Attachment C

COUNTY OF SAN DIEGO

Sewer System Management Plan

Audit of the Sewer System Management Plan

February 2025 / FINAL

COUNTY OF SAN DIEGO

Sewer System Management Plan

Audit of the Sewer System Management Plan

February 2025 / FINAL

Digitally signed by Ryan F. Orgill
Contact Info: Carollo Engineers, Inc.
Date: 2025.02.20 15:03:28 -08'00'

Contents

Tables

Figures

Abbreviations

CCTV	closed-circuit television
CIP	capital improvement plan
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
County	County of San Diego
County Code	County of San Diego Code of Regulatory Ordinances
DEH	Department of Environmental Health
District	County Sanitation District
FOG	fats, oil, and grease
GIS	geographic information system
I&I	inflow and infiltration
LRO	legally responsible official
O&M	operations and maintenance
PACP	Pipeline Assessment and Certification Program
RWQCB/Regional Water Board	Regional Water Quality Control Board
SERP	Spill Emergency Response Plan
SSMP	Sewer System Management Plan
SSO	sanitary sewer overflow
SWRCB/State Water Board	State Water Resources Control Board
WDID	waste discharge identification
WDR	Water Discharge Requirement
WWTP	wastewater treatment plant

SECTION 1 GOAL AND INTRODUCTION

1.1 Background

On December 2, 2002, the State Water Resources Control Board (SWRCB or State Water Board) adopted the Statewide Water Discharge Requirements (WDRs) General Order for Sanitary Sewer Systems Order No. WQ 2022-0103-DWQ (General Order), which requires all federal and state agencies, municipalities, counties, districts, cities, and other public entities that own or operate a sanitary sewer system greater than one mile in length to comply with the elements of the General Order. With the goal of providing a consistent statewide approach for reducing sanitary sewer overflows (SSOs), the WDRs include directives for owners and operators of sanitary sewer systems to demonstrate adequate and efficient management, operation, and maintenance of the sanitary sewer system. The General Order serves as a statewide WDRs and supersedes the previous State Water Board Order No. 2006 0003-DWQ and amendments thereafter.

The County of San Diego (County) adopted its Sewer System Management Plan (SSMP) and prepared an SSMP audit in 2024. The SSMP document is consistent with the General Order and includes the following mandatory elements:

1. Goal and Introduction.
2. Organization.
3. Legal Authority.
4. Operations & Maintenance Program.
5. Design and Performance Provisions.
6. Spill Emergency Response Plan (SERP).
7. Sewer Pipe Blockage Control Program.
8. System Evaluation, Capacity Assurance, and Capital Improvements.
9. Monitoring, Measurement, and Program Modifications.
10. Internal Audits.
11. Communication Program.

1.2 Purpose

The General Order and resulting SSMP outline the requirements for periodic internal audits of the SSMP document at least once every three years after the adoption of the SSMP document. In compliance with the General Order, this document summarizes the County's effort in performing the required audit of its SSMP and is based on available information.

1.3 System Description

The County serves 35,281 residential customers and 2,556 commercial customers. In 2010, the District Board of Directors consolidated the five sanitation districts and four maintenance districts into a single agency that is now referred to as the County Sanitation District (District).

The eight service areas that make up the County Sanitation District are illustrated in Figure 1. The County administers the diverse and geographically separated communities. The service areas are geographically apportioned to facilitate the implementation of effective and efficient operations and maintenance (O&M) efforts. Table 1 includes a summary of the sewer service areas.

Table 1 San Diego County Sanitation District Service Areas

Sewer Service Areas	
Alpine	Campo
Lakeside	East Otay Mesa
Spring Valley	Winter Gardens
Julian	Pine Valley

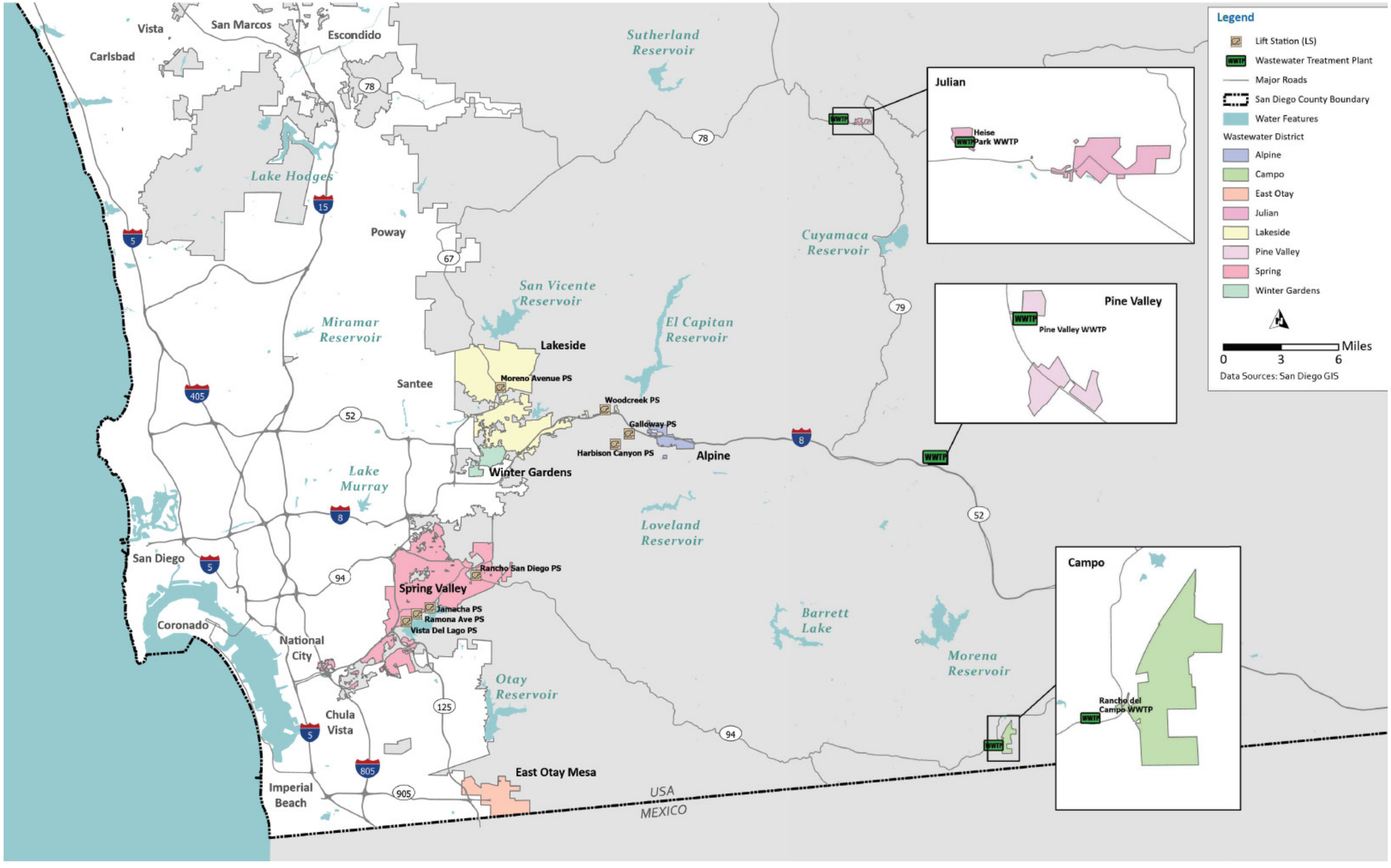

Figure 1 County of San Diego Sanitation District Service Areas

Collectively, the conveyance system includes approximately 432miles of pipeline, 8,200 maintenance holes, eight lift stations, and approximately six miles of force main. Table 2 provides a summary of the approximate length of the pipeline per service area while Table 3 provides a summary of the lift stations operated and maintained by County Wastewater Management Program staff.

Table 2 Pipeline Length by Service Area

County Service Area	Length of Pipeline(1) (linear feet)	Length of Pipeline (miles)
Alpine	114,453	21.2
Lakeside	542,043	102.7
Spring Valley	1,432,607	271.3
Pine Valley	2,726	0.5
Julian	14,996	2.8
Campo	35,993	6.8
East Otay Mesa	22,421	4.2
Winter Gardens	122,646	23.2
Total	**2,287,885**	**432.7**

Notes:
(1) Based on County Geographic Information System (GIS) System as of 12/2017.

Table 3 County-Maintained Lift Stations by Service Area

Service Area	Lift Station	Address	City/State/Zip
Spring Valley	Jamacha	9903 Jamacha Boulevard	Spring Valley, CA 91978
Spring Valley	Ramona Avenue	411 Ramona Avenue	Spring Valley, CA 91978
Spring Valley	Vista Del Lago	9041 Camino Lago Vista	Spring Valley, CA 91978
Spring Valley	Rancho San Diego	11971 Singer Lane	Spring Valley, CA 91978
Alpine	Galloway	444 Arnold Way	Alpine, CA 92001
Alpine	Harbison Canyon	215 Bridle Court	Alpine, CA 92001
Lakeside	Moreno Avenue	10955 Moreno Avenue	Lakeside, CA 92040
Lakeside	Woodcreek	15935 Spring Oak Road	El Cajon, CA 92021

Wastewater treatment is provided by either the City of San Diego's Metro system or one of several locally-based plants. Table 4 provides a summary of the treatment plants managed and operated by the County.

Table 4 County-Maintained Treatment Plants

Treatment Facility	Address	City/State/Zip
Rancho Del Campo WWTP	31035 Forrest Gate Road	Campo, CA 92006
Julian WWTP	2840 Highway 78	Julian, CA 92036
Pine Valley WWTP	Pine Valley County Park, Old Highway 80	Pine Valley, CA 91962

Notes:
WWTP - wastewater treatment plant

Since the certification of the SSMP and the consolidation of the County districts into one agency, the County has eliminated several of the waste discharge identification (WDID) numbers associated initially with various service areas, that were originally registered as separate sanitation systems and were less than the minimum 1.0 mile as required by the WDRs. Whereas previously, the County was registered for up to six WDIDs, it is now registered under three. The County's WDIDs and the respective service areas registered under each WDID are summarized in Table 5.

