



Sewer System Management Plan

June 2025 Update

Prepared by
EOA, Inc.
and
District Staff



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4. Marin County Environmental Health *Services Sanitation Agency Response During a Sewage Discharge* (February 2014)
5. Marin County Environmental Health Services *Unauthorized Discharge of Waste Report*
6. Spill Monitoring Plan
7. SMART Sewer Overflow Volume Estimation Workbook, DKF

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2. List of FOG “Hot Spots”
3. CMSA FOG Inspection Status Reports

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1. Ordinance Code - Lateral Rehabilitation Assistance Program
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D. Documents Related to Statewide General Order 2006-003-DWQ

1. [SWRCB Order No. WQO-2022-0103-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*](#) (General Order), adopted December 6, 2022, effective June 5, 2023.
2. [Guidance for Submitting and Certifying the Sewer System Management Plan \(SSMP\) in the California Integrated Water Quality System \(CIWQS\)](#), August 2024.
3. [CIWQS Enrollee's Guide to the SSO Database](#) SWRCB, August 2013
4. LGVSD Resolution No. 2009-1881 approving the final SSMP and its implementation.
5. LGVSD Resolution No. 2014-1994 approving the October 2013 revised SSMP and its implementation
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Preface

This Sewer System Management Plan (SSMP) has been prepared pursuant to the requirements of State Water Resources Control Board (SWRCB) Order No. WQO-2022-0103-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (General Order). The content of this SSMP reflects the specific requirements of the General Order, and was also informed by the *SSMP Development Guide*, developed jointly by the San Francisco Bay Regional Water Quality Control Board and the Bay Area Clean Water Agencies (BACWA).

Each section of this SSMP corresponds to a required “element” as described in Appendix D of the General Order. The requirements for each element are also provided as a preface to each section of this SSMP section. In some cases, a section may also include additional information (in subsections) that are not part of the element’s required content.

CIWQS Identification

The following designations are used in the California Integrated Water Quality System (CIWQS) to identify the District:

Agency: Las Gallinas Valley Sanitary District

WDID: 2SSO10147

Collection System: Las Gallinas CS

1.0 Goal and Introduction

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:

1.1. Regulatory Context

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

1.2. 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.

1.3. 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 this Attachment.

1.1. Regulatory Context

The Las Gallinas Valley Sanitary District (LGVSD, or District) sewer system program is managed by the District's Collections, Maintenance and Safety Manager (Collections Manager) who reports directly to the District's General Manager, who in turn reports to the District Board. The Collections Manager has responsibility for day-to-day management of the collections system operations, SSMP implementation, spill reporting, and related activities. Sewer system operations is performed by six collection system operators divided into three crews, including the Camera Crew (which may also do cleaning if needed to clear a line for CCTV inspection), the USA/Inspection Crew (which performs USA utility location marking and private lateral inspections plus cleaning PMs), and the Pump Station Crew (responsible for weekly pump station rounds plus cleaning PMs). The Maintenance Department, which supports both the collection

system/pump stations and the treatment plant, consists of two Skilled Maintenance Workers, one Electrical/Instrumentation technician, one Computerized Maintenance Management System (CMMS) Technician, and one Maintenance Supervisor. Support for SSMP implementation and updating is provided by the District's Engineering Department, Environmental Services/Laboratory staff, and outside consultants. Additional information on the organizations structure is provide in Section 2.

1.2. Sewer System Management Plan Update Schedule

The State Water Board's SSMP Update web site lists the following due dates:

- SSMP Update: August 2, 2025
- SSMP Audit: February 2, 2025 (six months after end of required 3-year audit period, listed as August 2, 2024). The audit was conducted on January 14, 2025 and uploaded into CIWQS. The next audit will cover the period through August 2, 2027 and must be uploading into CIWQS by February 2, 2028.

1.3 Sewer System Asset Overview

The Las Gallinas Valley Sanitary District (District) serves a population of approximately 32,000 persons in the northern portion of the City of San Rafael and neighboring unincorporated areas of Marin County. The service area covers approximately 20 square miles. The District operates both a wastewater treatment plant and the collection system that is tributary to that plant. The District's collection system consists of approximately 105 miles of gravity sanitary sewers, 6.7 miles of pressure sewers, and 28 pump stations. The District also operates the wastewater treatment plant. Figure 1 shows the service area and the location of key District facilities. The District's wastewater collection and treatment operations are closely integrated and utilize common administrative facilities and staff, engineering staff, and maintenance staff.

Lateral connections to the District's mains, including both the upper lateral, lower lateral, and the main connection fitting are owned by the property owner, who has responsibility for their operation and maintenance. In the process of replacing or rehabilitating its main lines, the District will replace the lateral-to-main connection fitting and will replace the lower lateral (up to the clean-out) if an agreement with the property owner has been reached. Refer to Table 3.1 and Section 7.1 for information regarding the District's incentive program for private lateral replacement.

There are two siphons of the collection system, one located on the Nova Albion Way branch sewer near the intersection of Manuel T. Frietas Parkway and Las Gallinas Ave ("Safeway siphon") system, the other located on the Las Pavadas Ave branch sewer near the intersection of Manuel T. Frietas Parkway and Las Pavadas Ave.

Two satellite systems discharge to the District's collection system:

- Contempo Marin, a manufactured housing community with 379 units, and
- Novato Mobile Home Park, with 315 rentable spaces

The stormwater collection system is separate from the sanitary sewer system. There are several locations where stormwater is diverted to the sanitary sewer system. These include:

- At the treatment plant, site drainage within the boundary of the plant is discharged to the plant influent stream.
- In the Reclamation Area adjacent to the treatment plant, the drainage system around the sludge lagoons and supernatant from the sludge lagoons, which may contain rainwater, is discharged to the plant influent stream.
- At the Guide Dogs for the Blind facility, drainage from a portion of the outdoor kennel area is diverted to the sewer system.

The District utilizes the CityWorks Asset Management System (CityWorks), a GIS-based application which combines asset management functions with a computerized maintenance management system (CMSS) for work order generation and tracking, cleaning schedules, archiving of historic maintenance and inspection data, etc. The same system is used for pump stations and the wastewater treatment plant. CCTV videos are captured in IT Pipes software, which communicates with Cityworks. Example screen shots and reports from Cityworks and IT Pipes are included in Appendix E

The sewer system has a total of 9,789 parcels connected to the system, the vast majority of which are residential connections. A single parcel may have several connections to the sewer, as in the case of a parcel with multiple apartment buildings. A breakdown of these connections by type is provided in Table 1.1. The table also lists the number of Equivalent Dwelling Units associated with each category, which provides a more accurate representation for flow volume and number of users in each category.

Table 1-1. Number of Sewer Connection by Type

Type of Service	Number of Parcels Connected	Number of Equivalent Dwelling Units
Single Family Residential	9,289	9,324 ²
Multi-Family Residential	102	3,161 ³
Commercial	256	3,030 ⁴
Industrial	83	117
Total	9,730	15,623

Notes:

1. Data as of June 30, 2024
2. Includes ADUs on same parcel
3. Includes true duplex and larger multi-unit buildings
4. Includes larger users such as the Northgate Mall, hotels, restaurants

1.4 Definitions and Abbreviations

The following are acronyms and abbreviations used in this SSMP and associated documents:

AMS (Asset Management System)

A software application used to manage capital assets and related data and to perform the functions of a computerized maintenance management system (CMMS). The District uses the Cityworks AMS for both the collection system and treatment plant.

Bay Area Clean Water Agencies (BAWCA)

Backwater Prevention Device

A type of valve installed on a sewer lateral to prevent flows caused by blockages in sewer mains from backflowing into buildings. Also referred to as an overflow protection Device (OPD) or “Contra Costa Valve”.

Best Management Practices (BMP)

Refers to the procedures employed in commercial kitchens to minimize the quantity of grease that is discharged to the sanitary sewer system. Examples include scraping food scraps into a garbage can and dry wiping dishes and utensils prior to washing.

California Integrated Water Quality System (CIWQS)

Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system.

California Office of Emergency Services (CAL-OES)

Capital Improvement Plan (CIP)

Refers to the document that identifies future capital improvements to the District’s sanitary sewer system.

Capacity, Management, Operations, and Maintenance (CMOM)

Refers to the federal (USEPA) program for regulating operation of sewer collection systems. CMOM requirements were incorporated into draft regulations that were subsequently withdrawn. The SSMP and its requirements closely resemble the CMOM program.

Central Marin Sanitation Agency (CMSA)

LGVSD contracts with CMSA for services related to the District’s FOG and Pollution Prevention Programs.

Clean Out or Property Line Clean Out

Refers to the clean out that is typically located on the building lateral near the sidewalk or at the edge of the District’s right-of-way. The property line clean out is used to provide access to maintain the lower lateral. A two-way or “Tee” cleanout will provide access to both the upper and lower laterals.

