- LACPW staff responsible for the operation and maintenance of the sewer collection system attend formalized training classes or seminars provided by agencies such as California Occupational Safety and Health Administration (CALOSHA), California Water Environment Association (CWEA), and International Brotherhood of Electrical Workers (IBEW). This training ensures that staff are well-versed in the latest industry best practices for safely and efficiently performing their tasks.

- Informal training approaches are also utilized by LACPW, including tailgate meetings, monthly safety meetings, and apprenticeship training programs led by higher-level staff.
- Training is required for new staff and when new procedures are introduced. The Plan does not indicate that staff be trained on a regular basis, as required by the General Order. Update the Plan to document training provided to comply with the Order.
- Spill response training is performed for all staff that implement the Spill Emergency Response Plan. The SSMP does not state whether the Spill Emergency Response Plan training described in Chapter 6 includes spill emergency response drills. Update SSMP to document the training on Spill Emergency Response Plan procedures and indicate whether drills are being performed as a part of the trainings.
- It is unclear if training for spill volume estimation methods is being conducted within the spill response training. Update the SSMP to document training provided to operations and maintenance staff on spill volume estimation methods.
- New Legally Responsible Officials (LROs) and staff responsible for submitting data are informally instructed by an internal reporting expert. Update SSMP to document training on electronic CIWQS reporting procedures for all staff entering data into CIWQS (Legally Responsible Officials and Data Submitters) as required by the reissued General Order.

**Equipment Inventory**

- Maintenance crews are equipped with all necessary equipment, including radio-equipped trucks, safety gear, pumps, and generators. Equipment is regularly checked, adjusted, repaired, or replaced as necessary. Some yards and pump stations maintain spare parts and each yard is responsible for ordering replacements.

### 4.2.5 Element 5 – Design and Performance Provisions

#### General Order Requirements:

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

***Updated Design Criteria and Construction Standards and Specifications***

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

***Procedures and Standards***

*Procedures and standards for inspecting and testing the installation of newly constructed, installed, repaired, and rehabilitated sewers, pumps, and other appurtenances.*

## Audit Findings:

- LACPW has standard plans and specifications for the construction of sanitary sewers and appurtenances to ensure that sewer lines and connections are properly designed and constructed within unincorporated areas. LACPW specifications by reference incorporate the "Greenbook" Standard Specification for Public Works Construction.
- In addition to the standard plans and specifications, LACPW has other publications that guide the design of collection systems in unincorporated areas. These include the Private Contract Sanitary Sewer Procedural Manual and Guidelines for the Design of Pump Stations, both of which are outdated. SMD is currently revising the pump station design manual, and LACPW should consider updating the Private Contract Sanitary Sewer Procedural Manual to reflect current practices.
- Each city within the CSMD has its own design and construction standards and requirements is responsible for assuring sewers are design and constructed to standard. The Plan describes the following LACPW procedures to ensure compliance with County standards for portions of the system designed and constructed in unincorporated areas:
    - LACPW provides inspectors to review sewer facility rehabilitations or installations compliance with standards for construction in unincorporated areas. CSMD member cities provide City inspectors in the member City service areas.
    - LACPW requires the preparation and submittal of "As-Built" plans of completed projects prior to final approval and acceptance of the project as public infrastructure.
    - LACPW also requires all new sewers, as well as sewer lines rehabilitated by lining, be televised and the video reviewed by SMD's personnel prior to the acceptance of the completed project.
    - LACPW requires that all new or rehabilitated pumping stations be inspected by experienced SMD Electro-Mechanics prior to acceptance for maintenance by the SMD.

### 4.2.6 Element 6 – Spill Emergency Response Plan

#### General Order Requirements:

*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.*

#### Audit Findings:

**Proper Notification Procedures**

- LACPW provide emergency services 24 hours a day, 7 days a week to investigate, respond and/or correct reports from citizens. LACPW's official website includes a webpage for the public to report urgent problems:

- https://pw.lacounty.gov/Contact/#emergencyInfo

- During business hours, emergency calls are received by the Public Works Dispatch Operator who will dispatch the nearest sewer crew to investigate. For after-hour emergencies, the Operator will call the Regional Sewer Maintenance Superintendent or Supervisor who will dispatch standby crew. If the problem is found not to be in the County's jurisdiction, the operator or superintendent will refer to other agencies.
- The Spill Emergency Response Plan provides an Appendix B-Sanitary Sewer Spill Response Flowchart and Notification Table documenting which agencies need to be notified when a spill occurs. The SSMP provides a list outlining the agencies to be notified, method, and time frame for notification in compliance with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders.

**Prompt Notification to Regulatory Agencies and Affected Entities**

- The sewer overflow report form used by field crews to document sewer overflows contains a page providing an Agency Notification List with contact information along with guidance on when agencies should be notified. Clear guidance on the agency notification demonstrates a proactive approach to ensuring quick agency coordination and response during spill events.
- The Spill Emergency Response Plan does not provide notification procedures for potentially affected entities. Update the communication procedures in Spill Emergency Response Plan to include the notification potentially affected entities.

**Procedures to Ensure Staff and Contractors Implement Response Protocols and are Trained**

- The Spill Emergency Response Plan is available to key personnel such as field crews, engineers, and inspectors who manage or respond to spills.
- Contractors are required to have employees that are adequately trained and well equipped. LACPW staff oversee contractors performing emergency sewer repairs or other sewer-related work to ensure compliance with the Spill Emergency Response Plan.
- SMD trains sewer maintenance staff on the Sewer Emergency Response Plan. The Spill Emergency Response Plan documents the County's approach to training staff on spill response procedures as well as training requirements for contractors to ensure their staff are properly trained.