Table 5 County Service Areas and WDID Numbers

County Service Areas	WDID Number
County Collection System: ▪ Alpine Service Area. ▪ Lakeside Service Area. ▪ Spring Valley Service Area. ▪ Winter Gardens Maintenance District. ▪ East Otay Mesa Service Area.	9SSO10662
Campo Water & Sewer Service Area (Rancho Del Campo Collection System)	9SSO10689
Julian Service Area (Julian Water Pollution Facility)	9SSO10673

1.4 Goal

The County goal is to provide the safe, effective, and efficient operation of the County's wastewater collection and conveyance system, to minimize the potential for SSOs, and quickly and effectively mitigate the impacts associated with an SSO if it were to occur to protect life, environment, and property while adhering to regulatory requirements through:

- Proper management, O&M of all parts of the system.
- Employing procedures to reduce occurrences of, and potential for, SSOs.
- Implementing measures to minimize potential fats, oil, and grease (FOG)-related issues in the system.
- Providing adequate capacity to convey peak wastewater flows.
- Developing a long-range planning and improvement plan.
- Protection of the public's health and safety.
- Effective public information and education efforts.

Operations staff in the County's Wastewater Management Program are primarily responsible for confirming that the elements of the SSMP are implemented. Its mission statement is to:

- Preserve and enhance public safety and quality of life through reliable, cost-effective infrastructure.
- Foster partnerships that strengthen relationships with communities and industry.
- Provide quality and responsive service through highly motivated, professional, and knowledgeable staff in a safe and fair work environment.
- Continually improve quality of service through optimal resource management.

The County's goal continues to be to provide safe, effective, and efficient operation of the County's wastewater collection and conveyance system through:

- Proper management, operation, and maintenance of the wastewater collection system.
- Reduced occurrences of and potential for SSOs.
- An effective FOG control program.
- Assurance of adequate capacity to convey peak wastewater flows.
- A current long-range planning and improvement plan.
- Compliance with all regulatory requirements.
- Protection of the public's health and safety.
- Effective public information and education efforts.

The County's goal reflects the comprehensive efforts of County staff to be unified and effective stewards of their customers' assets by efficiently and economically operating, maintaining, and managing the County's wastewater collection system.

SECTION 2 ORGANIZATION

In compliance with the General Order, the County's organizational chart includes the administrative, maintenance, and management positions responsible for implementing, managing, and updating the overall measures contained in the SSMP. However, recent changes in the County's organization and order of governance required revisions to the County's overall organizational chart. Figure 2 and Figure 3 illustrates the most current organizational chart for the County and the Wastewater Management Program, respectively.

The SSMP contains organizational charts that illustrate the overall organization for the County. Also included is an organizational chart that includes the three primary sections in the Wastewater Management Program. The two sections include:

- Collections and Facilities Operation.
- Engineering and District Administration.

Figure 2, which is contained in Chapter 3 of the SSMP, illustrates the departments of the County, and has been updated to reflect the County's recent changes in department names. Figure 3 and Figure 4 were also updated to reflect the changes around responsibilities for the County staff. The chart includes the key staff positions that support the activities performed by the Wastewater Management Program.

The County's legally responsible official (LRO) and authorized representative registered with the State of California to officially sign and certify spill reports submitted via California Integrated Water Quality System (CIWQS) is the Land Use and Environmental Group (LUEG) Program Manager. In addition, the LRO is responsible for certifying the SSMP milestones. The County has designated the Director of Engineering Services Division of the Department of Public Works and the Deputy Director of Engineering Services Division of the Department of Public Works as data submitters.

Figure 2 County of San Diego Overall Organization Chart

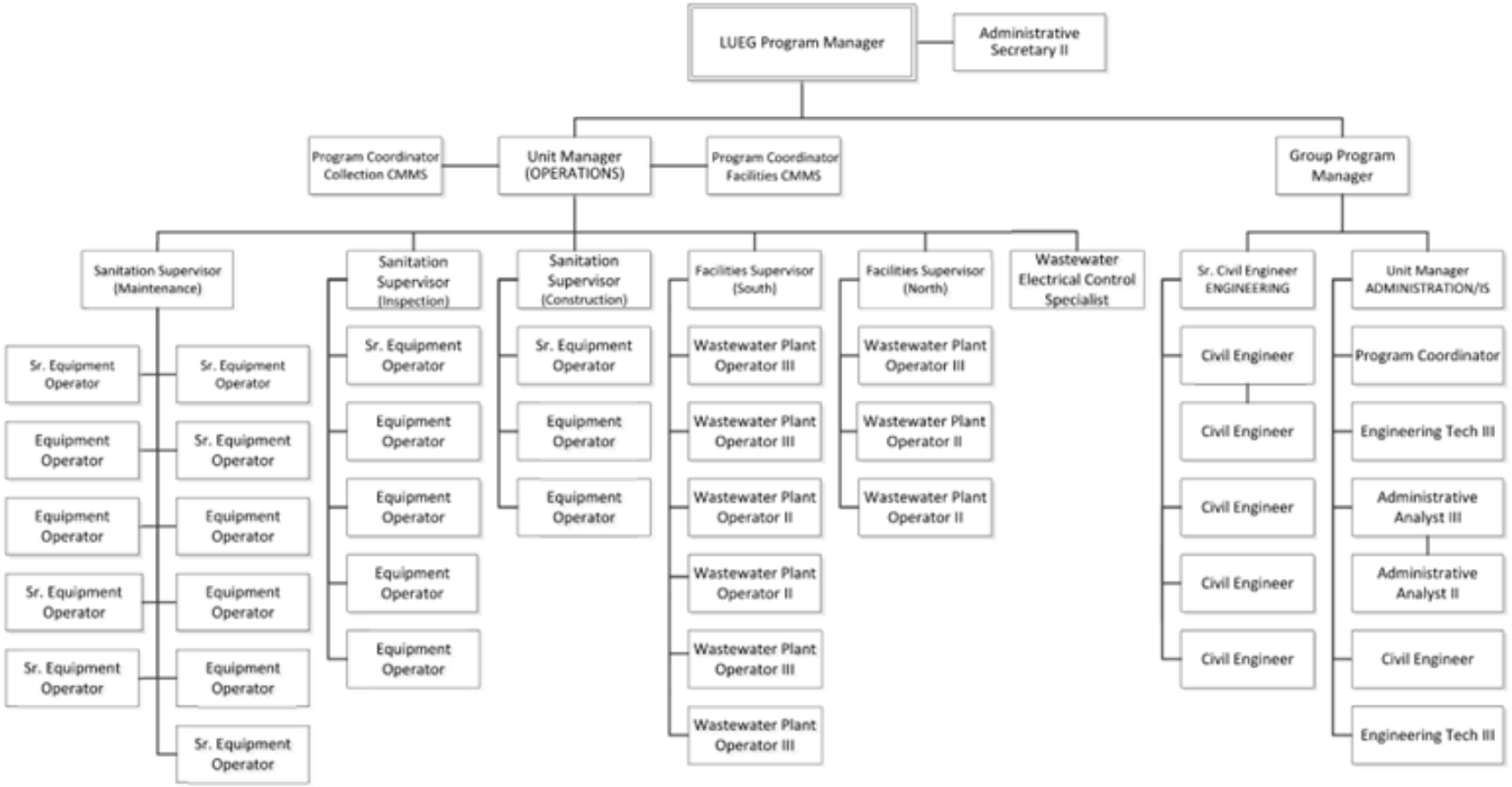

Figure 3 Wastewater Management Organization Chart

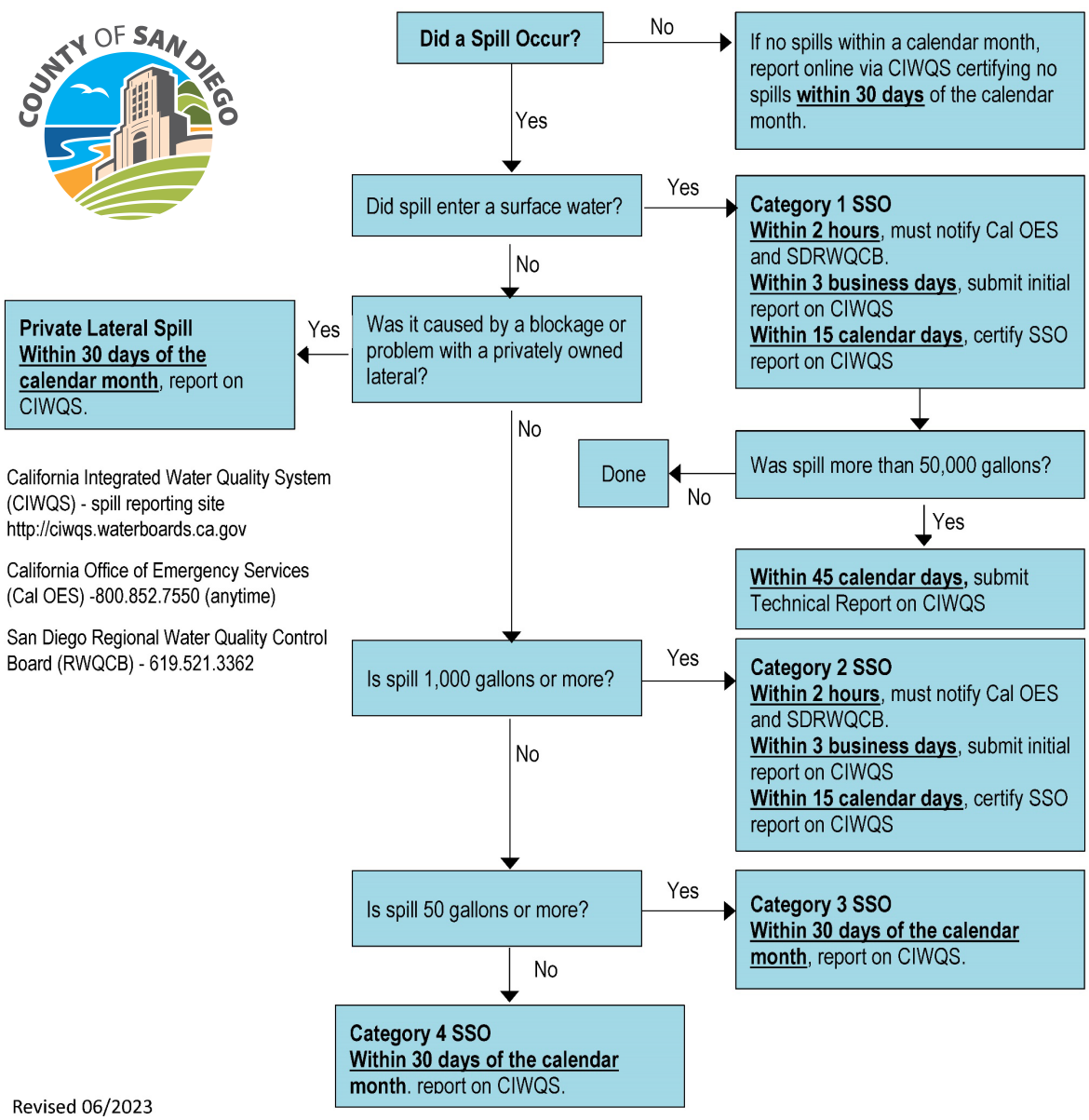

Figure 4 Communication Plan and SSMP Responsibilities

SECTION 3 LEGAL AUTHORITY

The General Order requires that the County show, through ordinances, service agreements, or other legally binding procedures, that it possesses the legal authority to:

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

The County's legal authority and powers pertaining to the County's wastewater collection system are included in the County of San Diego Code of Regulatory Ordinances (County Code). Generally, the County requires compliance with several sections of the County Code, including Title 1, General Regulations, Title 6, Health and Sanitation, and Title 9, Construction Codes and Fire Code.