Category 1, 2, 3, 4 Spills – see Table 6-1 for definitions.

Closed Circuit Television (CCTV)

Refers to the process and equipment that is used to internally inspect the condition of gravity sewers. CCTV video is typically recorded on tape, DVD, or hard drive.

Computerized Maintenance Management System (CMMS)

Refers to a database application used to manage and document maintenance activities of a collection system (preventative and corrective maintenance, inspections, etc).

Data Submitter (DS)

Refers to the individual(s) designated by the District to submit spill reports on the CIWQS system. The DS must be formally designated and registered with the SWRCB, with an assigned user name and password. A DS cannot certify spill reports. (See also LRO)

Drainage Channel

Generally taken to mean an unlined channel that conveys stormwater runoff. The term Drainage Channel is included in the General Order's definition of a Drainage Conveyance System – see below.

Drainage Conveyance System

A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater and non-stormwater flows.

Enrollee

A public, private, or other non-governmental entity that has obtained approval for regulatory coverage under the General Order. The District is an Enrollee.

Equivalent Dwelling Unit (EDU)

A standardized unit of measure used to calculate sewer charges or fees for properties based on their estimated wastewater flow, which is typically compared to that of a single-family residence.

Fats, Oils, and Grease (FOG)

Refers to fats, oils, and grease typically associated with food preparation and cooking activities that can cause blockages in the sanitary sewer system.

Fiscal Year (FY)

Food Service Establishment (FSE)

Refers to commercial or industrial facilities where food is handled/prepared/served that discharge to the sanitary sewer system.

General Order

Refers to SWRCB Order No. 2022-0013-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*. The term General Order is used throughout Order No. 2022-0013-DWQ in referring to itself.

Geographical Information System (GIS)

Refers to the system that it uses to capture, store, analyze, and manage geospatial data associated with the District's sanitary sewer system assets.

Global Positioning System (GPS) Device

Refers to the handheld unit that can be used to determine the longitude and latitude of sanitary sewer overflows for use in meeting CIWQS reporting requirements. Can also be used to geolocate assets for the GIS.

Grease Removal Devices (GRDs)

Infiltration/Inflow (I/I)

Refers to water that enters the sanitary sewer system from storm water and groundwater and increases the quantity of flow. Infiltration enters through defects in the sanitary sewer system after flowing through the soil. Inflow enters the sanitary sewer without flowing through the soil. Typical points of inflow are holes in manhole lids and direct connections to the sanitary sewer (e.g. storm drains, area drains, and roof leaders).

Lateral Sewer

Refers to the piping that conveys sewage from a building to the District’s sewer main. The distinction is often made between the upper lateral (from building to property line) and the lower lateral (from property line to the sewer main). In the LGVSD, both the upper and lower laterals (including the “wye” connection at the main) are owned by the property owner.

Legally Responsible Official (LRO)

Refers to the individual(s) designated by the District to certify spill reports on the CIWQS system. The LRO must be formally designated and registered with the SWRCB, with an assigned user name and password. Both data submitters or LROs can submit reports in CIWQS, but only LROs can certify reports.

Manhole (M/H)

Million Gallons per Day (MGD)

Monitoring and Reporting Program (MRP)

Refers to the Monitoring and Reporting Program section of the Statewide Order.

Operations and Maintenance (O&M)

Private Lateral Sewage Discharge (PLSD)

Refers to a discharge from a sewer lateral or system that is not owned/operated by the District.

Preventative Maintenance (PM)

Refers to maintenance activities intended to prevent failures of the sanitary sewer system facilities (e.g. cleaning, CCTV, repair).

Regional Water Quality Control Board (RWQCB or Regional Water Board)

Refers to the San Francisco Bay Regional Water Quality Control Board, a part of the State Water Resources Control Board.

Sanitary Sewer System

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

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

Sewer System Management Plan (SSMP)

Spill

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

Note: The previous General Order used the term “Sanitary Sewer Overflow” (SSO) to describe releases from the sewer system. That terminology is not used in the current Order, but maybe still be seen in other documents, and is still in use on some State Water Board web pages.

Spill Report

Refers to sewer spill report submitted through the State Water Board’s CIWQS database.

State Water Resources Control Board (SWRCB)

Refers to the California Environmental Protection Agency (EPA) State Water Resources Control Board. The SWRCB is the parent agency of the Regional Water Board and issued the General Order. Also referred to as the State Water Board.

Supervisory Control and Data Acquisition (SCADA)

Refers to the system that is employed by the District to monitor the performance of its pump stations and to notify the operating staff when there is a condition that requires attention

Surface Water

In the context of sewer spills, refers to streams and creeks, the Bay and its sloughs, wetlands, ocean, lakes, and other water bodies. Spills that flow into drainage channels that are tributary to surface water are considered equivalent to having reached surface water for purposes of defining a Category 1 spill. However, spills that enter municipal storm sewer systems (MS4) and which are fully contained and recovered are not considered as having reached surface water.

USA (Underground Service Alert).

A service wherein contractors planning to excavate are required by Cal/OSHA to make a single call (811) to a statewide organization (USA), which in turn contacts utility companies with buried lines (water, sewer, electrical, gas, communications, etc) in the area to be excavated. The utility company then marks the location of their lines in those areas.

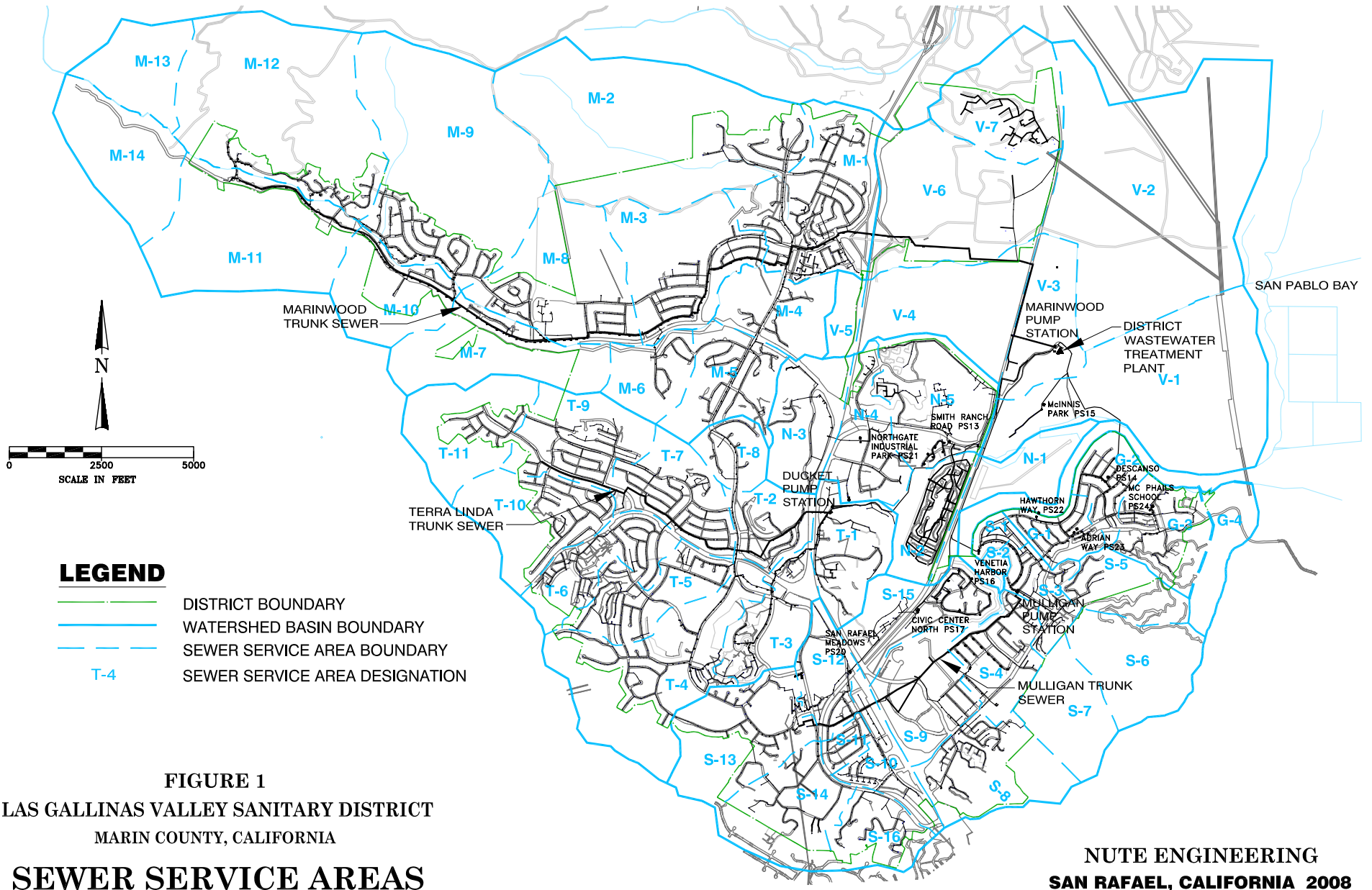
Water of the State [Definition from California Water Code]

Water of the State means any water, surface or underground, including saline waters, within the boundaries of California.