**Procedures to Address Emergency Operations Such as Traffic and Crowd Control**

- The Spill Emergency Response Plan incldues procedures to address emergency system operations, traffic and crowd control and other necessary response activities.

**Program to Ensure Reasons Steps Taken to Contain Flow and Prevent Discharges to Water of State; Steps to Minimize and Correct Impacts to Environment**

- The Spill Emergency Response Plan documents containment protocols used by SMD to contain spills.

### 4.2.7 Element 7 – Sewer Pipe Blockage Control Program Plan

#### General Order Requirements:

*The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer 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 procedure must include, at minimum:*

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

#### Audit Findings:

- Environmental Programs Division (EPD) is responsible for performing fats, oils, and grease (FOG) source control inspections of food service establishments (FSEs).
- EPD regulates industrial waste disposal for 36 SMD Cities by contract and all unincorporated areas. A list of cities that EPD supports with industrial waste disposal, including FOG source control inspections, are found on a Los Angeles County official website:
    - https://cleanla.lacounty.gov/industrial-waste/#Jurisdictions

  For the other Cities that are not on this list, the City handles all their own FOG-related source control activities.
- The EPD's FOG program guidelines and procedures can be found on the Industrial Waste page on the LACPW website:

- https://cleanla.lacounty.gov/industrial-waste/#Obtaining-Clearance

The website provides FOG guidelines, standard drawings for grease pretreatment devices, permit forms, and details on EPD's FOG program. The Plan does not reference the FOG program guidelines, standard drawings, and other reference materials provided on LACPW's Industrial Waste website. Update the Plan to describe and reference the FOG program as detailed on Industrial Waste page on the LACPW website, as applicable.

- The Plan does not include procedures to determine the need for a sewer pipe blockage control program to control fats, oils, grease, rags and debris. Update the Plan to provide procedures to determine the need for a sewer blockage control program. Provide justification in Plan if it is determined that rags and debris is not needed within the program.
- SMD performs public outreach using its webpage. The FOG page on SMD's webpage provides FOG do's and don'ts.
  - https://pw.lacounty.gov/SMD/grease/Index.cfm
- The Plan lists public outreach initiatives such as Annual Report Newsletters, articles on the Cities' newsletters, individual notices to property owners, and the potential for radio and television announcements. The public outreach program described in the Plan is outdated. LACPW no longer performs these public outreach initiatives. Update the Plan to provide an updated description of LACPW's implementation and scheduling of public outreach initiatives. Consider expanding LACPW's public outreach efforts to ensure it effectively promotes the proper disposal of pipe-blocking materials.
- For the disposal of grease and other pipe-blocking substances, FSE's must obtain an Industrial Waste Disposal Permit from EPD. The permit requires a schedule of frequent maintenance and documentation of maintenance and disposal of waste. FOG haulers have multiple options for grease disposal, including Baker Commodity in Vernon and designated disposal locations in Los Angeles and the County Sanitation Districts of Los Angeles County. These disposal sites are regulated and require a fee. The Plan does not describe the planning or scheduling process for disposal of pipe-blocking substances generated within the sanitary sewer system service area. Update the Plan to provide a description of the planning and scheduling involved in addressing the disposal of pipe-blocking substances generated within the sanitary service area, including a list of acceptable disposal facilities.
- The LACO Plumbing Code Title 28 provides legal authority to prohibit discharges into the system and establish measures to prevent spills and blockages. Sections 306.2, 714.2, and 1101.2 specifically prohibit unauthorized discharges of rain, surface, or subsurface water into the collection system, which complies with the order.
- The Director of Public Works is granted authority to require the installation of grease interceptors at FSEs under LACO Plumbing Code Title 28. Section 20.36.560 further empowers the Director to mandate the installation of treatment facilities, including grease interceptors, at any establishment generating enough FOG to damage or increase maintenance costs in the sewer collection system.

- The EPD requires that any FSE with the potential to produce grease install a grease control device (GRD). New or remodeled FSEs and those under new ownership must also secure a permit from the Building and Safety Division (BSD).
- During inspections, inspectors physically examine the GRD. If a grease interceptor (GI) is used, FSEs are required to open and inspect it. If cleaning records are not provided, or if the GI cannot be accessed, the FSE must clean it. Permit conditions require GIs to be cleaned at least once every three months. If issues are identified, they are documented, and a job order is created. The FSE signs off on the order and receives a receipt.
- The source control inspection process follows a standard workflow, including researching plans, preparing for the inspection, reviewing operations, and requesting GRD maintenance documentation. Inspectors may ask questions about waste oil management, changes in operations that affect the permit, and maintenance frequency. They also check for compliance with Best Management Practices such as ensuring BMP posters are visible in the kitchen.
- Inspectors document their findings and enter data into the HMS database. HMS database automates the inspection process and is used to track and manage permit inspection and source control data.
- The Plan does not describe the requirements for maintenance, best management practice, and record keeping or reporting. Update the Plan to provide maintenance requirements, best management practices requirements, and recordkeeping and reporting requirements.
- When SMD encounters FOG issues in the collection system, whether from spills CCTV inspections, or sewer cleaning, the source of the problem is evaluated as either residential, commercial, or both. For residential spills, SMD may notify residents door-to-door, providing information on proper grease disposal practices. For recurring issues, the affected area is placed on a preventive maintenance schedule.
- In the case of commercial spills, the incident is referred to EPD for investigation. EPD checks GRD maintenance and requires corrective actions when needed. If an FSE without a GRD is responsible for a spill, EPD mandates the installation of a GRD. If a GRD-equipped FSE causes a spill, more frequent maintenance may be required. All investigations are documented in the HMS database, and results are communicated to SMD as relevant.
- The Plan does describe the implementation of source control. Update Plan to include a procedure for the implementation of FOG source control measures for the various FOG sources.
- Section 20.36.400 of the LACO Code provides legal authority to inspect FOG-producing facilities, prohibiting the discharge of substances that may obstruct or require frequent maintenance of the sewer system.
- The EPD has sufficient inspection and enforcement staffing to achieve an annual FSE inspection cycle and follow up on requirements and violations identified.