The County also requires compliance with the latest approved edition of the Standard Specifications for Public Works Construction (Greenbook), Regional Supplemental Amendments to the Standard Specifications for Public Works, and the latest edition of the San Diego Regional Standard Drawings. Collectively, the documents serve to facilitate the control of I&I; require proper design, construction, installation, testing, and inspection of new and rehabilitated sewers and laterals; enforce violation of ordinances, and promote and protect the health, safety, and general welfare of the citizens of the County.

Since the County's SSMP document was certified, the County Codes remain current and applicable. The following briefly summarizes the County Codes as they apply to the wastewater collection system.

3.1 Prevention of Illicit Discharges

The following sections in Division 8 of Title 6 of the County Code establish the County's authority to prohibit illicit discharges into the County's wastewater collection system.

- Section 68.162, Limitations on Use of Sewer.
- Section 68.163, Opening Maintenance Hole.
- Section 68.209, Throwing Refuse in Maintenance Holes Prohibited.

3.2 Proper Connections and Construction

The following includes a summary of the sections of the County Code that establishes the County's authority to require and confirm that wastewater facilities are properly designed and constructed.

3.2.1 Title 6, Division 8 - Sewage and Refuse Disposal

- Section 68.145, Sewers in County Highway.
- Section 68.146, Sewers in State Highway.
- Section 68.147, Main Line Sewers.
- Section 68.159, Work and Plans Shall Conform.
- Section 68.161, Connecting Sewer in Undedicated Street.
- Section 68.204, Persons Authorized to Make Sewer Service Lateral Connections-Fees.

3.2.2 Title 9, Division 4 - San Diego County Plumbing Code

The County Plumbing Code is included in the County Code, Title 9, and Division 4. The County Code adopts Title 24, Part 5 of the California Plumbing Code of Regulations which incorporates, by adoption, the 2006 edition of the Uniform Plumbing Code with California Amendments, and the 2007 California Plumbing Code portion of the California Building Standards Code with the County's modifications, additions, and deletions. The County Plumbing Code is applicable to the unincorporated areas of the County.

Section 94.1.1004, Adoption of the Appendices A, B, D, G, and I of the California Plumbing Code, adopts the listed appendices in their entirety as part of the County Plumbing Code.

Chapter 1 of Division 4 includes definitions, requirements for permits and inspection for installing or altering systems, regulations for the erection, construction, enlargement, alteration, repair, moving, removal, conversion, demolition, equipment use, and maintenance of buildings and structures, including their inspection and provides penalties for violation of this chapter. This chapter applies to all new construction and any alterations, repairs, or reconstruction, except as otherwise provided for in this chapter.

The codes are specific for wastewater facilities and provide the County the authority to require, review, and approve design and construction plans for facilities discharging flows into the County's wastewater collection system. The County's authority also includes reviewing design and construction plans for main line sewers or sewer service laterals within a street, highway, alley, or right of way not dedicated or granted to a sanitation or maintenance district within which the line or lateral is to be located.

3.3 Accessibility for Maintenance, Inspection, and Repair

The County Code includes access requirements specific for sewage pumping and treatment plants and for the inspection of construction work performed. The access requirements for maintenance and repairs of the wastewater collection system are managed through the plan review and permitting procedures for new sewer service where County staff confirms that sewer system facilities are constructed to specific standards within the public right-of-way or within easements.

The following sections include a summary of the County's existing codes and ordinances included in Title 6, Division 8 as they apply to facility access for maintenance, inspection or repairs.

- Section 68.156, Inspection by Director, in Article 5 of Chapter 1.

- Section 68.158, Maintenance Instructions, in Article 5 of Chapter 1.
- Section 68.206, Inspections of Sewer Connections.

The code implies that the County may have accessibility rights in that it requires the Director of Public Works to issue a permit before a sewer line may be constructed and connected. As such, the Director of Public Works has the opportunity to confirm that County staff can access new sewer lines. Typically, County staff reviews access and easement requirements during the plan review process for new sewer facilities.

3.4 Limit Fats, Oil, and Grease Discharge

The County's concentrated effort for addressing FOG related issues has been its proactive preventive maintenance program. The routine inspections performed of food service establishments by the Department of Environmental Health (DEH) have afforded the County an opportunity to reiterate the importance of limiting FOG discharge into the County's wastewater collection system and reduce the potential of SSOs due to excessive FOG. Practical Best Management Practices continue to be included in the permit conditions as a method to enforce the County's efforts.

3.5 Violation Enforcement

Title 1, Division 1, titled General Provisions, Division 6, titled Appeals and Nuisance Abatement, and Division 8, titled Administrative Remedies include provisions, policies, and procedures for implementing and enforcing violations of the County Code. Additionally, Title 6, Division 8, titled Health and Sanitation allows the County to revoke permits issued. Additionally, the County DEH enforces the Health and Safety Code sections pertaining to Retail Food activities, collectively known as California Code.

The following are the specific sections of the County Code that establish the County's authority to enforce violations of the County's codes as they pertain to the wastewater collection system:

- **Title 1, Division 1 - General Provisions:**
  - Section 11.111, Public Nuisance.
  - Section 11.116, Violations-Criminal Penalties.
  - Section 11.121, Violations - Criminal, Civil, and Administrative Remedies.
- **Title 1, Division 6 - Appeals and Nuisance Abatement:**
  - Chapter 2, Section 16.202.5, Administrative Procedures.
- **Title 1, Division 8 - Administrative Remedies:**
  - Chapter 1, Administrative Citations, Section 18.104, Administrative Citations.
  - Chapter 1, Administrative Citations, Section 18.106, Amount of Fines.
  - Chapter 2, Administrative Civil Penalties, Section 18.201, Authorization and Purpose.
  - Chapter 2, Administrative Civil Penalties, Section 18.203, Civil Penalties.
- **Title 6, Division 8 - Sewage and Refuse Disposal:**
  - Chapter 2, Connections to Sewers, Section 68.211, Revocation of Permits and Disconnection of Facilities.

3.6 Storm Drain System Coordination

The County manages and operates most of the stormwater infrastructure within their service area. Thus, communication and coordination are interdepartmental. The County's Waste Management and Watershed Protection programs meet quarterly to find opportunities to collaborate that include but are not limited to spill containment and best practices for preventing spills from entering stormwater collection systems and bodies of water.

If a spill occurs outside of the County's stormwater collection system service area, then the County may have to communicate and coordinate with the City of San Diego, City of Chula Vista, City of National City, City of El Cajon, and City of Santee.

SECTION 4 OPERATIONS AND MAINTENANCE

The County's O&M Program includes a current summary of the County's procedures and practices as they pertain to the O&M of the sanitary sewer system. The following provides a summary of the County's current O&M procedures as they apply to the program components.

4.1 Sanitary Sewer System Mapping

The County continues to incorporate as-built information into its GIS and develop formal standard operating procedures for updating GIS information, as well as its effort to develop an asset mapping tool to facilitate viewing wastewater facility-related data. The intranet-based viewer is intended to be specific to the County's wastewater collection system and allow County staff to view newly revised data and associated as-built drawings and perform data queries. The County has a dedicated staff member to manage their GIS since certification of their SSMP. The dedicated staff member's job title is Program Coordinator and falls under the Department of Public Works.

Additionally, the County implemented an asset mapping tool called Computerized Maintenance Management System (CMMS) to facilitate viewing wastewater facility-related data. The County's intranet-based viewer is specific to the County's wastewater collection system and allows County staff to view newly revised data, associated as-built drawings, and perform data queries. The County has completed the integration of their CityWorks Software Program integration.

The County needs to incorporate procedures for maintaining and providing the State Water Board and Regional Water Board staff access to the maps.

4.2 Preventive Maintenance Program

The County's Preventive Maintenance Program primarily includes scheduled maintenance of the wastewater facilities, including sewer pump stations and wet wells, routine cleaning and root treatment of the wastewater collection system pipelines, and maintenance hole treatment.

4.2.1 Mechanical Cleaning

The County Collections Engineering and Facilities Operations staff conduct the routine cleaning of the County's wastewater collection facilities, one sanitary sewer service area at a time in the direction of flow

to convergence locations. The collection system is separated into 18 inches pipelines and smaller that are cleaned annually, while pipelines greater than 18 inches are cleaned as needed. The County mechanically cleaned 0.4 miles and 1.8 miles of sewer in years 2022 and 2023, respectively. Additionally, crews clean high-frequency maintenance locations (High Frequency Sites) quarterly. These locations include several of the County's pipelines with areas identified as having excessive grease and root concentrations.

The County revised its rodding sheets, used to document cleaning efforts, to allow for the documentation and collection of more comprehensive information pertaining to the cleaning efforts. Additional data collected includes:

- Water loads used per basin.
- Length of pipe cleaned.
- Number of passes necessary for proper cleaning.
- Preliminary assessment of upstream and downstream maintenance holes.
- Accessibility issues.
- Type of debris removed (roots, grease, silt).
- Amount of debris removed (light, moderate, heavy).
- Identification of potential defects/deficiencies.

Since implementing the revised rodding sheets, County staff has identified additional areas requiring specific maintenance needs. The County is updating the list of Special Maintenance Sites as the maintenance efforts capture more comprehensive system conditions.

As the County is committed to maintaining its inspection efforts and achieving its inspection goals, as necessary, the County exercises its authority to retain the services of outside resources to provide support in achieving its objectives. To date, the County is on track to achieve its yearly goal of cleaning the entire small-diameter wastewater collection system.

4.2.2 Root Treatment

The County's sewer maintenance crews primarily use jet-rodder/vactor and/or continuous rodder vehicles in areas with high root concentrations. The County's root control program assessed the need to incorporate chemical root treatment into its maintenance program. The need and frequency of the root treatment will be determined based on information captured during ongoing monitoring and televising of the system. The County has identified several specific areas of the system (Spring Valley) in which the program is currently being implemented for further evaluation. The County completed 0.0 miles and 0.14 miles of root treatment during 2022 and 2023, respectively.