Waste Discharge Requirements (WDR)

Refers to an order regulating the discharge of wastes issued under the authority of the California Water Code. WDRs are issued by both the SWRCB and Regional Water Boards, and may apply to individual dischargers or groups of dischargers (the latter are typically referred to as General or Statewide Orders). General Order No. 2022-0103-DWQ is a WDR.

Attachment A of the General Order has additional definitions for certain terms that are used in that Order.



2.0 Organization

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

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

2.1 Name of Legally Responsible Official

The District’s current LROs are listed below. Contact information is provided in Section 2.3.

Table 2-1. LRO Listing

Name	Position
Greg Pease	Collections, Maintenance, and Safety Manager

2.2 Organization Chart

The District’s organization chart is presented in Figure 2. Roles and responsibilities of key personnel relative to the wastewater collection system are as follows:

Ratepayers: Elect members of the District Board of Directors. Ratepayers are the primary source of funding for District capital and operating budgets.

District Board of Directors: Sets overall direction for the District through mission statement, and establishment of goals and objectives. Adopts policies, procedures and ordinances consistent with this direction. Enters into contracts and agreements, hires employees and agents. Provides oversight of District operations, including review and approval of capital and operating budgets, acquisition and disposal of property and equipment, payment of bills, setting of connection fees, and establishment of user rates. Represent the District on other boards, committees and associations. The Board of Directors is assisted by District counsel.

General Manager: Develops alternatives and recommendations for District policies, budgets, Capital Improvement Program and strategies for consideration by the Board of Directors. Coordinates Board meetings and agenda, serves as staff liaison with Board, and as District liaison with other agencies, utility users, and the general public. Has overall responsibility for District operations and implementation of Capital Improvements Program. Oversight responsibility for development, implementation, and updating of SSMP

Collection, Maintenance & Safety Manager (Collections Manager): Responsible for day-to-day implementation of SSMP. Manages collection system field operations and maintenance activities. Coordinates District response to emergencies, line blockages, and spills. Coordinates and documents investigations and follow-up. Serves as legally responsible official (LRO) for reporting spills to local and State agencies. Maintains collection system data management systems, contingency plans, and provides summary reports to General Manager and District Board.

Collection System Operators: Conduct collection system corrective and preventive maintenance (PM) activities, including emergency response for blockages and spills, CCTV inspections, utility marking (USA), routine inspections of collection system pump stations, and inspections of work by private contractors on sewer laterals. When directed, coordinates with vendors and outside contractors for equipment and services.

Maintenance Staff: Responsible for maintenance of the treatment plant and collection system pump stations. District's maintenance staff consist of a Maintenance Supervisor, a CMMS Technician, two skilled Maintenance Workers, and an Electrical/Instrumentation Technician.

Treatment Plant Manager and Plant Operations Staff: Responsible for operation of the treatment plant and monitoring of the larger collection system pump stations (via SCADA). Available as needed to respond to collection system emergencies and spills.

Environmental Services Staff: Operates District laboratory and (with CMSA) FOG and Pollution Prevention Programs. When required and if available, conducts sampling for spills. The Environmental Services Director reports to the Treatment Plant Manager.

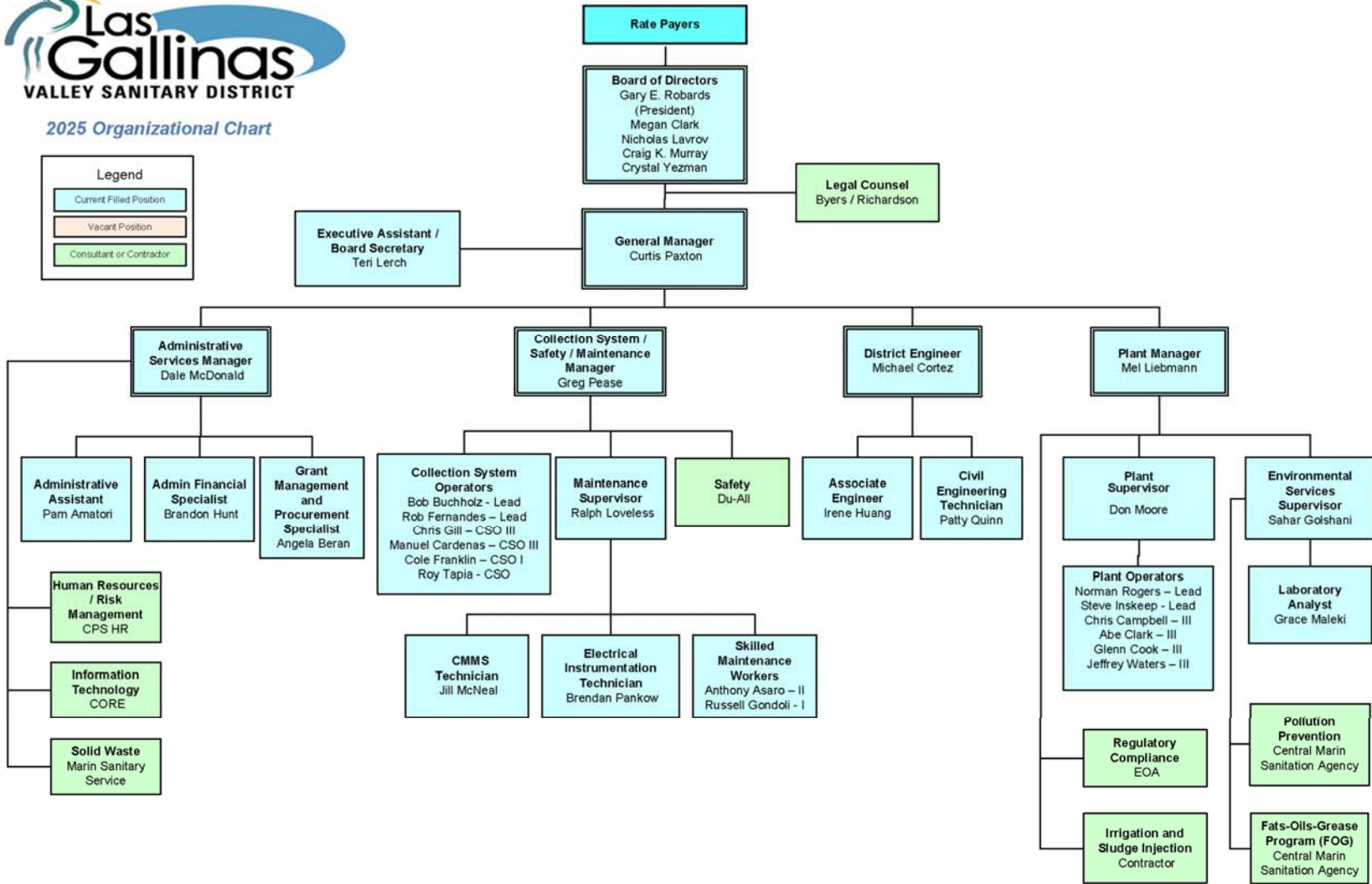
FOG and Pollution Prevention (P2) Programs Contractor: The District contracts with Central Marin Sanitation Agency (CMSA) to provide support to LGVSD staff for the FOG and Pollution Prevention Program.

District Engineer: With assistance from the Associate Engineer, Civil Engineering Technician and outside engineering consultant(s), manages collection system capacity analysis, develops recommendations and budgets for Capital Improvements Program, manages development of engineering designs for new or rehabilitated facilities, coordinates construction bidding process, oversees construction and inspections. Responsible for review and updating of District's standard specifications for sewer construction, and for maintaining sewer system maps.

District Administrative Services Manager: Under general direction of the General Manager, plans, organizes, coordinates, and manages administrative services functions including accounting, budget, human resources, risk management, procurement, records management, and administrative support; serves as the District's Chief Financial Officer; serves as a liaison and coordinates assigned activities with other District personnel and external agencies to ensure compliance with reporting requirements; provides responsible and complex administrative and operational assistance to the General Manager; and performs related work as required.

Regulatory Consultant: Provides technical support for permitting, monitoring, reporting, compliance, SSMP updating and internal audits, collection system status reports, data management, and other a-needed support.