- The enforcement process for violations varies based on location. In unincorporated areas, inspectors issue a Notice of Violation or Order to Comply with a set deadline. Follow-up inspections verify compliance, and unresolved issues may be escalated to supervisors. In rare instances, compliance issues are referred to headquarters, possibly resulting in legal action with the District Attorney. In SMD cities, violations are handled similarly, but escalation may involve the city's Code Enforcement and, if necessary, the City Attorney.
- HMS database maintains records of all sites and their locations under the EPD's FOG program. Additionally, FOG-prone sections (i.e., pipe segments) of the sewer collection system, referred to as "hot spots," are identified during routine maintenance and investigations of stoppages and spills. These sections are placed on periodic cleaning schedules depending on the severity of the problem. The Plan does not describe the County's procedure to identify specific sections of the system impacted by FOG blockages and cleaning schedule for each section a required by the reissued General Order. The County uses the Maximo maintenance management system to identify and schedule cleaning of pipe segments prone to FOG blockages and is in the process of transitioning to using Cityworks maintenance management system for identify and scheduling of cleaning. Update Plan to describe existing procedures used to identify these sites and how these sections are being tracked.

### 4.2.8 Element 8 – System Evaluation, Capacity Assurance and Capital Improvements

#### General Order Requirements:

*The Plan must include procedures and activities for:*

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

***System Evaluation and Condition Assessment***

*The Plan must include procedures to:*

- *Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;*
- *Identify and justify the amount (percentage) of its system for its condition to be assessed each year;*

*Prioritize the condition assessment of system areas that:*

- *Hold a high level of environmental consequences of vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;*
- *Are located within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;*

- *Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;*

*Assess the system conditions using visual observation, video surveillance and/or other comparable system inspection methods;*

*Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;*

*Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and*

*Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.*

***Capacity Assessment and Design Criteria***

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

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

*The capacity assessment must consider:*

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

***Prioritization of Corrective Action***

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

***Capital Improvement Plan***

*The capital improvement plan must include the following items:*

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

## Audit Findings:

**System Evaluation and Condition Assessment**

- Under the Condition Assessment Program, SMD performs CCTV inspections at a rate of approximately 500 miles of sewer infrastructure each year. The complete cycle is scheduled to last a total of 10 years. The assessment prioritized sewer lines with the most potential for repair needs based on maintenance history, past overflow records, sewer line locations, and age.
- SMD utilizes the NASSCO rating system to identify defects and observations using PACP observation codes. WinCan and GraniteNet are used to video and log events from CCTV inspection. ArcGIS is also used to gather information from the condition assessment findings.
- There is currently no pump station or force main condition assessment program. SMD is developing a future initiative for the condition assessment of their pressurized facilities.
- Prior procedure for the assessment prioritized areas based on spill history. The assessment previously assigned priority based on number spills per 100 miles. Now, each assessment project is prioritized based on jurisdiction/cities, ordering based on spill rate. The prioritization for repairs are also based on these factors for each project. The Plan does not describe all the items required under the General Order for the prioritization of condition assessment areas. SMD is considering accounting for more factors for risk and prioritization. Update Plan to describe the prioritization of condition assessments on areas that: (1) hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies; (2) are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and (3) environmentally sensitive areas; and are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List.
- In addition to CCTV inspection, visual inspection is conducted on sewer facilities. The visual observation of the inspector is included as footnotes on forms for replacements, repairs, issue identification. This method will transition to the Cityworks maintenance management system to better manage and keep record of findings and address issues.

- The current Plan does not include procedures to utilize evidence of system conditions that may contribute to exiting of sewage from the system. Update Plan to include procedures to 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.
- Documents and recordkeeping of system evaluation and condition assessment inspections and activities are maintained using GraniteNet software and are planned for transit to Cityworks software. The Plan does not provide information on the documentation and recordkeeping of system evaluations and assessments. Add description of the documentation and record keeping system used to manage system evaluation and condition assessment inspections and activities.
- The SMD service area has sections of the system that are susceptible to impacts from landslides that may cause service disruptions. The Plan does not identify system assets vulnerable to direct and indirect impacts of climate change per the General Order. The County has an overarching Emergency Response Plan for addressing large-scale emergency events. Update the Plan to describe the County's procedures to address system assets vulnerable to direct and indirect impacts of climate change including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.

**Capacity Assessment and Design Criteria**

- The Land Development Division is responsible for ensuring newly constructed pipelines within County-owned unincorporated areas are constructed with adequate capacity. A study is required for each development to analyze the capacity of the existing system and will set forth mitigation requirements for developers to ensure adequate capacity sizing of proposed sewer lines to accommodate the current design and future base, peak, and wet weather flows
- The County requires submittal of a capacity study for new projects affecting the capacity of the public sewer system. The capacity assessment assumes an ideal system with no illegal connections, using ½ full pipe sizing design criteria as adequate. There is currently no hydraulic modeling in place. Instead, reports are received and plan-checked. Small and large-scale sewer shed studies are conducted, with a preliminary assessment to determine whether a capacity study is needed.
- Pump stations are designed for full buildout. If a developer wants to connect additional tracts they will be required to have an engineer evaluate pump station capacity needs.
- Factors such as zoning and acreage are used to estimate load, and if the load is too high, it triggers a sewer study. Flow studies are determined case by case through permitting.
- Identifying excessive dischargers is difficult. However, capacity has not been a significant issue, as indicated by the overflow summary.