4.2.3 Installation and Use of SmartCover Monitoring System

The County currently has 70 SmartCovers in place. This is a net gain of 27 SmartCovers since 2022. The purpose of SmartCovers is to reduce the risk of a spill by alerting the County of rising flow trends within the maintenance hole. SmartCovers is a device that has an antenna attached to the maintenance hole cover and a sensor that monitors the height of the sewage flow at the maintenance hole invert. The flow information is transmitted wirelessly to mobile phone applications and desktop computers. The information transmits flow trends, alerts, and alarms. The SmartCovers are placed strategically within the

system at remote environmentally vulnerable locations, known spill locations, and Special Maintenance lines.

4.3 Training Program

Operations staff is routinely trained on the provisions of wastewater O&M policies, procedures safety policies, and the equipment used. Instructional materials have included training on the County's SSMP and SERP. Training on the operation of County equipment includes "on-the-job" training in conjunction with bi-weekly "tailgate" meetings to discuss safety issues and operating procedures. All training is documented, including subject matter, duration, and attendance.

- Training programs available include:
- Training on 11 Safety Related Director Letters of Instruction.
- Trenching/shoring.
- Confined space.
- First aid/cardiopulmonary resuscitation.
- Heat illness prevention.
- Traffic control and flagger.
- Chain saw.
- Forklift.
- Omnibus Transportation Act.
- Backhoe operator.
- Fire extinguisher.
- Stormwater pollution prevention.
- Chlorine safety.
- Fall protection.
- Wildfire smoke protection.

Currently, all Equipment Operators are required to obtain a Class A driver's license. Although not required for all staff, the County encourages its wastewater maintenance staff to obtain various certifications including, but not limited to, the plant maintenance certification and the Department of Health Services Water Distribution certification. Several maintenance staff are Pipeline Assessment and Certification Program (PACP) certified to perform closed-circuit television (CCTV) inspection and assessment. As necessary and determined appropriate, training programs may include supplemental technical training.

4.4 Equipment and Replacement Part Inventories

The County maintains an updated inventory list of vehicles and replacement parts available. Maintenance vehicles and sanitary sewer system replacement parts are readily available in the Spring Valley Operations Yard and are accessible to operations staff. Sufficient supplies are maintained to allow for prompt responses to various types of routine and emergency conditions that may occur. Staff may purchase equipment from approved vendors using an assigned Purchase Card or "P-Card."

As necessary, maintenance staff solicits the utilization of resources, including equipment and staff. For implementation of repairs that extend beyond the County's internal resource capabilities, the County retains the services of professional contractors.

SECTION 5 DESIGN AND PERFORMANCE PROVISIONS

The County requires all projects that include the design and construction of new, rehabilitated, and replacement sewer system facilities within the County or under contract to the County to be constructed in accordance with Title 6 of the County Code.

Section 68.159 of the County Code codifies the County's current design and performance criteria and requires that all work be performed and that all plans and specifications conform to the requirements prescribed by the San Diego Regional Standard Drawings and the Greenbook. Additionally, compliance with the Regional Supplemental Amendments to the Greenbook and the County Standards for Sewer Construction is required.

For facilities that the County considered non-standard, such as treatment plants, pump or lift stations, force mains, internal sealing of existing sewers, outfall sewers, energy dissipaters, regulating devices, and/or flow measurement devices, and not included in the County Standards for Sewer Construction, the County requires approval prior to commencing design and final acceptance.

For compliance with the inspection and testing of wastewater facilities, the County requires that all mainline sewers, service laterals, and structures be tested in the presence of a County inspector and in accordance with Section 306-1.4.4 and Mandrel Test per Section 306-1.2.12 of the Greenbook. The Greenbook includes procedures and standards for inspecting and testing the installation of sewer mains and related appurtenances and for the rehabilitation and repair of existing sanitary sewer systems. As well, it includes inspection and testing criteria for various pipe materials and installation methods.
Section 500-1.2.6 requires the Engineer to review the pipeline inspection video submitted by the Contractor to verify the pipeline point repair or replacement installation of wastewater pipelines and maintenance holes are constructed to County satisfaction prior to backfilling.

Generally, the provisions noted in the County's design and construction standards are sufficient and continue to address the required components of the WDRs.

SECTION 6 SPILL EMERGENCY RESPONSE PLAN

Spills may occur as a result of blocked sewer pipelines, pipeline failures, mechanical malfunctions, and other natural or man-made causes. Therefore, it is imperative that formal response procedures be established to confirm that County crews respond appropriately and efficiently to a spill to minimize the effects of a spill on the environment while protecting the public's health and safety.

The County last updated its SERP in 2023 to comply with the regulatory requirements laid out in the General Order. The County will need to add their updated SERP to the soon-to-be-updated SSMP. The County intends for the SERP to supplement the County's existing emergency plans and standard operating procedures and facilitate coordination and mobilization of necessary equipment and personnel

in an organized and efficient manner. The SERP includes the necessary guidelines for County staff to respond to a spill occurrence and contains the following elements:

- Introduction and Regulatory Requirements.
- Spill Emergency Response Procedures.
- Public Advisory of Sewage Contamination Procedures.
- SSO Monitoring and Reporting Requirements.
- Training Requirements.
- SERP Updating Requirements.
- Various Attachments.

The County's SERP includes response priorities, safety, and overflow containment, correction, and clean-up measures for actual spills of various types. Figure 2.1 of the SERP offers a current and concise overview of the steps required to be implemented by County staff to respond to an actual or possible spill event quickly. It summarizes the spill response procedures and illustrates the County's emergency response procedures, including notification and request of additional resources as required in the event of a large SSO.

County staff incorporated the modified forms and contact information into the SERP to confirm that the document is maintained, updated, and reflects the most current information including the most current monitoring and reporting requirements.

The County has since developed and incorporated into its SERP a right of entry form that will allow County staff the right of access and entry onto properties within the County's jurisdiction for the purpose of evaluating, removing, and/or clearing debris and performing appropriate remediation efforts in the event of a spill occurrence.

In compliance with the General Order, the County conducts an annual review of the SERP to confirm all provisions of the plan are being met and implemented and has determined that the established procedures for responding to possible and confirmed spills originating from the County's wastewater collection system as included in the SERP are current.

SECTION 7 PIPE BLOCKAGE CONTROL PROGRAM

The County continues its commitment to minimizing the quantity and/or effects of FOG discharged into the wastewater collection system. The FOG Characterization Study prepared in conjunction with the County's SSMP served to:

- Compile and categorize FOG-related information.
- Identify and locate potential FOG sources.
- Identify high frequency maintenance locations due to FOG.
- Identify areas potentially susceptible to excessive FOG accumulation.
- Identify and locate areas within the wastewater collection system in which SSOs have occurred due to excessive FOG.

Information compiled, reviewed, and evaluated included a comprehensive list of businesses permitted by the County DEH, Special Maintenance Sites per service area, and historical spill records reported to the San Diego Regional Water Quality Control Board (RWQCB/Regional Water Board).

7.1 High Frequency Sites

There are currently 202 pipe segments identified by County wastewater maintenance staff as Special Maintenance Sites and located in the service areas as shown in Table 6. This is a reduction in the number of segments of 226 since the previous audit. The reduction in segment totals is due to condition review and updating of all segments previously designated as high frequency/special maintenance sites. The high-frequency sites are tracked by the County through its CityWorks application.

Table 6 Location of High-Frequency Sites

Service Area	Number of Special Maintenance Areas
Alpine	12
Lakeside	45
Spring Valley	137
Pine Valley	0
Julian	0
Campo	0
East Otay Mesa	0
Winter Gardens	8

Currently there are no Special Maintenance Sites identified within the Julian, Pine Valley, Campo, or East Otay Mesa service areas. It is recommended that this section be moved to the Preventive Maintenance Section during the County's next SSMP update.

7.2 Historical Sanitary Sewer Overflow Records

Records reviewed included historical records obtained from the San Diego RWQCB website that included spills reported by the County and included SSO occurrences at private laterals. Where the location of an SSO occurrence was not noted, a review of the County's Maintenance Action Report, which includes a summary of the emergency calls received, was reviewed to determine the types of calls received.

7.3 Findings

The FOG Characterization study revealed that the majority of the SSO occurrences were primarily due to debris accumulation in the pipelines. Overall, the data indicated that SSOs were not associated with food service establishments but were due to residential discharge of FOG into the system. Based on the findings, only one SSO that has occurred between 2014 through 2023 was reported as having been caused due to excessive FOG in the wastewater collection system. The number of FOG-related SSOs is down by one when compared to the previous audit. Therefore, the County's proactive preventive maintenance program and the routine cleaning of its Special Maintenance Sites were sufficient for addressing FOG related conditions in the wastewater collection system.

For the purposes of the audit, CIWQS records were obtained from the SWRCB database and reviewed to assess the reported cause of SSO. Table 7 provides a summary of the reported causes of SSOs based on the review of the CIWQS information, which included data from 2014 through 2023.

Table 7 Reported Cause of SSO

Reported Cause(1)	Number of SSOs(1)	Percentage
Debris	12	17%
Roots	35	51%
Grease	1(2)	1%
Defect	4	6%
Vandalism	2	3%
Other	15	22%
Total	69	

Notes:
(1) Based on CIWQS data for WDIDs 9SSO10662, 9SSO10689, and 9SSO10673.
(2) Spill Event ID: 808706, 8/25/2014.

SECTION 8 SYSTEM EVALUATION, CAPACITY ASSURANCE, AND CAPITAL IMPROVEMENTS

The General Order requires the County to include procedures and activities to routinely evaluate and assess the system conditions, complete a capacity assessment, prioritize corrective actions, and a capital improvement plan (CIP).

8.1 System Inspection and Condition Assessment Program

Regular and systematic inspection and assessment of sanitary sewer system facilities provides a means to monitor the condition of the facilities and the effectiveness of the maintenance operations and provides a basis for identifying and scheduling capital improvements. As well, the overall assessment can also be used to determine the funding required to repair, rehabilitate, and replace an aging collection system to prioritize the allocation of funds and optimize the expenditure and efforts to operate a sewer collection system. The County inspected 6.4 miles and 14.4 miles of sewer during 2022 and 2023, respectively. The County inspected 7,312 maintenance holes and 4,030 maintenance holes manholes during 2022 and 2023, respectively. The County and outside contractors carried out the inspections.