Figure 2. LGVSD Organization Chart



2.3 Contact Information

Contact information is provided in Table 2-1 for several of the key positions described above. Phone numbers for the positions listed typically do not change when staffing changes, however, email addresses will change (first initial+last name@lgvsd.org)

Table 2-2. Contact Information

Position	Phone Number ¹	Email addresses
General Manager	(415) 472-1734, ext 11	cpaxton@lgvsd.org
Collections Manager Collections Manager (Emerg. #)	(415) 472-1734, ext 13 (707) 533-3520	gpease@lgvsd.org
Collections Standby Cell ²	(415) 450-7262	--
Maintenance Supervisor	(415) 472-1734, ext 23	rloveless@lgvsd.org
Plant Manager	(415) 472-1734, ext 26	mliebman@lgvsd.org
Plant Supervisor	(415) 472-1734, ext 23	dmoore@lgvsd.org
District Engineer	(415) 472-1734 ext 18	mcortez@lgvsd.org
Environmental Services Director	(415) 472-1734, ext 14	sgolshani@lgvsd.org

1. The main plant telephone number (415) 472-1734) is available 24/hr/day.
2. For sewer backups, spills, pump stations and Collection System related emergencies (after hours)

2.4 Chain of Communication for Reporting Spills

Spills may be reported to the District via the main plant phone number at any time. During non-business hours, the call is received by an answering service who will contact the standby employee, and, if necessary, the San Rafael Police Department. Alternately, the Collections Standby Cell number can be called. Tab 1-4 of the Spill Emergency Response Plan also lists individual contact numbers for District staff and outside agencies.

Spill response is almost always handled by the collection system operators, who in some cases may be assisted by maintenance staff, plant operators, or if monitoring is required, laboratory staff. Collection system operators are trained to gather information needed for reporting spills to the State, and when required, for notifying OES and Marin County Environmental Health Services. The *LGVSD Incident Report* is used for spill documentation.

For consistency and to minimize errors, all reporting in CIWQS is performed by the Collections Manager. In cases where 2-hour notification to OES is required and the Collections Manager is unavailable, notification is done by a collections system operator.

3.0 Legal Authority

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

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

3.2 District Ordinances Relevant to the SSMP

The District's primary legal authority is provided through Ordinances adopted by the District's elected Board of Directors. Additional authority is provided by service agreements with several private collection systems that discharge to the District's system. Over its history, the Board has adopted over 150 Ordinances. These are organized sequentially by date of adoption, and in 2010 were codified into an Ordinance Code (see below). A majority of the Ordinances relate to adjustments to service rates and connection fees, and as such, supersede previous Ordinances. Ordinances relevant to this SSMP include:

- Ord 9: Regulates use of sewers, establishes construction standards (by reference to District's *Specifications for Sewer Construction*). Largely superseded by subsequent ordinances.
- Ord 10: Prohibits use of impact and vibratory machines, heavy equipment, etc. during construction.
- Ord 40: Requirements for installation of backwater prevention devices
- Ord 56, 159: Requirements for construction of sewers underlain by Bay mud
- Ord 63: Regulations regarding discharge of Industrial Wastes and regulating use of public sewers (Note: Listed for historic purposes only. Superseded by Ord 112)
- Ord 64: Various additional definitions; amended "Sewer Required" provision of Ord 9; added a "Use of Public Sewers" provision to Industrial Waste Ordinance (at that time Ord 63).
- Ord 66: Use of sewers. *Note: Portions of this may be superseded by Ord 112. Portions supersede previous ordinances.*
- Ord 92: Amends Ord 63 (industrial waste) to refer to Ord 66

- Ord 112: Primary sewer use ordinance (a.k.a. Industrial Waste Ordinance). General discharge prohibitions, industrial pretreatment requirements, local limits, enforcement authority. Does not address construction standards. Repeals Ord 63 and other ordinances “inconsistent herewith”.
- Ord 113: Includes requirements for backflow prevention and backwater prevention devices
- Ord 135: FOG Ordinance
- Ord 136: Food Grinder Ordinance
- Ord. 121, 124, 130, 131, 133, 161, 166, 187: Ordinances related to current sewer service rates and fees.
- Ord 146: Regulates dental amalgam to minimize discharge of mercury to the sanitary sewer.
- Ord 153, 197 Contractual Assessments for Sewer Lateral Repairs / Private Sewer Lateral Rehabilitation Assistance Program
- Ord 180 Sewer Lateral Ordinance. Sets requirements for lateral inspections, disconnection of illegal connections associated with inflow, and pool overflow piping.

In addition to the legal authority based on Ordinance, the District has service agreements with Contempo Marin, Sade Apartment Development, and Marin Valley, Inc.

In 2010, the District completed the compilation and consolidation of its ordinances into a new Ordinance Code. The Ordinance Code is more accessible, and its organization by titles and chapters greatly facilitates the search for legal authority on a given topic. The Ordinance Code is available on the District’s web site at <https://www.lgvsd.org/document-library/ordinance-code/>.

3.3 Documentation of Legal Authority

Table 3-1 correlates the General Order SSMP requirements listed above to the corresponding Ordinance Code references. The final column provides additional notes and comments for some of the listed items.

There is no specific legal authority for the District to collaborate with storm sewer agencies to coordinate emergency spill responses or ensure access to storm sewer systems during spill events. However, inter-agency collaboration with the City of San Rafael (which operates the stormwater system in incorporated areas of the District), Marin County (which operates the stormwater system in unincorporated areas of the District), and the Marin County Flood Control District (which operates drainage and flood control infrastructure in certain areas of the District)¹ is normal practice, and District staff have access to stormwater system maps in the field. The District does have legal authority to prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure, as documented in Table 3-1.

¹ The areas include Zone 6, a very small (0.16 square mile) area west of US101 across from the County Civic Center within the City of San Rafael, and Zone 7, a 0.42 square mile area in unincorporated Santa Venetia.

Table 3-1. Documentation of Legal Authority

Legal Authority to	Ordinance Code Reference	Notes & Comments
<i>Prevent illicit discharges from I&I, unauthorized stormwater, etc.</i>		
Illicit discharges prohibited	Title 2, Chapter 2, Art. IV	
Prohibition on discharge of stormwater, subsurface drainage, groundwater	Title 2, Chapter 2, Art. IV, §402 Title 2, Chapter 9, Art. X, §1002	Prohibits discharge of “any storm water, surface water, groundwater, roof runoff or subsurface drainage, except in cases of discharge of contaminated groundwater in accordance with Article IX.” Article X Specifically addresses inflow into laterals
Discharge of fats, oils and grease	Title 2, Chapter 4 (all); Title 2, Chapter 2, Art. IV Title 2, Chapter 9, Art. VI, §603	FOG is very well covered. Add'l language related to roots and other debris added by Ord. 180.
Discharge from swimming pools	Title 2, Chapter 9, Art. X, §1005	Allows discharges up to 100 gpm (existing) ¹ Prohibits overflow piping from connecting to sewer (new).
Maintenance of laterals	Title 2, Chapter 1, Art. IV, §510 Title 2, Chapter 9, Art. VI, §603	“Side sewers shall be maintained by the owner of the property served thereby.” Additions specific requirements for maintenance of laterals. See also “Lateral Inspections” below.
Contractual Assessments for Sewer Lateral Repairs / Private Sewer Lateral Rehabilitation Program	Title 2, Chapter 8, Art. 1 & 2 (all)	Authorizes District to pay for the costs of repairs to an owner’s sewer laterals and then, by agreement with the property owner, add the costs of such repairs to the County Tax Rolls as an assessment. Priority for funding is laterals affected by the District’s current Sewer Improvement Project. Available funds may then be used for sewer lateral repairs that are not part of the current Sewer Improvement Project
General prohibition on causing pass-through or interference, or hazard to public safety, the environment or District personnel	Title 2, Chapter 2, Art. IV, §401	Although aimed at prohibiting the discharge of “wastes”, could be applied to excessive I/I (alone or in conjunction with discharges from other sources) that, by virtue of increased flows, could contribute to pass-through of pollutants resulting in a violation of NPDES permit limits.