- The Plan does not describe the procedures for the collection and utilization of data for capacity assessment. The County required developers to perform sewer studies for development occurring in unincorporated areas. Consolidated Sewer Maintenance District member cities are responsible for capacity assurance within member city jurisdictional areas. Update the Plan to describe how the County assures capacity in unincorporated areas.
- The County's Capacity Enhancement Plan focuses on managing infiltration and inflow (I/I) by ensuring proper system design through plan checks, careful inspection during construction, and the use of appropriate pipe materials.
- After installation, multiple strategies are employed to identify and eliminate I/I sources where feasible. These strategies include visual inspections, CCTV, smoke and dye testing, and enforcement of laws to address illicit connections such as sump pumps or roof drainage.
    - Structural issues like cracks or deteriorated pipes are corrected through repair, replacement, or lining under capital improvement programs.
    - Maintenance issues such as grease accumulation and debris are addressed through regular sewer line cleaning, and flow measurements are used to assess the capacity of sewer lines suspected of surcharging.
- Coordination with LACSD is essential, particularly regarding lines that cause flooding. LACSD works with LACPW to develop a list of manholes affected by inflow and infiltration. LACSD usually requests that manholes be sealed and peepholes corked. Sampling work and analysis are also performed when requested.
- LACPW has provided redundancy in pump station controls and pumping systems, yet the SSMP does not document these provisions. Update the Plan to describe the actions taken by LACPW to provide necessary redundancy in pumping and storage capacities.
- The County has processes in place for addressing new developments and high-density areas but does not describe them in the Plan. Additionally, the Plan does not describe the procedures for the evaluation of capacity of increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change, increased erosive forces in canyons and streams near underground and aboveground system components due to larger and/or higher-intensity storm events, major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events. The Plan does not describe the methods and procedures for capacity assessment that address all the components listed in the reissued order. Update Plan to describe the methods and procedures for capacity assessment that address all the components listed in the reissued order.

**Prioritization of Corrective Action:**

- SMD prioritizes corrective action based on:
    - Likelihood of failure which is determined from findings of condition assessment (e.g., prioritizing NASSCO PACP rating, 4 and 5) and;

- Consequence of failure (e.g., proximity to water body, railroad, road type, and easement)

The Plan does not document the procedures SMD uses to prioritize corrective actions based on findings from the condition and capacity assessments. Update the Plan to describe how SMD prioritizes corrective actions based on findings from condition and capacity assessments.

**Capital Improvement Plan**

- The Project Management Division (PMD) manages the CIP and schedule. The PMD tracks the budget, scope and schedule. There are currently several on-call contracts for various system improvements from the Accumulative Capital Outlay (ACO) Fund. The ACO Program provides funding for sewer pipe replacements, relief sewer construction, and major improvements to sewage pumping stations.
- Internal and external project funding sources for each project varies. Funding can be from the zone budget or LACPW identifies other assistance.
- The Plan does not include a list of sewer system capital projects. Update the Plan to include the most recent capital improvement plan and list of CIP projects with details including completion dates and funding sources.
- The Plan does not discuss the interagency coordination that LACPW performs. Update the Plan to describe the LACPW's joint coordination internally and interagency coordination with other utility agencies.

### 4.2.9 Element 9 – Monitoring, Measurement, and Program Modifications

#### General Order Requirements:

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

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

#### Audit Findings:

- Relevant information for prioritization of SSMP activities is collected in an array of information systems, databases, and spreadsheets.

  - WinCan and GraniteNet are used to video and log events from CCTV inspection.
  - Maintenance activities are documented in the field using paper forms and work orders, and later entered into Maximo. SMD is in the process of migrating maintenance management from Maximo to Cityworks.
  - FOG inspection activities are recorded on paper and stored in a database.
  - Spill data is stored in the State Water Resources Control Board's CIWQS database and SMD internal Power BI database. Productivity reports documenting and summarizing the work performed per City can be generated by Power BI.
  - Previous audits and their findings can be accessed from the SMD webpage.

- LACPW to transition from Maximo to Cityworks for management of maintenance activities. The implementation of Cityworks will streamline data collection and improve asset management efficiency.
- The Plan does not describe how the sewer activities and service information is being used for the prioritization of plan activities. Update to include description of how relevant information will be used to identify and prioritize appropriate Plan activities
- The Plan states that the implementation and effectiveness of the SSMP is evaluated by a SSMP committee consisting of at least two Section Heads from the SMD and all the field Superintendents. LACPW no longer has an SSMP committee performing Plan monitoring and evaluation. The Plan does not summarize how the SMD is monitoring the implementation and measuring the effectiveness of each Plan Element. Update Plan to include description on how the monitoring of each of these elements are being documented and provide a schedule or summary table/tracker.
- The effectiveness of the program is monitored and tracked through the LACPW's Performance Measure Indicators of the key activities aimed towards minimizing sewer overflows. These include the total number of overflows, total number equal or greater than 1,000 gallons or any amount reaching the waters of the United States, spill response time, reduction of repeated overflow incidents at the same location, and reduction in number of spills caused by flows exceeding the capacity of the collection system.
- SSMP success is primarily measured by overall sewer overflow performance.
- SSMP identifies and illustrates spill trends from figures in Appendix 1. They are used to identify SSO trends and to evaluate overall SSMP program success