8.1.1 System Inspection and Assessment

The County conducts regular inspections and assessments of the wastewater system pipelines using CCTV technology. The County's CCTV vehicles are equipped with GraniteNet developed by Cues. The inspection codes incorporated into the Granite Software are certified by the National Association of Sewer Service Companies and comply with the PACP.

The inspections are performed after all new and rehabilitated pipelines to identify potential defects, determine the effectiveness of the cleaning efforts, and confirm contractor compliance with County

design and construction standards. Progress of CCTV inspection efforts is documented by staff and utilized for tracking and reporting purposes. As the necessity to televise a particular location or portion of the wastewater collection system arises, staff is assigned to accommodate the request.

Generally, condition assessment of the sewer pipelines is performed in the field during the CCTV inspection process by the County field crews performing the inspections. Defects detected are recorded on the system's hard drive to document the defect(s) and potential problem(s) requiring repair and to identify the necessary repair method. Permanent records of the detected defects are produced by capturing images of the information on the CCTV screen and recording the images on the local drive that is maintained at the Spring Valley Operations Yard.

Since the last audit, the County completed their multi-year program to televise and assess the entire collection system.

8.2 Capacity Assessment and Design Criteria

The County completed capacity assessments of their wastewater collection system through wastewater master plans. The following lists the latest wastewater master plans that the County completed:

- Alpine and Lakeside Sewer Service Area Sewer Master Plan, January 2013.
- Spring Valley Service Area Sewer Master Plan, January 2013.
- Winter Gardens, Julian, Campo, and Pine Valley Area Sewer Master Plan, January 2013.

The master plans include an evaluation of the hydraulic capacity of the major sewer pipelines, sewer lift stations, and force mains. A capacity analysis of the existing collection system for each service area was performed under existing and build-out peak dry weather flow and peak wet weather flow conditions. Model simulations were performed for the 2030 planning horizon to identify potential improvement projects.

In the service areas where the recommended capacity improvement project were identified, the pipeline improvement projects were sized to accommodate the projected build-out flows based on land use. Projects were then evaluated under the existing 2030 planning horizon to identify project priority and phasing. Lift stations and force mains were also evaluated under existing and projected wastewater flows based on the County criteria. The stations were evaluated for operational, storage, condition, and sizing requirements. A master plan update has not been prepared for the East Mesa sewer service area since 2006. The County plans to perform an update to the master plans in 2025.

8.2.1 Capacity Analysis

A capacity analysis of the existing collection system, including lift stations, force mains, and siphons, was performed under existing and forecasted dry and wet weather flow conditions based on evaluation criteria.

The principal tool utilized in the capacity analysis was a steady-state hydraulic analysis spreadsheet using the Manning formula to evaluate flow conditions such as flow depth, flow rate, and velocity within pipes and maintenance holes in the collection system. The model was utilized to evaluate the existing collection system under existing and projected wet weather flow conditions to identify potential recommended improvements to the existing collection system.

Model simulations were performed for the recommended 2030 wastewater generation to identify potential improvement projects. The identified improvement projects were then sized to accommodate the buildout flow projections based on the land use. Projects were then evaluated under the existing and recommended 2020 wastewater generation to identify project priority and phasing.

8.3 Capital Improvement Program Project Identification

Projects included in the Major Maintenance Program primarily originate based on the assessment of the CCTV inspections conducted by County staff and outside contractors, while CIP projects are identified based on capacity modeling results, condition assessment, and other necessary projects identified during their latest wastewater master plans.

The County recognizes that close coordination between the Major Maintenance Project Program and CIP is essential to avoid planning, scheduling, and budgeting the same projects in both programs. The County's Communication Structure facilitates and promotes collaboration between the various sections of the Wastewater Management Program to identify and prioritize pipeline replacement and rehabilitation projects to address critical issues. Additionally, projects in each program may be coordinated and/or combined to result in overall cost savings.

The County has updated several master plans for all its service areas and developed a rolling 10-year CIP list of projects. The master plans include a summary of the projected costs and dates for the start and end of construction. The CIP, Major Maintenance Project Program, and wastewater maintenance staff review the list every two years to coordinate and include newly identified projects, revise the priorities, and update estimated costs based on updated information. This serves to ensure that the necessary projects will be completed in a timely and efficient manner thereby reducing the potential occurrence of an SSO.

Since 2021, the County has completed the following projects:

- Spring Valley Sewer System (Spring Valley Outfall Meter/Diversion Abandonment Project).
- Los Coches Sewer Improvements (LSMH0555-LSMH0599).
- La Presa 14-inch Sewer Improvements.
- Countywide Sewer Improvements.
- Point Repairs by Cast in Place Sectional Liner and Tophat.

Projects not included in the program or postponed are maintained on the appropriate maintenance schedule and tracked as potential future projects. Projects that are included in the program and completed are eventually removed from the tracking list and information pertaining to the management and maintenance of the assets are updated. The following projects are currently under design or ready for construction:

- Pine Valley WWTP Lagoon Dredging (currently in construction).
- Countywide Maintenance Hole Rehab FY2019-20 (Ready to advertise for bids).
- Spring Valley Outfall Sewer Improvements from SVMH3648 to SVMH3649 (ready to advertise for bid).
- San Diego River Basin Sewer Rehab Phase 1 (Ready to advertise for bids).
- Lakeside Large Diameter Sewer Improvements.
- Lakeside Small Diameter Sewer Improvements.
- La Presa Sewer Phase 1 - Jamacha Force Main.

SECTION 9 MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

The General Order requires the County to develop and implement a monitoring program to assess the effectiveness of the SSMP elements, assess the success of the O&M Program, and identify and illustrate spill trends. The following is a summary of the information County staff regularly track and monitor to measure and assess the effectiveness of O&M efforts and identify and prioritize essential related activities to support the more efficient and effective management of the wastewater collection system.

9.1 Operations and Maintenance Program Progress

The County continues to regularly document, manage, and maintain information pertaining to the wastewater infrastructure by means of manually recording preventive maintenance activities and documenting notifications received regarding potential and actual spill occurrences. The County regularly tracks performance measures through activity logs, which include, but are not limited to, the length of pipe cleaned, the quantity and type of debris removed from the cleaning effort, the cause and location of system obstructions and spills, and the scheduled maintenance of high-frequency maintenance locations. Table 8 and Table 9 includes a summary of the monthly progress recorded by County crews in the cleaning of gravity mains of the wastewater collection system for years 2022 and 2023, respectively.

Table 8 Summary of Monthly Cleaning Progress for 2022

Month	Monthly Cleaning Totals (feet)	Monthly Cleaning Totals (miles)(1)	Percent Completed (Goal Versus Actual)(2)
January	141,874	26.9	83%
February	136,541	25.9	80%
March	131,947	25.0	77%
April	126,984	24.1	74%
May	152,064	28.8	89%
June	148,843	28.2	87%
July	131,789	25.0	77%
August	126,826	24.0	74%
September	134,693	25.5	78%
October	133,003	25.2	78%
November	97,258	18.4	57%
December	121,070	22.9	71%
Total	1,582,892	299.8	77%

Notes:
(1) Data includes 19.6 miles of Special Maintenance.
(2) Monthly cleaning goal of 32.5 miles, which is based on a total projected goal of 390 miles.

Table 9 Summary of Monthly Cleaning Progress for 2023

Month	Monthly Cleaning Totals (feet)	Monthly Cleaning Totals (miles)(1)	Percent Completed (Goal Versus Actual)(2)
January	86,117	16.3	135%
February	76,296	14.5	119%
March	80,203	15.2	126%
April	103,224	19.6	162%
May	76,085	14.4	119%
June	76,824	14.6	120%
July	81,418	15.4	127%
August	70,013	13.3	110%
September	72,917	13.8	114%
October	59,506	11.3	93%
November	27,773	5.3	43%
December	64,838	12.3	101%
Total	875,214	165.8	114%

Notes:
(1) Data includes 24.8 miles of Special Maintenance.
(2) Monthly cleaning goal of 12.1 miles, which is based on a total projected goal of 145.2 miles.

County crews also regularly document the progress of CCTV inspections and assessments. Table 10 and Table 11 includes a summary of the monthly progress recorded by County crews of the CCTV inspections and assessments performed of the wastewater collection system during 2022 and 2023, respectively. Based on the data, County crews fell short of their goal of inspecting approximately 20 miles of the pipelines yearly by 70 percent and 36 percent in the years 2022 and 2023, respectively.

Table 10 Summary of Monthly CCTV Progress During 2022

Month	Monthly CCTV Totals (feet)	Monthly CCTV Totals (miles)	Percent Completed (Goal Versus Actual)(1)	Manhole Inspections(2)
January	1,003	0.2	11%	4
February	739	0.1	8%	2
March	264	0.1	3%	22
April	528	0.1	6%	2
May	2,112	0.4	24%	3
June	898	0.2	10%	6
July	5,016	1.0	57%	31
August	5,174	1.0	59%	34
September	3,485	0.7	40%	31
October	2,376	0.5	27%	14
November	3,379	0.6	38%	18
December	6,336	1.2	72%	37
Total	31,310	5.9	30%	204

Notes:
(1) Based on an annual goal of inspecting 1.67 miles of pipelines a month.
(2) Manhole inspections are only for inspections during CCTV operations.

Table 11 Summary of Monthly CCTV Progress During 2023

Month	Monthly CCTV Totals (feet)	Monthly CCTV Totals (miles)	Percent Completed (Goal Versus Actual)(1)	Manhole Inspections(2)
January	8,976	1.7	102%	41
February	8,501	1.6	96%	51
March	6,019	1.1	68%	36
April	4,224	0.8	48%	32
May	7,973	1.5	90%	60
June	5,174	1.0	59%	32
July	2,851	0.5	32%	18
August	7,022	1.3	80%	36
September	6,864	1.3	78%	34
October	4,277	0.8	49%	31
November	1,531	0.3	17%	10
December	4,805	0.9	54%	30
Total	68,217	12.9	64%	411

Notes:
(1) Based on an annual goal of inspecting 1.67 miles of pipelines a month.
(2) Manhole inspections are only for inspections during CCTV operations.

9.2 Spill Trends and Cause

To identify and illustrate spill trends within the County service areas, including frequency, location, and volume, information was retrieved from the CIWQS database for review and evaluation. The following illustrations are based on the findings from the CIWQS information.

Figure 5 illustrates the number of system overflows reported yearly since 2014 through the most recent reporting period in 2023. Overall, a total of 68 spills have been reported since 2014 along the County's main lines.