Legal Authority to	Ordinance Code Reference	Notes & Comments
Specific Prohibitions	Title 2, Chapter 2, Art. IV, §401	A number of prohibited discharges are listed, including “Any solid or viscous pollutants in amounts which will cause obstruction to the flow in the System.” This would apply to wipes and other materials that could cause blockages.
<i>Require that sewers and connections be properly designed and constructed</i>		
Building sewers laterals and connections – permits and construction requirements	Title 2, Chapter 1, Art. V (all)	Construction shall be in accordance with County and District’s requirements
Legal Authority for proper construction of privately owned lines is normally provided by Building codes	Title 2, Chapter 1, Art V	Building Code requirements are supplemented by District-specific requirements in Ordinance 180.
Building sewers laterals – Testing required	Title 2, Chapter 1, Art. V, §511 Title 2, Chapter 9, Art. X, §1002	Establishes triggers for inspections, testing, and repairs.
Public Sewer Construction – Permits and designs required	Title 2, Chapter 1, Art. VI (all)	
Public Sewer Construction - Design and construction standards	Title 2, Chapter 1, Art. VI (all)	Refers to District’s <i>Specifications for Sewer Construction (a.k.a. Standard Specifications and Drawings)</i>
Inspections required for sewer construction, building sewers, plumbing and drainage systems	Title 2, Chapter 1, Art. VI (all)	
Prohibition on use of heavy equipment	Title 2, Chapter 1, Art. VI §619	
Special requirements for construction on Bay mud	Title 2, Chapter 3, (all)	
Interceptor required	Title 2, Chapter 4, Art. V	
Maintenance of interceptor required	Title 2, Chapter 4, Art. VII	

Legal Authority to	Ordinance Code Reference	Notes & Comments
<i>Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency</i>	Title 2, Chapter 1, Art. V (cleanout on lateral required in new construction or alteration)	Section 506 requires a cleanout. Section 609 references District Standards, which show a clean-out is required on user's property (for access to lower lateral). Ord 112, Section 4.A.2.g, provide for access for inspection, sampling, etc, but do not explicitly mention repairs.
<i>Enforce any violation of its sewer ordinances</i>	Title 1, Chapter 1, Art. III Title 2, Chapter 2, Art. XI Title 2, Chapter 9, Art. XII, XIII	These are the primary enforcement sections. There are additional enforcement provisions that accompany other sections.
<i>Ordinance, permits, agreements should have authority to require compliance with District Standards</i>	Title 2, Chapter 1, Art V	
<i>Agency should have ability to ultimately disconnect a user that fails to comply</i>	Title 2, Chapter 2, Art. XI, §1101 Title 2, Chapter 1, Art. IX, §903	Authority to disconnect applies to all users.
<i>Illegal Discharges should be subject to corrective action regardless of user class (domestic, commercial, industrial)</i>	Title 2, Chapter 2, Art. IV	The general and specific prohibitions in Ordinance 112 apply to all users, (see Section 1B and definition of "person").
Other		
<i>Lateral Inspections</i>	Title 2, Chapter 9, Art. VII-X	District requires mandatory inspection of new and rehabilitated sewer laterals. Ordinance 180 establishes triggers for inspections, testing, and repairs, based on health & safety criteria, major remodel, or property sale. Repair requirements are aimed primarily at inflow reduction. Repairs other than those associated with inflow are generally not mandatory, but can be mandatory under certain conditions.

4.0 Operations and Maintenance Program

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

4.1. Updated Map of 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.

4.2. Preventive Operation and Maintenance Activities

A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors.

The scheduling system must include:

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

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

4.3. Training

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

- *The requirements of this General Order;*
- *The Enrollee's Spill Emergency Response Plan procedures and practice drills;*
- *Skilled estimation of spill volume for field operators; and*
- *Electronic CIWQS reporting procedures for staff submitting data.*

4.4. Equipment Inventory

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

4.1 Collection System Maps

Detailed collection system maps are maintained in digital electronic form in the District's GIS System (ARC-ESRI). Development of this system was completed in 2012 and required conversion of mapping data from the previous system based on AutoCad. The GIS system is linked to the District's new and more powerful Cityworks Asset Management System (Cityworks), a GIS-centric system that incorporates traditional asset management and computerized maintenance management system (CMMS) functions and other features.

Hard copy maps are printed from the GIS system onto tear and water-resistant paper. Map books are available at District offices, and a set is carried in each collection system vehicle. The map books contain a key sheet plus 69 individual map sheets printed at 1"=200' scale.

Each map covers an area of approximately 2000' x 2900' (0.38 mi x 0.55 mi). The maps show the location and size of all sewer lines and force mains (color coded), manholes (with ID #), pump stations, street names and boundaries, parcel addresses and boundaries, and ground surface elevation contours. The map key and an example map sheet are included in Appendix E. Also included is the pump station network map (block diagram) that shows the relationship among pump stations and force mains. In addition to the sewer system maps, collection system operators have online access in the field to City of San Rafael and Marin County maps showing storm drain locations within the District, via marinmap.org.

As part of the GIS system development process, the District completed a systematic review and update of each map sheet. Nevertheless, the process for updating and correcting map errors is an ongoing one. During video inspections, any errors or omissions are recorded by the collection system Camera Crew. The information is reviewed by the Collections Manager and then forwarded to the GIS contractor (Centricity) who revises the map. This function will eventually be transferred to the District's CMMS Technician. New copies of the revised pages are printed if changes were significant.

For the design of capital improvement projects, shapefiles can be exported from the GIS system into CAD programs for use in development of construction plan sheets. However, the District's current practice for sewer main rehabilitation projects is to use aerial photography and GIS system maps to develop plan sheets.

Boundary Map

The District will upload an electronic sanitary sewer system service area boundary map between 7/1/24 and 12/31/25 as required under Section 3.8 of Attachment E1 of the General Order, in accordance with the specifications provided by the State Water Board.

4.2 Preventative Operation and Maintenance Activities

The District operates a prioritized preventative maintenance (PM) program designed to maintain the integrity of the system, reduce the frequency of spills, and reduce I/I. Cityworks is now the primary O&M data management/visualization tool. Inspection documentation has transitioned from use of hard copy inspection forms to electronic data entry in the field using tablet computers. The information is then transferred electronically into Cityworks. PM activities are prioritized based on results from historic PM and corrective maintenance (CM) activities. Prioritization is an ongoing process, with PM schedules continually being updated based on recommendations contained in the inspection or maintenance reports.

Collection system O&M activities are summarized in a map-based form generated from Cityworks. The Collections Manager also summarizes collection system activities in quarterly reports to the District Board. Appendix E includes an example report.

The Collections/Maintenance group utilizes three crews. The Camera Crew conducts CCTV inspections utilizing specialized equipment and a custom-designed truck which can also be used for cleaning. (Cleaning may be required to run the camera through a line. The crew also participates in "Hotspot" cleaning). The USA/Inspection Crew conducts USA markings of

sewer lines and sewer cleaning. The Pump Station Crew conducts inspection/cleanings at pump stations two days per week and sewer cleaning on the other days.

Gravity Sewer System

PM activities for the gravity sewer system include the following:

Table 4-1. Preventative Maintenance Activities

Activity	Performed by
ITV - inspection by CCTV	Camera crew
CJET – Flushing with camera truck	Pump Station crew
CLEAN - Flushing with flusher truck	USA/Maintenance crew
ROOTCT - Rodding	USA/Maintenance and PS crews
CVAC – Vactor Truck	USA/Maintenance and PS crews
IRO – TVing with push camera	USA/Maintenance and PS crews
SMOKE – smoke testing	Camera or Maintenance crew

Work orders are generated from CityWorks and are available to maintenance crews in the field using tablet computers. The location of the PM is specified in terms of structure ID or sewer line segment identified by upstream and downstream manholes. An example work order is included in Appendix E. The crew documents the PM activity by completing the work order and by adding comments (e.g., condition, special circumstances) as needed. Upon returning to the office, the tablets are re-synced to the server. Any comments become part of the historic record for that structure or line segment. A PM history for any structure/segment can be generated from Cityworks, as illustrated by the example in Appendix E.

All sewer main lines segments are on a cleaning schedule. The current performance goals for cleaning and other PM activities are listed in Table 4-2. The goal for cleaning the entire system is very aggressive but has been met in recent years. Performance metrics are tracked in CityWorks and are included in the quarterly Collections/Safety/Maintenance Reports prepared by the Collections Manager for the District Board. These reports can be found in the Board meeting agenda packages posted on the [District web site](#). Example copies of the O&M reports are also included in Attachment E of this SSMP.

Performance metrics regarding the type, frequency, volume, and cause of spills are tracked in Table 1 “Annual Spill Statistics” of the SSMP audit, included in Attachment F.

The decline in ROOT CT (Rodding) activity since 2017 that is evident in Table 1 of the SSMP Audit is the result of using new hydraulic methods (i.e. high pressure cleaning) for root cutting and removal. Root CT is still used for mains greater than 10-inches, but such lines comprise a relatively small fraction of the overall collection system. Similarly, use of the small IRO “push cameras” for CCTV has declined because most of this function can now be achieved using the robotic camera. Root CT and IRO footages are no longer tracked in the CMMS as separate categories.