## 4.2.10 Element 10 – SSMP Internal Audits

### General Order Requirement:

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

***Specification 5.4 – Sewer System*** **Management Plan Audits**

*The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit must be conducted for the period after the end of the Enrollee's last required audit period. Within six months after the end of the required 3-year audit period, the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 (Sewer System Management Plan Audit Reporting Requirements) of Attachment E1 of this General Order.*

*Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff.*

*The internal audit shall be appropriately scaled to the size of the system(s) and the number of spills. The Enrollee's sewer system operators must be involved in completing the audit. At minimum, the audit must:*

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

*The Enrollee shall submit a complete audit report that includes:*

- *Audit findings and recommended corrective actions;*
- *A statement that sewer system operators' input on the audit findings has been considered; and*
- *A proposed schedule for the Enrollee to address the identified deficiencies.*

### Audit Findings:

The audit team reviewed previous audit practices and documentation, against the audit requirements in the 2022 General Order.

- SMD has posted all SSMP program audits on the SMD website:
    - https://dpw.lacounty.gov/smd/smd/index.cfm
- The County performed previous internal audits at a minimum of every two years as required by the 2006 General Order. Each audit included an evaluation of the

effectiveness of the SSMP, identification of SSMP audit findings and corrective actions and opportunities to improve the Plan and effectiveness of the program.

- This audit serves as the first audit undertaken as required by 2022 General Order. The County must complete, certify and upload the final version of this audit report to CIWQS by November 2, 2024.
- The audit schedule described in the SSMP is still based on a 2-year audit cycle. Update the SSMP audit schedule to reflect audit requirements from the 2022 General Order.
- SMD manages approximately 4,614 miles of collection system pipelines and 159 pump stations. As a whole, the portfolio of collection systems managed by SMD is the second largest collection of pipelines in California, with the largest being the City of Los Angeles.
- The scale of the audits are appropriate to the size and performance of the system.

### 4.2.11 Element 11 – Communication Program

#### General Order Requirements:

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

*The public for:*

- *Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and*
- *The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.*

*Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for:*

- *System operation, maintenance, and capital improvement-related activities.*

#### Audit Findings:

**Communication with the public for spills and discharges resulting in closures of public areas, or that enter a source of drinking water**

- In the event of a spill or discharge in areas where the public may come into contact, such as beaches, the spill response team evaluates the extent of the spill and posts signage around the impacted areas. The Plan does not describe the communication procedure to notify the public for spills and discharges. Update the Plan with the communication procedure to notify the public of spills and discharges that result in public area closures or that enter a source of drinking water.

**Communication with the public on the development, implementation, and performance of its SSMP; Communication system shall provide the public the opportunity to provide input as the program is developed and implemented.**

- SMD hosts a Sewer Maintenance webpage on the Los Angeles County Department of Public Works website:

  - https://dpw.lacounty.gov/smd/smd/index.cfm
- The website provides the public with ample information regarding the SSMP and SSMP program implementation:
  - Interactive sewer mapping providing the public with a means to find the sewer map and sewer pipeline servicing their property
  - Annual performance reports
  - Current SSMP
  - Condition assessment reports
  - FOG best management practices
  - Homeowner responsibilities
  - Answer to frequently asked questions
- The Sewer Maintenance webpage provides a means to report urgent problems:
  - https://pw.lacounty.gov/Contact/#emergencyInfo
- SMD provides a “Contact Us” link on the Sewer Maintenance webpage providing the public with a phone number for inquiries, an 800 number for emergencies and a mailing address for written inquiries.
- The plan does not document a communication procedure for SMD to communicate with the public for input on SSMP development, implementation, and update. Update the Plan to include procedures for communicating with the public on the update and development of the SSMP and to provide the public with the opportunity to provide input to Plan implementation and updates of the SSMP.
- The SMD is in constant communication with the City of Los Angeles and other entities that are connected to the system for operations, maintenance, and spill response related activities. Additionally, SMD communicates with City of Los Angeles when capital improvement-related activities will impact each other's system.
- The Plan does not include procedures to communicate with owners/operators of systems that connect into the Sewer Maintenance District’s system for system operation, maintenance, and capital improvement-related activities. Update the SSMP to include procedures for communicating with owners/operators that connect to the Sewer Maintenance District’s collection systems for system related operation, maintenance, and capital improvement-related activities.

# 5 Strengths and Implementation Accomplishments

This section documents strengths and implementation accomplishments of the SSMP and program implementation to support continued growth and success in these areas. **Table 5-1** includes the strengths and implementation accomplishments that were identified during the audit.