Figure 6 illustrates the reported causes of the reported spills. Based on the information reported, the primary cause of the spills has been due to heavy root concentrations. One spill was reported to be caused by grease-related issues, while the remaining causes included debris, structural defects, vandalism, and other related issues.

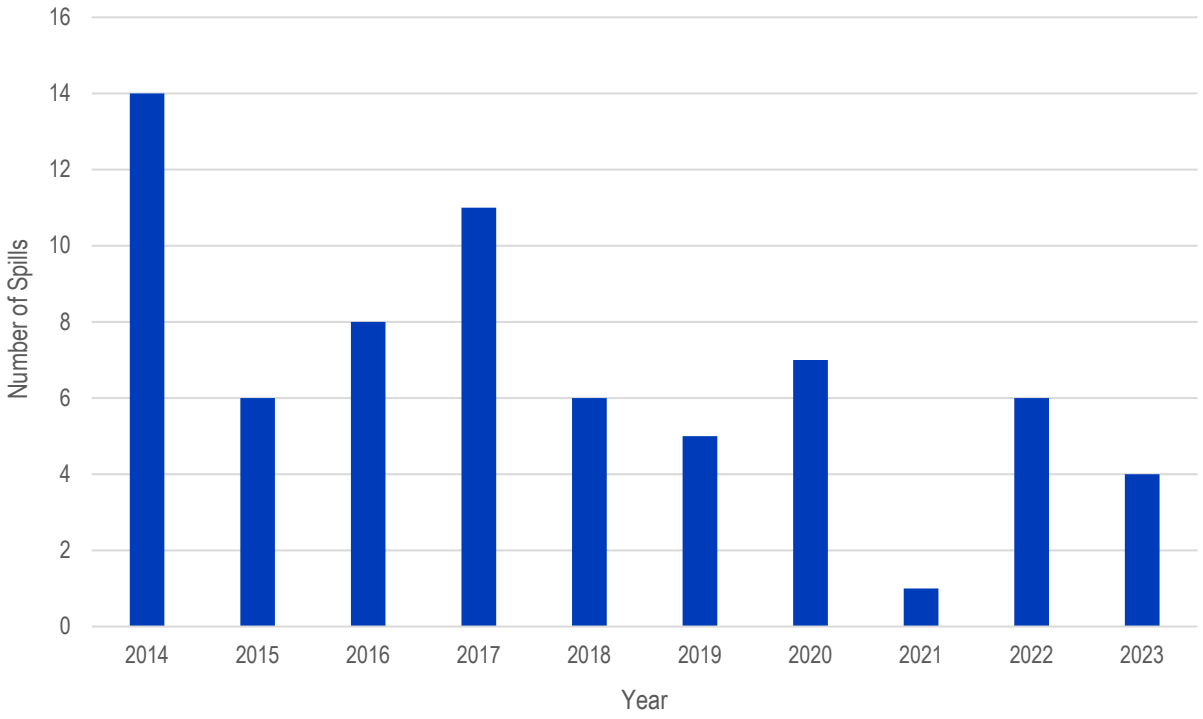

Figure 5 Sewer System Overflows

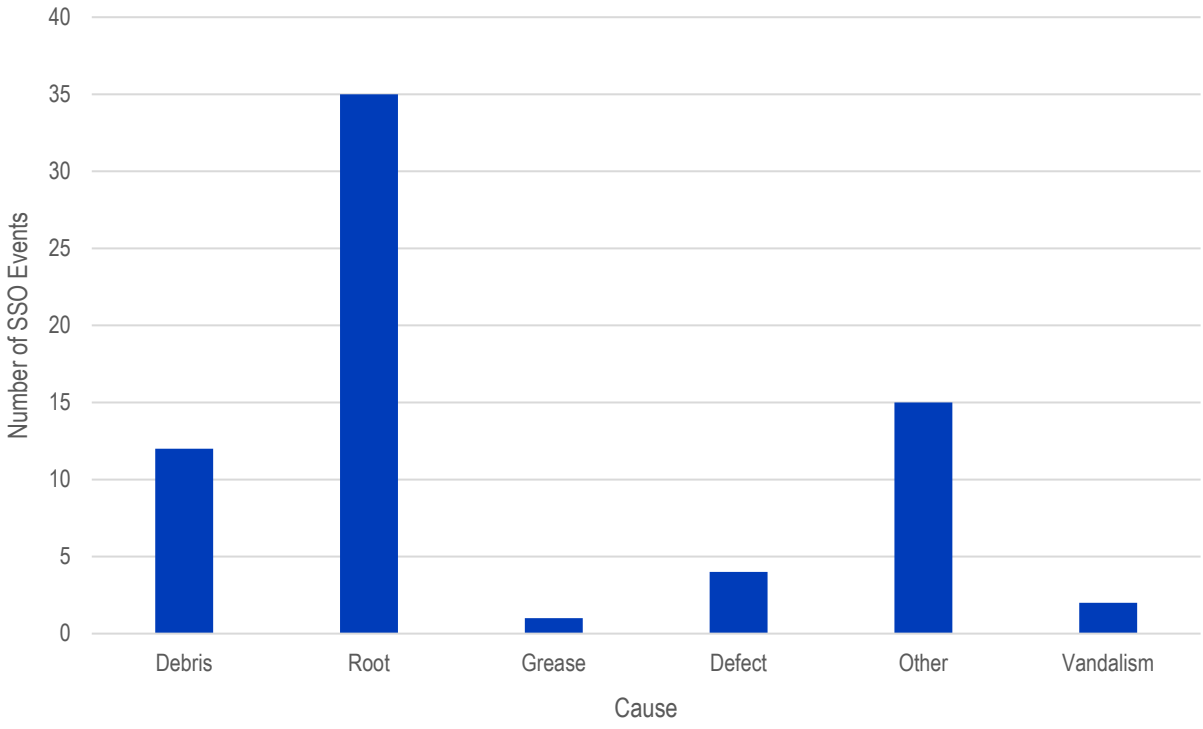

Figure 6 Reported Causes of Spills

Table 12 is a summary of the service areas in which the SSOs were reported and the frequency of SSO occurrences in each of the sewer service areas. The SSOs have primarily occurred in three (Alpine, Spring Valley, and Lakeside) of the eight County service areas.

Table 12 Service Areas With Reported Spills

Year	Spring Valley(1,2)	Alpine(1,2)	Lakeside(1,2)	Winter Gardens(1,2)	East Otay Mesa(1,2)	Total
2014	12	1	1			14
2015	6					6
2016	3		3	2		8
2017	9		2			11
2018	5			1		6
2019	3	2				5
2020	6			1		7
2021	1					1
2022	3	1	7		1	6
2023	3	1				4
Total	**51**	**5**	**7**	**4**	**1**	**68**
Percent	75%	7%	10%	6%	1%	

Notes:
(1) County, Alpine, Lakeside, Spring Valley, Winter Gardens, East Otay Mesa, WDID No. 9SSO10662.
(2) The SSOs are based on current records from CIWQS.

Table 12 shows that 75 percent of the SSOs have occurred in the Spring Valley Service Area. The reports also indicate that the leading cause of SSOs in the Spring Valley Service Area have been due to roots. In response to this finding, the County has developed and implemented a program that performs primary rodding and jetting to clear roots and incorporates herbicide treatment occasionally along with thorough cleaning and inspection efforts of the pipelines treated. Subsequent to chemically treating and cleaning the pipelines, County staff performs the inspection of the pipelines to verify that no obstructions remain and minimize the potential for an SSO occurrence at the location. Additionally, crews are assessing a variation of nozzle types, equipment, and/or their combination to determine the effectiveness and efficiency of the arrangements.

The areas have been specifically targeted as they have been identified and documented as consistently having high root concentrations or the pipelines are located in very steeply sloped areas and have high root concentrations. As the program continues to be implemented, County staff will monitor, track progress and evaluate the findings to further refine the system needs. These efforts have resulted in a downward trend in the number of SSOs caused by roots in the Spring Valley Service Area. Only two SSOs in that area were the result of roots during 2022 and 2023.

9.3 SSO Reported Volume

In compliance with the General Order, the County has reported the estimated spill volume for each SSO event reported along the County's main lines. Figure 7 illustrates the SSO volumes reported since 2014. In 2017, a large SSO occurred that was due to a large storm event and pipeline failure. The SSOs were reported to have been caused by the rainfall exceeding the sewer design capacity.

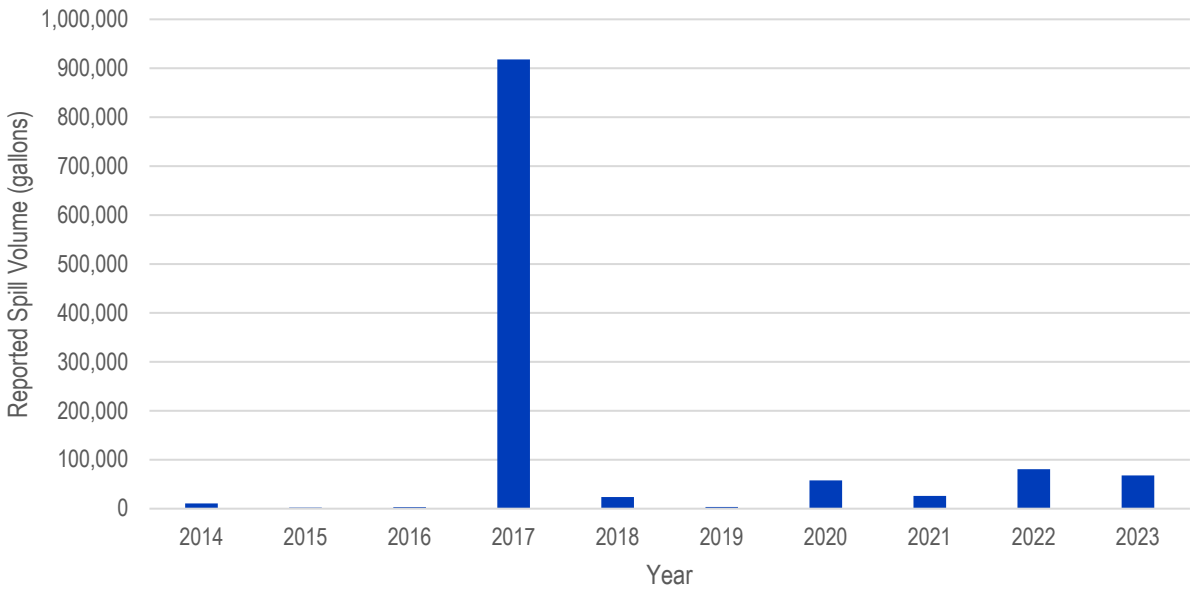

Figure 7 Reported Volume of SSO Events

Since 2014, the reported SSO volumes have ranged from 5 to 912,700 gallons. Table 13 is a summary of the reported SSO volumes based on the reported cause.