Table 4-2. Target Frequencies for PM Activities

Activity	Frequency
Cleaning - Entire System	Annually
Cleaning - Hot Spots	Semi-Annually
Cleaning - Safeway siphon, Professional Center Parkway	Quarterly
CCTV - Entire System	Every four years ¹
Smoke Testing	As needed

1. More frequently for known problem areas

Historically, the District conducted CCTV operations on an ongoing basis. Through this process, it identified “Areas of Concern” and FOG “Hot Spots” listings, as described elsewhere in this SSMP. Because the amount of new information generated from CCTV operations was declining, starting in mid-2018, the District shifted the focus of the Camera Crew to cleaning operations, so that the entire system could be cleaned within a one-year period. This also allowed the Cityworks AMS to be fully populated with sewer line cleaning data.² The District resumed routine CCTV inspections in the fall of 2019 and conducted ~80,000 ft of CCTV inspections in 2019-2020. In 2021-2022, CCTV inspection footages were again reduced to focus on increased cleaning footages but then resumed again in 2023-2024. CCTV videos and their related Pipeline Assessment Certification Program (PACP) ratings are managed using the IT Pipes software application, which communicates with Cityworks.

CCTV inspections are normally done on “dirty” mains (i.e., prior to cleaning) to get a more accurate assessment of pipe conditions, as cleaning could remove evidence of a problem such as root intrusion or FOG accumulation. An exception would be in cases where cleaning is needed for the camera to physically pass through the pipe.

The District conducted smoke testing through 2016 but found that the testing was no longer yielding information commensurate with the resources required, and that the public reaction to smoke testing was generally negative. For this reason, smoke testing is now done on an “as needed” basis rather than as a routine activity.

In 2019 the District purchased a new vacuum flusher (VacCon) truck. In 2020, it took delivery on an additional flusher truck with equipment specifically designed to facilitate cleaning in easements, which sometimes have steep terrain, and which are logistically more difficult. A Vactor Truck purchased in 2025 replaced the F-750 Flusher truck.

Sewer Laterals

Both the upper and lower sewer laterals that connect structures to the sewer mains are owned by the property owner of the parcel on which they are located. Maintenance of both the upper and lower laterals is the responsibility of the property owner.

² The PM history from the previous CMMS (OASIS) was not carried into Cityworks because of structural differences between the two applications. However, the OASIS history is available in archive form.

Pump Stations and Force Mains

Inspection and maintenance of the pump stations is performed by the Pump Station Crew and Electrical Instrumentation Technician. Except for holiday weeks, the thirteen large and mid-size pump stations are inspected twice per week, and the fifteen small pump stations (nine at Marin Lagoon and six at Captain's Cove) are inspected weekly. Inspections include a visual check of equipment, logging of run-time hours, and washdown of the wet well if needed. Maintenance activities include testing of alarms, running the emergency backup generators (monthly), preventative maintenance on pumps and other equipment, and as-needed repairs. The Cityworks CMMS is also used for the pump stations, as well as the treatment plant.

Collections staff visually inspect the force mains alignments by walking all mains twice per year. The primary O&M activity for force mains is maintenance of the system's air release valves (ARVs). In 2016, the District purchased a hot water pressure washer to aid with routine cleaning of the ARVs. In 2019, the District cleaned and repaired 15 ARVs (out of a total of 29), including a number of previously undocumented units. The 2020 Sewer Improvement Project focused on the Force Main System, with rehab/replacement of ARVs a key element of the project. The Duckett Pump Station Force Main Access Structure Project completed in 2024 provided two manhole structures to access the force main for inspection and cleaning. The District is investigating methods to perform internal investigations of force mains, e.g., use of "Smart Balls", cleaning with pipeline pigs, etc. A recent CIP project installed access ports in the Duckett Pump Station force main to allow future access to the interior of the main. The District plans to eventually install access points to other force mains in the system.

A schematic diagram of the District's pump stations and force main system is provided in Appendix E. The five major remote pump stations have SCADA systems that communicate with and can be controlled from the treatment plant SCADA system, as does the Marinwood Pump Station located at the treatment plant. Pump station alarms from these stations are tied into the treatment plant alarm system, which is active 24 hrs/day. Alarms that occur during business hours are monitored by plant operators, alarms that occur after-hours are forwarded to the on-call operator. An example SCADA screen is included in Appendix E.

USA Calls

District staff respond to USA (Underground Service Alert) calls to locate and mark its utilities in the public right-of-way. USA marking can be considered a type of preventative maintenance in that its purpose is to prevent damage to District infrastructure (and possibly prevent spills) resulting from excavations within the right-of-way. USA marking involves a significant commitment of staff resources, as single marking typically requires about 45 minutes. Currently, the District receives over 2000 USA calls annually.

4.3 Training

The District's training activities fall into two categories, safety and job skills. The two are closely related insofar as safety is of prime consideration in performance of any job activity. Annual safety training is conducted by District staff or outside consultants in the areas listed below. One or more topics are covered during monthly training sessions.

- Chemical Hygiene
- CPR / First Aid
- Driver Training
- Electrical lockout/tagout
- Emergency Response
- Fire Prevention/Fire Extinguishers
- Hearing Protection
- Forklift
- Hazard Communication
- Heat Stress
- Respiratory Protection
- Wastewater Pathogens
- Confined Space

Job skills training include both internal “in-plant” and external components. Because the majority of the collection crew members are long-term employees, frequent job skill training is not required. The Collections Manager conducts in-plant training for spill response on an as-needed basis. In addition to spill response, the training includes methods to collect the information required for notification and reporting of spills under the General Order. Informal training is achieved through mentoring of new operators by experienced operators. External training opportunities include participation in the CWEA Technical Certification Program and CWEA conferences, and in some cases, specialized off-site training for specific job skills, such as the National Association of Sewer Service Companies (NASCO) Pipeline Assessment Certification Program (PACP) training. Each employee has a file which documents training received.

Currently (June 2025), the collection system crews include two operators with Grade IV collection system certification, three with Grade III-, and one with Grade I. Three operators are also certified as Grade I plant maintenance technologists. All but one of the collection system operators and the Collections Manager are PACP trained.

4.4 Equipment and Replacement Part Inventories

The District’s Contingency Plan, prepared in accordance with the District’s NPDES permit and RWB Order 74-10 has a detailed listing of equipment used to respond to emergencies and spare/replacement parts intended to minimize equipment/facility downtime. The Contingency Plan is reviewed and updated annually, with the status of the update described in the NPDES Permit Annual Report.

Emergency equipment includes a variety of trailer mounted portable generators (up to 400 kw), portable pumps (up to 12 inch), spare electric submersible pumps that are direct replacements for the pumps used in many of the District’s smaller collection system pump stations, piping and hoses, samplers, warning signs, and other equipment. The emergency response trailer is equipped with most of the small items normally needed in an emergency response situation (see Section 6.3). Major equipment items used for clearing blockages/spill response is described in Section 6.3

Repair parts for the collection system consist primarily of repair clamps in those sizes needed to match District lines. These are listed in the above-referenced Contingency Plan.

5.0 Design and Performance Provisions

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

5.1. Updated Design Criteria and Construction Standards and Specifications

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

5.2. Procedures and Standards

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

5.1 Design Criteria & Construction Standards & Specifications

The District's standards for the design and construction for the installation of sewer system components and for rehabilitation and repair of existing are specified in the District's *Standard Specifications and Drawings*, adopted by the District Board in 2000. The District later teamed with the City of San Rafael to update the standards for sewer laterals. The resulting *Uniform LGVSD-SRSD Standard Specifications for Lateral Sewers* was adopted by the district Board on August 1, 2019. An abbreviated version of the *Standard Specifications and Drawings* document is available to contractors working on lateral lines, as part of the permit issuance process (see Section 11). In 2023, the District contracted with the engineering firm Hazen & Sawyer to review and evaluate the *Standard Specifications and Drawings*, research current standard practices of engineering design and construction, revise and update the *Standard Specifications and Drawings*, and to update the sewer design criteria for single and multi-family residential units and commercial developments to be used by developers for sanitary sewer flow calculations when applying for allocation of sewer capacity. The project is still ongoing as of June 2025.

The District Engineer oversees the design process for capital projects and is responsible for ensuring that District standards are implemented on all District projects. Legal authority for the design and construction standards is provided by District Ordinance Code. See, Table 3-1 for code citations.

5.2 Procedures and Standards

District standards require inspection and testing of new sewers, pump stations, and other appurtenances, and for repair and rehabilitation of these facilities. For small projects, inspections are provided by District staff. For larger projects, inspection services may be provided by the engineering firm involved in the design, a construction management (CM) firm, or by other persons(s) appointed by the District. Testing is normally conducted by the contractor per project specifications, with the inspector observing to verify that all requirements are met.

Legal authority for inspections, testing standards, and for requirements related to maintenance of side sewers and interceptors is provided by the District Ordinance Code. See Section 3, Table 3-1 for Code citations.