**Table 5-1: Strengths and Implementation Accomplishments**

| SSMP Element | Strengths and Implementation Accomplishments |
|---|---|
| Overall | Strong sewer overflow performance with less than 2 SSOs per 100 miles per year for the approximately 4,600 miles of pipelines managed by the County. |
| D.1 Organization | Multiple LROs assigned in CIWQS for each of the 45 WDIDs the County is managing. |
| D.3 Legal Authorities | Strong legal authorities. |
| D.4 Operation and Maintenance Program | System network mapping is compiled and available on mobile devices and via the internet. |
| D.4 Operation and Maintenance Program | Manhole inspection approach appears to be cost effective and able to manage maintenance required on low to moderate risk pipe segments. |
| D.4 Operation and Maintenance Program | The County has completed one cycle of CCTV for the collection system and, in general, the pipelines appear to be in very good condition. |
| D.5 Design and Performance Provisions | The County has strong design and construction standards. |
| D.7 Sewer Pipe Blockage Control Program | The Environmental Programs Division has implemented a strong FOG source control inspection program along with a database to track inspection activities. |
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The County has very few capacity-related sewer overflows. The County designs pump stations for full buildout. Developers are required to perform capacity analyses when requesting new connections to the system. The process is effective for managing system capacity. |
| D.10 Monitoring, Measurement and Program Modifications | The County develops monthly staff reports with performance metrics and the leadership team meets monthly to review program progress and identify actions to improve the program. |
| D.11 Communication Program | The County uses a website page to provide program transparency. The website includes the SSMP CCTV data and network mapping. |

# 6 SSMP Audit Findings and Recommended Corrective Actions

Several audit findings were identified during the audit and are in this Section along with recommended corrective actions. Audit findings are divided into three categories and coded with a letter, as defined in **Table 6-1**. Major and minor non-conformance findings and recommended corrective actions are included in **Table 6-2,** along with a schedule for addressing actions related to these findings.

**Table 6-1: Audit Finding Definitions**

| Finding Category | Finding Type | Finding Definition |
|---|---|---|
| A | Non-Compliance | A process or outcome resulting in the SSMP or SSMP Program implementation not currently complying with the General Order requirements. |
| B-major | Major Non-Conformance | Moderate to high risk that a statement in the SSMP is not fully conformed to the General Order requirements. Moderate to high risk to the effectiveness of the SSMP implementation. |
| B-minor | Minor Non-Conformance | Low risk that a statement in the SSMP or SSMP Program implementation is not fully conformed to the General Order requirements. Low risk to the effectiveness of the SSMP implementation. |