Table 13 Reported SSO Volume Based on Defect

Year	Debris	Root	Grease	Defect	Other	Vandalism	Total
2012	500	2,680	0	0	0	0	3,180
2013	1,935	3,800	150	0	0	875	6,740
2014	4,500	5,195	5	1,000	0	0	10,700
2015	0	2,148	0	0	0	0	2,148
2016	450	1,410	0	0	1,481	0	2,891
2017	500	4,890	0	0	912,700	0	918,090
2018	0	690	0	4,102	2,655	16,500	23,947
2019	130	325	0	0	2,681	300	3,436
2020	1,112	690	0	0	56,044	0	57,181
2021	0	0	0	26,010	0	0	26,010
2022	2,620	133	0	77,825	0	0	80,578
2023	0	980	0	0	66,995	0	67,975
Total	**9,312**	**16,461**	**5**	**108,937**	**1,042,556**	**16,800**	**1,194,071**

Notes:
(1) Data used for this table came from CIWQS Spill Search Export and 2020 Audit.

SECTION 10 INTERNAL AUDITS

The County has prepared and will retain a copy of the audit on file for reference and as required by the General Order. Generally, the audit was focused on evaluating the effectiveness of the SSMP components and the County's compliance with the General Order requirements, including identification of modifications necessary, program deficiencies and steps to be implemented to address them.

Where applicable, required modifications and/or deficiencies were identified and County staff have proceeded to address and incorporate necessary revisions into the relevant SSMP components.

SECTION 11 PUBLIC OUTREACH

The County's continued efforts to increase public awareness, educate, inform, and engage the public's support and participation in the proper utilization of the County's sanitary sewer system, and comply with the WDRs use of the following:

- County Official Website.
- County SERP.
- Public Meetings.

The County's SSMP and regular audits are available on the County's website (https://www.sandiegocounty.gov/) which allows the public the opportunity to provide input to the elements of the SSMP.

SECTION 12 PROGRAM MODIFICATIONS

In preparing the required audit, the County identified the following as areas with opportunities for improvements. Additionally, deficiencies in their SSMP were identified to meet the updated General Order requirements.

12.1 Goal and Introduction

The County's SSMP needs to be updated to meet the following new requirements of the General Order.

- Must include a schedule for the County to update the plan and for conducting internal audits. The schedule must have milestones for the incorporation of activities addressing the prevention of sewer spills.
- System Asset Overview:
  - » Structures diverting stormwater to the sewer system.
  - » Data management systems.
  - » Sewer system ownership and operation responsibilities between the 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 challenges.
- Provide a reference to the County's up-to-date map of its sanitary sewer system required in the section.

These items will be addressed in their next SSMP update.

12.2 Organizational Chart

The County's 2022 SSMP Audit identified changes to organization, Figure 3.1 and Figure 3.2 in the SSMP need to be updated to reflect the County's modifications in department names and responsibilities, respectively. Additionally, the LRO and designated data submitters need to be updated in their SSMP.

The respective description of general responsibilities and the Communication Plan need to be revised to reflect the organizational changes and changes in roles and responsibilities of the supporting staff as it relates to the SERP.

12.3 Legal Authority

12.3.1 Prevention of Illicit Discharges

The County's existing SSMP does not demonstrate legal authority to:

- Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross-connections of sanitary sewer infrastructure to storm sewer infrastructure.
- Obtain easement accessibility agreements for locations requiring sewer system O&M, as applicable.

12.3.2 Storm Drain System Coordination

The County's existing SSMP needs to be expanded to more clearly demonstrate the County's collaboration with storm sewer agencies to coordinate emergency spill response, ensure access to the storm sewer system during spill events, and prevent unintentional cross connection.

The County manages and operates most of the stormwater infrastructure within their service area. Thus, communication and coordination are interdepartmental. The County's Waste Management and Watershed Protection programs meet quarterly to find opportunities to collaborate, including, but not limited to, spill containment and best practices for preventing spills from entering stormwater collection system and bodies of water.

If a spill occurs outside of the County's stormwater collection system service area, then the County may communicate and coordinate with the City of San Diego, City of Chula Vista, City of National City, City of El Cajon, and City of Santee.

Narratives will be included in their next SSMP update that describes these relationships.

12.4 Operations and Maintenance

The County is dedicated to improving the condition and performance of its wastewater collection system and reducing the number of spills. Generally, the County's O&M Program includes a current summary of the County's procedures and practices as they pertain to the O&M of the sanitary sewer system. In addition, one Program Coordinator has been added to manage the County's GIS data. The following sections provide a summary of the County's recent modifications to the O&M procedures as they apply to the program components.

12.4.1 Computerized Maintenance Management System

The County utilizes CityWorks to keep records of the O&M of the sewer system. This system integrates the GIS system, identifying the entirety of the collection system, along with Collections equipment, material, and labor. Daily work orders are created and sent to the Equipment Operators for all tasks assigned, which include CCTV, mechanical cleaning, root treatment, small repairs, SSO response, and training, along with all other daily assignments. The information gathered from the daily work orders includes the production and cost for all activities.

12.4.2 Sanitary Sewer Mapping

The County recognizes the need of on-going updating of information on GIS and continues to incorporate any additional information identified or that becomes available. The County continues its commitment to thoroughly and accurately document its wastewater collection system assets and is supported by its hire of one GIS staff to continue the documentation efforts that will ultimately assist the County in its efforts to efficiently and comprehensively manage its assets. The County's newly implemented CMMS asset mapping tool allows staff to view newly revised data and associated as-built drawings and perform data queries.

Additionally, the County's SSMP needs to include procedures for maintaining and providing the State Water Board and Regional Water Board staff access to the sanitary sewer system maps. Narratives will be included in their next SSMP update that describes these procedures.

12.4.3 Preventive Maintenance Program

The County continues its proactive preventative maintenance activities, which include scheduled maintenance of the wastewater facilities, including sewer pump stations and wet wells, routine cleaning of the wastewater collection system pipelines, and CCTV inspections. County staff has recently implemented improved documentation efforts to capture more comprehensive system data.

The additional data captured during the cleaning efforts will serve to allow County staff to update and refine its current list of special maintenance sites and identify pipe segments which may require evaluation as to the condition of the pipeline and associated maintenance holes. Additionally, the information will allow County staff to identify system locations that may be potential candidates for CIP or Major Maintenance projects. As the revised documentation method is implemented, County staff will monitor and assess the data collected.

In addition, the County has installed 70 SmartCovers within the collection system. The purpose of the SmartCovers is to reduce the risk of a spill by alerting the County of rising flow trends within the

maintenance hole. SmartCovers is a device that has an antenna attached to the maintenance hole cover and a sensor that monitors the height of the sewage flow at the maintenance hole invert. The flow information is transmitted wirelessly to mobile phone applications and desktop computers. The information transmits flow trends, alerts, and alarms. The SmartCovers are placed strategically within the system at remote environmentally vulnerable locations, known spill locations, and Special Maintenance lines.

12.4.4 System Inspection and Assessment

Based on the General Order, it is recommended that the County move this section to the System Evaluation, Capacity Assurance, and Capital Improvements section in their next SSMP update.

The County continues the regular and systematic inspection and assessment of the wastewater system pipelines using CCTV technology. The inspections are performed subsequent to pipe cleaning and debris removal and of all new and rehabilitated pipelines to identify potential defects, determine the effectiveness of the cleaning efforts, and confirm contractor compliance with County design and construction standards.

Generally, condition assessment of the sewer pipelines is performed in the field during the CCTV inspection process by the County field crews. Defects detected and potential problem(s) requiring repair are identified and documented. Permanent records of the noted defects are saved as images on the local drive that is maintained at the Spring Valley Operations Yard.

12.5 Design and Performance Provisions

The County's existing SSMP needs to be updated with design and performance provisions as it relates to the

- Installation of grease traps.
- The County utilizes the City of San Diego's Sewer Design Guide[1] and the Water Agencies' Standards[2] for the planning and design of sewer facilities. These need to be referenced in their SSMP.
- Include procedures of component-specific evaluation of the design criteria.

12.6 Spill Emergency Response Plan

The County's SERP was last updated in 2023 to meet the requirements defined in the General Order and submitted to the State and Regional Water Board. The SERP that is included in the SSMP needs to be updated.

Figure 4.1 of the SERP offers a current and concise overview of the steps required to be implemented by County staff to respond to an actual or possible spill event quickly, summarizes the spill response procedures, and illustrates the County's emergency procedures, including notification and request of additional resources as required in the event of a large spill.

[1] City of San Diego - Sewer Design Guide (May, 2015)
[2] Water Agencies' Standards

Additionally, the County developed and incorporated a right of entry form to the SERP to allow County staff the right of access and entry to properties within the County's jurisdiction for evaluating, removing, and/or clearing debris in the event of a spill occurrence.

12.7 Pipe Blockage Control Program

The General Order has revised the FOG control program to incorporate additional elements. The SSMP must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control FOG, rags, and debris. To meet these requirements the County needs to include the following procedures.

- Include a list of disposal facilities.
- Reference the Legal Authority section that prohibits discharges to the system and identify measures to prevent spills and blockages.
- Reference the Legal Authority section that grants the County the authority to inspect grease-producing facilities, enforcement authorities, and whether it has sufficient staff to inspect and enforce the FOG ordinance.
- Reference the Design and Performance Provisions section that requires the installation of grease removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements.
- Include a schedule for public education and outreach programs that promotes proper disposal of pipe-blocking substances.

12.8 System Evaluation, Capacity Assurance, and Capital Improvements

The General Order requires that the County's SSMP to include activities associated with the following:

- Routine evaluation and assessment of system conditions.
- Capacity assessment and design criteria.
- Prioritization of corrective actions.
- A CIP.

12.8.1 System Evaluation and Condition Assessment

This information in their existing SSMP is included in the O&M Program. It is recommended that the related information be in this section instead. To meet the requirements of the General Order, this section needs to include:

- State the practices and technologies used to evaluate system assets.
- Justification of the amount of the system assessed each year.
- A narrative of how condition assessments are prioritized.
- Procedures of how records are kept.
- Identify system assets that are vulnerable to direct and indirect impacts of climate change.

This information will be included in the SSMP update.