6.0 Spill Emergency Response Plan

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.*

The District’s Spill Emergency Response Plan (SERP, formerly referred to as the Sewer Overflow Response Manual) was updated in May 2023 in accordance with the new General Order requirement. The SERP is included in Appendix A-1 of this SSMP. Except for the last three items, the SERP incorporates the above-listed requirements. (The last three items are covered below). The SERP is designed to serve as a field reference document and is therefore written to be both concise and compact. It makes extensive use of flowcharts rather than being “text heavy”. The sections below provide additional detail to supplement the SERP and should be considered part of that document.

6.1 District Notification of Spills

Incidents may be reported by telephone to the District’s main number (415-472-1734), in person at District offices, to the police department/sheriff department (see below) or by cellular phone (e.g., by LGVSD field crew). The telephone notification number is listed in the Marin

County phone book, on utility bills sent to customers, in newsletters and educational materials distributed by the District, and on the District's web site (www.LGVSD.org). The web site's Emergency/Sewer Spills page also provides the mobile phone and pager numbers for collections system staff. For backups, spills and related collection system emergencies, callers are encouraged to continue calling the numbers provided until a person is reached.

During District business hours (6:30 am – 3:00 pm) calls are routed directly to the Collections Manager, who then contacts field crew by cellular phone. During non-business hours, calls to District offices are automatically routed to an answering service. The answering service takes essential information and then notifies District staff using the Call List starting with the on-call line crew worker. If there is no answer to the call or page, calls are made in sequence to the listed District staff via mobile or home numbers until contact is made. The on-call staff person makes a decision regarding the resources needed (including the possible need for an outside contractor), coordinates the response, and calls the Collections Manager. If an emergency notification is made to the Police Department or other agency, that agency will forward information to the District (business hours), or initiate the Call List sequence described above (non-business hours). If it is determined that the spill has occurred in another jurisdiction, the responding party notifies the appropriate agency.

The *LGVSD Incident Report* is used to document the contact and response for each incident that occurs. For notifications that occur during business hours, information on the top half of the form is entered immediately by the Collections Manager (or other call responder). Collection system operators fill in the remainder of the form upon completion of the response. The *LGVSD Incident Report* is considered part of the SERP.

6.2 Spill Response

District collection system operators are the first responders during both business and non-business hours. The operators respond to the incident in accordance with the procedures outlined in the SERP. (For pump stations, operators should also refer to the Emergency Response Plan for that station). In addition to the normal response activities (i.e. clearing blockages and clean-up) operators video the affected sections of sewer line.

Part of the immediate response is to take measures to prevent spills from reaching use surface waters or storm sewers using containment berms or other devices. All reasonable efforts should be made to recover the spilled liquid and clean-up water using the Vactor or by other means.

The SERP procedures include instructions for overflows occurring on private property. In cases where the outside emergency contractor is the first responder (e.g., if hired directly by a homeowner), the contractor will contact the District if the problem is on a District line.

Should an overflow occur inside a home or on private property as a result of a blockage in a District main or District activities, District staff contact TMB, LLC (800-413-2999), or Restoration Management (707-760-6326). These firms provide environmental project management for coordinating the clean-up.

6.3 Impact Mitigation and Monitoring

Impact Mitigation (Clean-up)

Following the initial response outlined in pages 3-1 of the SERP, the responding operators initiate cleanup and assessment, as outlined in pages 3-2 and 3-3. The District has a variety of equipment available for clearing blockages and impact mitigation/clean-up activities, including:

- Vacuum/Flusher trucks (2)
- Hybrid Line Camera/Flusher truck
- Small Flusher Truck for easement work
- Rodder Truck
- Two push cameras and portable rodders
- Emergency Response Trailer - contains Shop Vac, absorbent materials and containment berms, cones/signage, lighted barricades, generator, flashlights, fire extinguishers, air blower, disinfectant (for use on spills to soil or porous material, not surface waters)

Signs, cones, or other means should be used if necessary to prevent public contact with the spill. The cleanup procedure is to contain and remove all spilled material (plus any washdown water). Current District policy is to mobilize most of the above emergency equipment in response to a reported spill. In addition to collection system operators, the maintenance crew and treatment plant operators are available to assist in the spill response if needed.

Spill Volume Estimation

Procedures for estimating the volume of spills are described in pages 3-4 through 3-10 of the SERP. The specific method(s) used to estimate the spill volume and all supporting calculations must be thoroughly documented in the *LGVSD Incident Report* or in a separate document and retained in files. If complex volumetric formulas are used, calculations should be checked by the District engineering staff. Regulatory agencies will scrutinize spill volume estimates closely as part of inspections or enforcement actions.

Spill Monitoring

Spill monitoring requirements from the General Order are summarized on page 4-3 of the SERP, and in Section 2 of General Order Attachment E-1 (starting on p. E1-5). Additional information for sampling is provided in the *Sewer Spill Monitoring Plan*, updated in June 2025 and included in Appendix A-3 of this SSMP. Note that the term “monitoring” is used to describe a number of activities and may not necessarily include sampling.

Visual monitoring is always part of the initial response to determine what immediate actions should be taken, as described on page 3-1 of the SERP. After the initial response and documentation of spill volume, an assessment of possible impacts on surface water should be conducted as part of the spill evaluation process. The City/County storm drain maps can aid in determining if surface water has been impacted. For assistance in shutting down stormwater

pump stations District staff should call City of San Rafael (415-485-3375) or Marin County Public Works (415-473-6530). Where it is safe and practical, surface water in the vicinity of the spill should be inspected visually, with observations recorded on the *LGVSD Incident Report*. Signs of receiving water impacts include tell-tell signs of sewage (solids, grease, paper), abnormal color, fish kills, etc. Photographs should be taken for documentation using the collection crew's digital camera. Each vehicle also has a disposal camera for backup.

For those spills that may imminently and substantially endanger human health and spills that cause fish kills, and if feasible and safe, water quality sampling of surface waters should be conducted. For less serious circumstances, monitoring can be conducted if doing so is likely to provide useful information and does not impede clean-up activities. (Note: Water quality sampling is required for large spills as described below). Ideally, samples should be collected at the point of discharge and at upstream and downstream locations. Samples should be analyzed for ammonia and a bacterial indicator. (The LGVSD lab is set up to perform enterococcus analysis during the discharge season, and total coliform during the reclamation season. The enterococcus analysis is preferred to characterize spill impacts, as it is a more reliable indicator of the presence of sewage. The Marin County Environmental Health Department may require monitoring of additional bacterial indicators). If tidal conditions are such that it is unclear as to what is "upstream" and "downstream" from the discharge location, analysis for electrical conductivity (a measure of salinity) may be useful.

In cases where monitoring is optional, the collection system operators should exercise their best judgment in deciding whether to conduct monitoring, and consult with the Collections Manager, Plant Manager, or General Manager if uncertain. Water quality monitoring should not be given precedence over stopping the spill or protection of public health. However, if sufficient personnel are available, monitoring can be conducted in parallel with these activities or with the clean-up effort. Any monitoring should be conducted in accordance with the *Spill Monitoring Plan* included in Appendix A.

The General Order requires water quality sampling within 18 hours after initial spill notification for Category 1 spills in which 50,000 gallons or greater are spilled to surface water. Any sampling conducted under this requirement should be performed in accordance with the above-referenced *Spill Monitoring Plan*. Results shall be reported in CIWQS and in the Technical Report that must be submitted for Category 1 spills in which 50,000 gallons or greater are spilled to surface waters.

The Marin County Department of Environmental Health's threshold for monitoring is lower than in the General Order. The County's February 2014 document "Sanitation Agency Response during a Sewage Discharge" requires water quality monitoring for Category 1 spills of 1,000 gallons or greater.³ (See Appendix A-3 for this and other requirements in this document). The County has since indicated that this document is under review, but has yet to release an update

³ Although the County's 2014 document set the threshold for monitoring at 1000 gallons, the County may waive this requirement, particularly during wet weather conditions when spills are rapidly diluted and the risk of public contact is lower. The County Health Department should therefore be contacted before applying this threshold.

6.4 Regulatory Notification, Reporting and Record Keeping

Staff Responsibility

The Collections Manager is responsible for reporting spills to the SWQCB via the CIWQS electronic reporting database. Reporting requirements are summarized in Table 6-1 below and in pages 4-1 through 4-3 of the SERP, with greater detail provided in the CIWQS *Enrollee’s Guide to the SSO Database*, referenced in Appendix D.

Spill Categories

Table 6-1 lists the categories of spills as defined in the General Order. These same definitions appear on page 1-1 of the SERP. Correct identification of the spill category is important because reporting requirements vary depending on the spill category. The most critical is a Category 1 spill, which involves spills that reach surface water or “drainage conveyance system” (storm drain). The State Office of Emergency Services (OES) must be notified within 2 hrs of any Category 1 spill of 1000 gallons or more.