## Table 6-2: Audit Findings and Recommended Corrective Actions

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.1 SSMP Goal and Introduction | The Goals and Actions section identifies goals for the SSMP and actions to be taken under the Plan for the accomplishment of the goals. The fourth action listed states to "completely recover the overflow". This action is not feasible. | Revise the action to be attainable (e.g., "recover the overflow to the extent feasible"). | **B-minor** | 5/2/2025 |
| D.1 SSMP Goal and Introduction | The Introduction does not provide a general description of the sewer management program as required by the reissued General Order. | Update the Plan to include a description of the services DPW provides and an overview of the sewer system management program. | **B-minor** | 5/2/2025 |
| D.1 SSMP Goal and Introduction | Section does not discuss Plan updates as required by the reissued Order. | Add narrative to discuss plan updates. | **B-minor** | 5/2/2025 |
| D.1 SSMP Goal and Introduction | The Plan does not include an audit and update schedule as required by the reissued Order. | Add schedule of plan audits and updates through the period between the 2025 SSMP update and the subsequent 2031 SSMP update. Include milestones for incorporation of key activities associated with sewer spill prevention. | **B-minor** | 5/2/2025 |
| D.1 SSMP Goal and Introduction | The Plan does not include an overview of sewer system assets and service area required by the reissued Order. | Add sewer system asset overview and service area information for each sewer collection system. | **B-minor** | 5/2/2025 |
| D.1 SSMP Goal and Introduction | Map of sanitary sewer system is included in Appendix C. Plan does not provide reference to up-to-date map of system in the Introduction as required by the reissued Order. | Add a reference to the up-to-date map of the entire Los Angeles DPW system in the Introduction section. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.2 Organization | The SSMP does not document the current Legally Responsible Officials for the collection system managed by the County. | Update the Organization section to include the current Legally Responsible Officials for each of the collection systems, including names and titles. Periodically review and revise the Organization section between Plan updates and track revisions in the Change Log. Consider periodically verifying that each City collection system managed by the SMD has at least one City staff person designated as an Onsite Manager in CIWQS. | **B-minor** | 5/2/2025 |
| D.2 Organization | The staff list in Section 2.3.1(b) provides names and contact information that is out-of-date and does not include email addresses. | Provide a staff list with correct position names, phone numbers, and email address for positions responsible for implementing specific Sewer System Management Plan elements. The SSMP does not need to include contact information for the whole organization. | **B-minor** | 5/2/2025 |
| D.2 Organization | The Plan does not specify who is responsible for individual measures of the SSMP, as required by the General Order. | Add a figure or description that identifies the specific measures of the SSMP and the names or positions of the individuals responsible for those measures. | **B-minor** | 5/2/2025 |
| D.2 Organization | The organizational chart does not show the Civil Engineer's position within the line of authority. As an LRO, the Civil Engineer and any other positions with that role should be identified within the chart. | Update organization chart to include all lines of authority for positions responsible for specific elements of the Plan. Consider placing a tag on the organization chart showing which positions are serving as an LRO. | **B-minor** | 5/2/2025 |
| D.2 Organization | The procedures do not identify communications and notifications for spills that require additional resources such as large spills or high impact spills. | Update the procedures to include communication protocols for notifying the superintendent, managers, cities, and other agencies when additional support is needed. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.3 Legal Authority | The Plan does not provide electronic links or copies of the Los Angeles County Plumbing Codes. | Update SSMP to include a copy of the LACO Plumbing Codes, specifically Title 20. | **B-minor** | 5/2/2025 |
| D.3 Legal Authority | The Plan does not provide electronic links or copies of the service agreements with the Cities as required by the General Order. | Update SSMP to include copies of service agreements. | **B-minor** | 5/2/2025 |
| D.3 Legal Authority | The selection of relevant ordinances is outdated and does not reflect the components listed in the reissued Order. | Update the Legal Authority summaries with the relevant ordinances required by the reissued Order. | **B-minor** | 5/2/2025 |
| D.3 Legal Authority | The Plan does not document the County possesses legal authority to collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events for spills entering storm drainage systems not owned by the County, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure. | Update the Plan to document the County's legal authorities related to collaborating with storm sewer agencies. | **B-minor** | 5/2/2025 |
| D.3 Legal Authority | Section 3.1.3 titled "Legal Authority to Ensure Access for Maintenance, Inspection, or Repairs" does not address the appropriate reissued General Order Requirement. | Update title of Section 3.1.3 to "Legal Authority to Obtain Easement Accessibility Agreements for Locations Requiring Sewer System Operations And Maintenance". | **B-minor** | 5/2/2025 |
| D.4 Operation and Maintenance Program | In the current sewer system network map, most valves on the collection system are not mapped. Although crews have drawings, these valves need to be field-verified and mapped in GIS for pipelines. | Update sewer network map with valves within the sewer system service area boundaries. | **B-major** | 11/2/2027 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.4 Operation and Maintenance Program | The Plan does not state the procedures for maintaining and providing State and Regional Water Board staff access to the map. | Update the Plan with procedures to provide to the State and Regional Water Board staff access to the sanitary sewer system GIS map. Consider referencing a link to sewer network map in LACPW website (https://dpw.lacounty.gov/smd/sewernetwork/) and updating map to include all features required by the general order. | **B-minor** | 5/2/2025 |
| D.4 Operation and Maintenance Program | The Plan does not describe the process for determining the activities schedules. In gas trap manholes and siphons section, the Plan states that gas traps and siphons are inspected every month. Gas traps are being inspected every 6 months in the South yard. Siphons are being conducted every 6 months and may differ in timeframe between the originally scheduled period. | Update the Plan to provide up-to-date inspection and maintenance frequencies and describe the procedures/steps for the scheduling system activities. | **B-minor** | 5/2/2025 |
| D.4 Operation and Maintenance Program | Periodics (PMs) are sites that require higher-frequency inspections due to spills and discharges. These "hot spots" are identified in the field during maintenance and inspections of sewer facilities and are often caused by debris, root intrusion, or other factors. The reason for PMs is not clearly defined in the tracking system and it is difficult to track the specific issue that caused the periodic inspection. | Update Plan to document high frequency inspections and maintenance under the operation and maintenance program, including description of the procedures/steps for the scheduling system. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.4 Operation and Maintenance Program | The Plan does not indicate that staff be trained on a regular basis, as required by the General Order. | Update the Plan to document training provided to comply with the Order. | **B-minor** | 5/2/2025 |
| D.4 Operation and Maintenance Program | The SSMP does not state whether the Spill Emergency Response Plan training described in Chapter 6 includes spill emergency response drills. | Update the SSMP to document the training of operations and maintenance staff and contractors on the requirements of the General Order. | **B-minor** | 5/2/2025 |
| D.4 Operation and Maintenance Program | It is unclear if training for spill volume estimation methods is being conducted within the spill response training. | Update the SSMP to document training provided to operations and maintenance staff on spill volume estimation methods. | **B-minor** | 5/2/2025 |
| D.4 Operation and Maintenance Program | New Legally Responsible Officials (LROs) and staff responsible for submitting data are informally instructed by an internal reporting expert. | Update SSMP to document training on electronic CIWQS reporting procedures for all staff entering data into CIWQS (Legally Responsible Officials and Data Submitters) as required by the reissued General Order. | **B-minor** | 5/2/2025 |
| D.6 Spill Emergency Response Plan | The Spill Emergency Response Plan does not provide notification procedures for potentially affected entities. | Update the communication procedures in Spill Emergency Response Plan to include the notification potentially affected entities. | **B-minor** | 5/2/2025 |