12.8.2 Capacity Assurance

Capacity assurance in the County's existing SSMP is met through the development of sanitary sewer master plans. The County's existing SSMP includes detailed summaries of these master plans. Instead, it is recommended that these master plan summaries be removed and instead, the County's SSMP includes the following:

- Procedures to identify system components likely to experience or contribute to spills.
- Procedures to identify appropriate hydraulic capacity of system assets.
- Define peak dry weather flow conditions and design storms.
- Procedures to identify major sources of I&I.
- How data from condition assessments and spill history are used in capacity assurance.

12.8.3 Capital Improvement Plan

The County's existing SSMP references their latest master plans. It is recommended that in the County's next SSMP update references various planning CIPs, and pages, the Department of Public Works 5-year CIP on their website:

- **Department of Public Works 5-Year CIP[3].** The County's 5-year CIP consists of project sheets for projects that are in active development. One can identify projects by project type or by referring to the indices at the end of the plan to find projects listed in alphabetical order and by community. Each section of the plan is sorted to show projects alphabetically, with fully funded projects shown first followed by partially funded projects. Unfunded projects are included in a list at the end of the document. Project sheets show the community where the project is located, the project title, and the project description, followed by a table with project details, an anticipated expenditure plan, and a map showing the project location.
- **District Projects Page[4].** This page is a list of capital improvement and major maintenance projects that includes a list of upcoming projects and recently completed projects for the past 3 years.

12.9 Monitoring, Measurement, and Program Modifications

The County documents notifications received electronically and regarding potential and actual SSO occurrences. The County has tracked performance measures through the CityWorks (CCMS), and SmartCovers as well as actual and historical reading logs and reports including, but not limited to, the length of pipe cleaned and inspected, the quantity, cause and location of stoppages, spills, and the scheduled maintenance of high-frequency maintenance locations. The County will continue to monitor the performance measures it currently tracks and will implement necessary adjustments to the program when needed.

[3] Capital Improvement Program
[4] District Projects

12.10 Future Policy Changes

On December 6, 2022, the State adopted a revised Statewide WDRs, General Order for Sanitary Sewer Systems. The adopted order impacts the schedule and requirements of the SSMP.

12.10.1 Revised Schedule

The adopted General Order impacts the due dates of the SSMP Updates and audits.

- The County shall conduct an audit of its SSMP at a minimum frequency of once every three years. The County's next due date is November 2, 2027.
- The County shall update its SSMP at a minimum frequency of once every six years. The County's next due date is May 2, 2025.

12.10.2 Sewer System Management Plan Elements

SSMP requirements have shifted towards system resiliency, which requires the Enrollee to include and implement system-specific procedures in its SSMP to proactively prioritize O&M, condition assessments, repair and rehabilitation, and to address ongoing system resilience. The required SSMP Elements are summarized in more detail below:

Introduction:

1. Schedule:
    a. Must include a schedule for the Enrollee to update the plan and for conducting internal audits. The schedule must have milestones for the incorporation of activities addressing the prevention of sewer spills.
2. Sewer System Asset Overview:
    a. Location.
    b. Service area boundary.
    c. Population and community served.
    d. System size includes total length in miles, length of gravity mainlines, length of force mains, number of lift stations, and siphons.
    e. Structures diverting stormwater to the sewer system.
    f. Data management systems.
    g. Sewer system ownership and operation responsibilities between the Enrollee and private entities for upper and lower sewer laterals.
    h. Estimated number or percent of residential, commercial, and industrial service connections.
    i. Unique service boundary conditions and challenges.
3. This section must provide a reference to the Enrollee's up-to-date map of its sanitary sewer system required in later section.

Organization:

1. Identify staffing responsible and integral for implementing their SSMP through an organizational chart.
2. Name of the LRO.

3. Position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific SSMP elements.
4. Organizational lines of authority.
5. Channels of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Boards and other agencies.

Legal Authority:

1. Include copies or an electronic link to the Enrollee's current sewer system ordinances, service agreements, and or other legally binding procedures.
2. Prevent illicit discharges into the system from I&I, unauthorized stormwater, chemical dumping, unauthorized debris, roots, FOG, and trash.
3. Collaborate with storm sewer agencies to coordinate emergency spill response, ensure access to the storm sewer system during spill events, and prevent unintentional cross-connection.
4. Require that sewer system components and connections be properly designed and constructed.
5. Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee.
6. Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures.
7. Obtain easement accessibility agreements for locations requiring sewer system O&M, as applicable.

O&M Program:

1. Updated Map of Sanitary Sewer System:
    a. An up-to-date map(s) of the sanitary sewer system.
    b. Procedures for maintaining and providing the State Water Board and Regional Water Board staff access to the map(s).
    c. The map(s) must show gravity lines, manholes, lift stations, force mains, valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries.
2. Preventive O&M Activities:
    a. Scheduling system preventive O&M activities conducted by staff and contractors. The scheduling system must include the following:
        i. Inspection and maintenance activities.
        ii. High-frequency inspections and maintenance of known problem areas.
        iii. Regular visual and CCTV inspections of manholes and sewer pipes.
    b. Data collection system for preventive O&M activities conducted by staff and contractors:
        i. Data must be documented from the system inspections and maintenance activities.

c. Training. In-house and external training is provided regularly for O&M staff and contractors. Training must cover:
    i. The requirements of this general order.
    ii. The Enrollee's SERP procedures and practice drills.
    iii. Skilled estimation of spill volume for field operations.
    iv. Electronic CIWQS reporting procedures for staff submitting data.
d. Equipment Inventory. An inventory of sewer system equipment, including identifying critical replacement and spare parts.

Design and Performance Provisions:

1. Updated Design Criteria and Construction Standards and Specifications.
    a. Updated design criteria and construction standards and specifications for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances.
    b. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in the System Evaluation, Capacity Assurance, and Capital Improvements of this Attachment, the procedures must include component-specific evaluation of the design criteria.
2. Procedures and Standards:
    a. Procedures and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

SERP:

1. The Plan must include an annually updated SERP to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills.
2. The SERP must include procedures to:
    a. Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner.
    b. 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.
    c. Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders.
    d. Ensure that appropriate staff and contractors implement the SERP and are appropriately trained.
    e. Address emergency system operations, traffic control, and other necessary response activities.
    f. Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system.
    g. Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State.
    h. Remove sewage from the drainage conveyance system.
    i. Sanitize the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters.
    j. Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery.

k. Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior to, during, and after a spill event.
l. Conduct post-spill assessments of spill response activities.
m. Document and report spill events as required in the General Order.
n. Annually review and assess the effectiveness of the Spill Emergency Response, and update the Plan as needed.

Sewer Pipe Blockage Control Program and Roots Control Program:

1. The SSMP must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program and/or a roots control program is needed to control FOG, rags, debris, and roots. 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.
2. To address FOG, rags, and debris, the procedures must include, at minimum:
    a. An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances.
    b. A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area.
    c. The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages.
    d. Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping, and reporting requirements.
    e. Authority to inspect grease-producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance.
    f. An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning schedule for each section.
    g. Implementation of source control measures for all sources of FOG reaching the sanitary sewer system for each section identified above.
3. To address roots, the procedures must, at minimum:
    a. Identify, document, and address system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.
    b. Implement coordination measures to reduce the recurrence of root intrusion for the system areas/components identified above.

System Evaluation, Capacity Assurance, and Capital Improvements:

1. The Plan must include procedures and activities for:
    a. Routine evaluation and assessment of system conditions.
    b. Capacity assessment and design criteria.
    c. Prioritization of corrective actions.
    d. A CIP.

2. System Evaluation and Condition Assessment:
    a. The Plan must include procedures to:
        i. Evaluate the sanitary sewer system assets utilizing the best practices and technologies available.
        ii. Identify and justify the amount (percentage) of its system for its condition to be assessed each year.
        iii. Prioritize the condition assessment of system areas that:
            (1) Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other gross system deficiencies.
            (2) Are in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas.
            (3) Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List.
        iv. Assess the system conditions using visual observations, video surveillance, and/or other comparable system inspection methods.
        v. Utilize observations/evidence of system conditions that may contribute to sewage exiting the system that has the potential to enter a water of the State, for prioritization of rehabilitation and/or repair of compromised system components accordingly.
        vi. Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities.
        vii. 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.
3. Capacity Assessment and Design Criteria:
    a. 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.
    b. Dry-weather peak flow conditions that cause or contribute to spill events.
    c. The appropriate design storm(s) or wet weather events that cause or contribute to spill events.
    d. The capacity of key system components.
    e. Identify the major sources that contribute to the peak flows associated with sewer spills.
    f. The capacity assessment must consider:
        i. Data from existing system condition assessments, system inspections, system audits, spill history, and other available information.
        ii. The capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions.
        iii. The capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events because of climate change.
        iv. Increases of erosive forces in canyons and streams near underground and aboveground system components due to larger and/or higher-intensity storm events.
        v. The capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events.
        vi. Necessary redundancy in pumping and storage capacities.

4. Prioritization of Corrective Action:
    a. 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.
5. CIP:
    a. The CIP must include the following items:
        i. Project schedules including completion dates for all portions of the CIP.
        ii. Internal and external project funding sources for each project.
        iii. Joint coordination between O&M staff and engineering staff/consultants during planning, design, and construction of capital improvement projects; and interagency coordination with other impacted utility agencies.

Monitoring, Measuring, and Program Modifications:

1. The Plan must include an Adaptive Management section that addresses Plan implementation effectiveness and the steps for necessary Plan improvement, including:
    a. Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities.
    b. Monitoring the implementation and measuring the effectiveness of each Plan Element.
    c. Assessing the success of the preventive O&M activities.
    d. Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations.
    e. Identifying and illustrating spill trends, including spill frequency, locations, and estimated volumes.

Internal Audits:

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

Communication Program:

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

12.10.3 Regulatory Coverage Transfer

Regulatory coverage under the General Order is not transferable to any person or party except after an existing Enrollee submits a written request for a regulatory coverage transfer to the Deputy Director at least 60 days in advance of any proposed system ownership transfer. The written request must include a written agreement between the existing Enrollee and the new Enrollee containing:

- Acknowledgement that the transfer of ownership is solely of an existing system with an existing WDID number.
- The specific ownership transfer date in which the responsibility and regulator coverage transfer between the existing Enrollee and the new Enrollee becomes effective.
- Acknowledgement that the existing Enrollee is liable for violations occurring up to the ownership transfer date and that the new Enrollee is liable for violations occurring on and after the ownership transfer date.
- The Deputy Director will consider approval of the written request. If approved, the Deputy Director will issue a Notice of Applicability letter which serves as an approved transfer of regulatory coverage to the new Enrollee.