| D.7 Sewer Pipe Blockage Control Program Plan | The Plan does not reference the FOG program guidelines, standard drawings, and other reference materials provided on LACPW's Industrial Waste website. | Update the Plan to describe and reference the FOG program as detailed on Industrial Waste page on the LACPW website, as applicable. | **B-minor** | 5/2/2025 |
| D.7 Sewer Pipe Blockage Control Program Plan | The Plan does not include procedures to determine the need for a sewer pipe blockage control program to control fats, oils, grease, rags and debris. | Update the Plan to provide procedures to determine the need for a sewer blockage control program. Provide justification in Plan if it is determined that rags and debris is not needed within the program. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.7 Sewer Pipe Blockage Control Program Plan | The public outreach program described in the Plan is outdated. LACPW no longer performs these public outreach initiatives. | Update the Plan to provide an updated description of LACPW's implementation and scheduling of public outreach initiatives. | **B-minor** | 5/2/2025 |
| D.7 Sewer Pipe Blockage Control Program Plan | The Plan does not describe the planning or scheduling process for disposal of pipe-blocking substances generated within the sanitary sewer system service area. | Update the Plan to provide a description of the planning and scheduling involved in addressing the disposal of pipe-blocking substances generated within the sanitary service area, including a list of acceptable disposal facilities. | **B-minor** | 5/2/2025 |
| D.7 Sewer Pipe Blockage Control Program Plan | The Plan does not describe the requirements for maintenance, best management practice, and record keeping or reporting. | Update the Plan to provide maintenance requirements, best management practices requirements, and recordkeeping and reporting requirements. | **B-minor** | 5/2/2025 |
| D.7 Sewer Pipe Blockage Control Program Plan | The Plan does describe the implementation of source control. | Update Plan to include a procedure for the implementation of FOG source control measures for the various FOG sources. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.7 Sewer Pipe Blockage Control Program Plan | The Plan does not describe the County's procedure to identify specific sections of the system impacted by FOG blockages and cleaning schedule for each section a required by the reissued General Order. The County uses the Maximo maintenance management system to identify and schedule cleaning of pipe segments prone to FOG blockages and is in the process of transitioning to using Cityworks maintenance management system for identify and scheduling of cleaning. | Update Plan to describe existing procedures used to identify these sites and how these sections are being tracked. | **B-minor** | 5/2/2025 |
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The Plan does not describe all the items required under the General Order for the prioritization of condition assessment areas. SMD is considering accounting for more factors for risk and prioritization. | Update Plan to describe the prioritization of condition assessments on areas that: (1) hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies; (2) are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and (3) environmentally sensitive areas; and are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List. | **B-major** | 5/2/2025 |
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The current Plan does not include procedures to utilize evidence of system conditions that may contribute to exiting of sewage from the system. | Update Plan to include procedures to 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. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | Plan does not provide information on the documentation and recordkeeping of system evaluations and assessments. | Add description of the documentation and record keeping system used to manage system evaluation and condition assessment inspections and activities | **B-minor** | 5/2/2025 |
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The Plan does not identify system assets vulnerable to direct and indirect impacts of climate change per the General Order. The County has an overarching Emergency Response Plan for addressing large-scale emergency events. | Update the Plan to describe the County's procedures to address system assets vulnerable to direct and indirect impacts of climate change including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions. | **B-minor** | 5/2/2025 |
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The Plan does not describe the procedures for the collection and utilization of data for capacity assessment. The County required developers to perform sewer studies for development occurring in unincorporated areas. Consolidated Sewer Maintenance District member cities are responsible for capacity assurance within member city jurisdictional areas. Update the Plan to describe how the County assures capacity in unincorporated areas. | Update the Plan to describe how the County assures capacity in unincorporated areas. | **B-minor** | 5/2/2025 |
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The Plan does not describe the actions taken to provide the necessary redundancy in pumping and storage capacities. | Update the Plan to describe the actions taken by LACPW to provide necessary redundancy in pumping and storage capacities. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The Plan does not describe the procedures for the evaluation of capacity of increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change, increased erosive forces in canyons and streams near underground and aboveground system components due to larger and/or higher-intensity storm events, major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events. The Plan does not describe the methods and procedures for capacity assessment that address all the components listed in the reissued order. | Update Plan to describe the methods and procedures for capacity assessment that address all the components listed in the reissued order. | **B-minor** | 5/2/2025 |
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | SMD prioritizes corrective action based on: Likelihood of failure which is determined from findings of condition assessment (e.g., prioritizing NASSCO PACP rating, 4 and 5) and consequence of failure (e.g., proximity to water body, railroad, road type, and easement). The Plan does not document the procedures SMD uses to prioritize corrective actions based on findings from the condition and capacity assessments. | Update the Plan to describe how SMD prioritizes corrective actions based on findings from condition and capacity assessments. | **B-minor** | 5/2/2025 |
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The Plan does not include a list of sewer system capital projects. | Update the Plan to include the most recent capital improvement plan and list of CIP projects with details including completion dates and funding sources. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.8 System Evaluation, Capacity Assurance and Capital Improvements | The Plan does not discuss the interagency coordination that LACPW performs. | Update the Plan to describe the LACPW's joint coordination internally and interagency coordination with other utility agencies. | **B-minor** | 5/2/2025 |
| D.9 Monitoring, Measurement, and Program Modifications | The Plan does not describe how the sewer activities and service information is being used for the prioritization of plan activities. | Update to include description of how relevant information will be used to identify and prioritize appropriate Plan activities | **B-minor** | 5/2/2025 |
| D.9 Monitoring, Measurement, and Program Modifications | LACPW no longer has an SSMP committee performing plan monitoring and evaluation. The Plan does not summarize how the SMD is monitoring the implementation and measuring the effectiveness of each Plan Element. | Update Plan to include description on how the monitoring of each of these elements are being documented and provide a schedule or summary table/tracker. | **B-minor** | 5/2/2025 |
| D.10 SSMP Audits | The audit schedule described in the SSMP is still based on a 2-year audit cycle. | Update the SSMP audit schedule to reflect audit requirements from the 2022 General Order. | **B-minor** | 5/2/2025 |
| D.11 Communication Program | The Plan does not describe the communication procedure to notify the public for spills and discharges. | Update the Plan with the communication procedure to notify the public of spills and discharges that result in public area closures or that enter a source of drinking water. | **B-minor** | 5/2/2025 |
| D.11 Communication Program | The plan does not document a communication procedure for SMD to communicate with the public for input on SSMP development, implementation, and update. | Update the Plan to include procedures for communicating with the public on the update and development of the SSMP and to provide the public with the opportunity to provide input to Plan implementation and updates of the SSMP. | **B-minor** | 5/2/2025 |

| SSMP Element | Audit Finding | Recommended Corrective Action or Opportunity for Improvement | Finding Category | Schedule |
|---|---|---|---|---|
| D.11 Communication Program | The Plan does not include procedures to communicate with owners/operators of systems that connect into the District's system for system operation, maintenance, and capital improvement-related activities. | Update the SSMP to include procedures for communicating with owners/operators that connect to the Sewer Maintenance District's collection systems for system related operation, maintenance, and capital improvement-related activities. | **B-minor** | 5/2/2025 |