Table 6-1. Spill Categories and Definitions

Categories	Definition from pages 24-25 of the General Order
Category 1	<p>A spill of any volume of sewage from or caused by a sanitary sewer system regulated under the General Order that results in a discharge to:</p> <ul style="list-style-type: none"> • A surface water, including a surface water body that contains no flow or volume of water; or • A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly. <p>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. A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill;</p>
Category 2	<p>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.</p> <p>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.</p>
Category 3	<p>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.</p> <p>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.</p>
Category 4	<p>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.</p> <p>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.</p>

Spill Notification, Reporting, and Certification

Attachment E-2 of the General Order has a series of tables that summarize notification, monitoring and reporting requirements associated with each spill category. More detailed information is provided in General Order Attachment E-1. A link to the General Order with Attachments is included in Appendix D of this SSMP. The [Enrollee's Guide to the SSO Database](#) provides guidance in use of the online reporting system (CIWQS).

The following discusses some key points related to notification and reporting. Refer to the above-referenced Attachments E-1 and E-2 of the General Order for full details.

The 2-hr OES notification requirement applies to any Category 1 spill greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water. The 2-hr period starts upon the District “becoming aware” of such a spill. In some cases, such awareness will require field verification.

For both Category 1 and Category 2 spills, a draft spill report must be submitted through CIWQS within three business days of becoming aware of the spill. (This is in addition to the 2-hr notification for Category 1 spills of greater than 1000 gallons).⁴ A Certified Spill Report must be submitted in CIWQS within 15 calendar days of the spill end date. Upon completion of the Certified Spill Report, CIWQS will issue a final spill event identification number.

For Category 3 spills, no draft report is required. Instead, a single (certified) report must be submitted within 30 calendar days of the end of the month in which the spill has occurred.

For Category 4 spills, no draft report is required. Instead, a single (certified) report listing the total volume and number of Category 4 spills must be submitted within 30 calendar days of the end of the month in which the spills occurred. In addition, an annual report “of all recordkeeping” of Category 4 spills must be submitted by February 1st for spills which occurred in the previous calendar year. (Though not clarified in the General Order, “all recordkeeping” presumably includes reporting of individual Category 4 spill volumes).

The 2-hr notification and draft reports can be submitted online by either a designated “Data Submitter” or “Legally Responsible Official (LRO)”. However, only a LRO can certify reports. Currently, the Collections Manager is the designated LRO. Normal practice at LGVSD is for the Collections Manager to conduct all on-line reporting. However, circumstances may require other staff to file the 2-hr notification or draft reports.

Amending Spill Reports

A certified spill report can be amended (or additional information attached) for up to 90 calendar days after the spill end date. After 90 days, the LRO must contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a certified report and provide justification why the additional information was not provided within the 90-day timeframe.

⁴ The CIWQS system allows a user to save a “work in progress” version of the SSO report online. Saving a “work-in-progress” version does not meet the requirement for submitting a draft report.

Private Lateral Spills

CIWQS provides the option for, and the General Order encourages reporting private lateral spills that discharge (or have the potential to discharge) to surface water. These spills are not considered the responsibility of the reporting agency, and in CIWQS, records of private lateral spills are kept separately from records of spills from the agency's own facilities. The District typically does not report private lateral spills but may consider doing so, especially if the property owner does not take necessary measures to respond to and/or mitigate spills. Note that lateral spills that are caused by a failure of or blockage in a District main are considered the District's responsibility, as indicated in the definitions of spill categories in Table 6.1.

No spill Certification

For months during which there are no spills, a "no spill certification" must be submitted in CIWQS by an LRO within 30 days after the end of the month. Note that in General Order Attachment E1 Section 3.7, "no spills" are discussed in the same paragraph as "Category 4 spills" (which are also discussed in Section 3.4) and "Non-category 1 Lateral Spills", all of which have similar reporting requirements.

Annual Report

The General Order requires submission of an Annual Report by April 1 of each year. The report covers the previous calendar year, taking the place of (and expanding upon) the previous General Order's Collection System Questionnaire. The required content for the Annual Report is described in Section 3.9 of Attachment E1 of the General Order (p E1-17 through E-1-19). Much of the required information does not change from year to year; other information is specific to the reporting period (e.g., cleaning footages, spill causes, actions to address system deficiencies).

In addition, Section 5.11 of the General Order (main body) requires the following performance indicators, depicted as 10-year trend charts, be included in the Annual Report:

- Total annual spill volume, per Spill Category
- Total annual number of spills, per Spill Category

The General Order provides [this link](#) for generating these charts and viewing other summary information from data entered in CIWQS.

Record Keeping

The General Order requires that records be maintained for a minimum of five years for all spills, including complaints received by the District that do not result in a spill. See General Order Attachment E-1 Section 4 for specific requirements. The LGVSD Incidence Report was developed to assist staff in creating detailed and complete documentation of spill. A copy is included in Appendix A-3. In documenting spills, particular attention should be given to the method(s) by which spill volumes are estimated.

Records documenting changes to the SSMP since the last certification must be maintained and attached to the SSMP. The Collections Manager has responsibility for maintaining the SSMP Update Log, a copy of which is included in Appendix G of the SSMP.

Post Spill Assessment

As part of the spill documentation and record-keeping process, the Collections Manager conducts an informal post-spill assessment to evaluate any “lessons learned” and determine if additional corrective actions are needed (e.g., increased cleaning frequency, inclusion on “Areas of Concern” list, etc). If warranted, the assessment includes a discussion of the spill and spill response with collection operators. Relevant notes and follow-up actions (if any) are recorded in the spill file.

7.0 Blockage Control Program

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

The procedures must include, at minimum:

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

The District has not developed formal procedures to evaluate whether a blockage control program is needed, since it believes such a program is both prudent and necessary. The blockage program incorporates the earlier SSMP's FOG Program that was developed in collaboration with the neighboring Central Marin Sanitation Agency (CMSA), which provides support and services related to FOG control and other pollution prevention-related activities on a contract basis. CMSA staff conduct inspections and provide other services related to the FOG Program, and report monthly to the District on these activities. The remainder of the blockage control program is implemented by the District through measures described below.

In 2008, the District completed the first cycle of CCTVing the entire collection system, a process that takes approximately four years, and which is an ongoing element of the District's maintenance program. ("PMs" for CCTVing and cleaning are generated automatically by Cityworks. The CCTV process includes an assessment of each line segment, with results recorded in the IT Pipes, which provides standardized codes to indicate condition of the line segment (e.g. grease, roots, debris, excessive I&I, deterioration, etc). Videos and other data from IT Pipes is transferred to Cityworks and is available on both platforms. From other preventative and corrective maintenance activities are also tracked in the Cityworks

7.1 Implementation Plan for Public Education and Outreach:

Implementation of Public Education and Outreach activities is an ongoing process. Elements of that process include:

- Newsletter: The District’s Quarterly Newsletter (The Heron) to customers contains articles and public education messages on topics related to the SSMP, such as FOG control, disposable wipes, and pollution prevention (e.g., proper disposal of mercury containing thermometers). The District’s performance in controlling spills is highlighted in newsletter reports.
- WEB Site: The main page of the District’s web site has public education materials such as the “WARNING! Do Not Flush Disposable Wipes” (text and video). See <https://www.lgvsd.org/> Links to relevant external web sites (e.g. zerowastemarin.org) are also provided. The ZeroWaste Marin site lists “take-back” locations for proper disposal of drugs and pharmaceuticals, sharps and medical waste, household hazardous waste, motor oil/filter recycling, disposal of FOG, and for other materials that may otherwise be improperly disposed of through the sewer system. Outreach material on the District’s web site is periodically changed in an effort to keep the messages “fresh”.
- Board Meetings: District staff and consultant periodically update the District Board on issues related to SSMP implementation. These updates are included in the agenda packages that are publicly posted on the District’s web site. Quarterly collection system reports are prepared by the Collections Manager and presented during Board meetings, which are open to the public, and posted on the District’s web site.
- FOG Outreach: The District operates a FOG Program that regulates the discharge of FOG from commercial food service establishments by requiring the installation and maintenance of grease removal devices, described in greater detail below. Control of FOG from residential sources is achieved primarily through education and outreach efforts that communicate a consistent and ongoing message regarding the impacts of FOG on the collections system and provide information for proper disposal. The District and CMSA distribute FOG scrapers and conducts outreach activities at the County Fair, Farmers Market, etc. The District’s Semi-annual Newsletter regularly contains messages regarding proper FOG disposal. Where excessive amounts of FOG are observed in the sewer lines by Collections staff, the District distributes door hangers and sends letters to homeowners in the area advising on proper disposal methods.
- Plumbers & Contractor Outreach: The District tracks plumbers operating in the service area, and issues annual letters (by email), advising plumbers of the District’s permitting & inspection requirements. Annual emails include outreach materials developed by the District.
- Participation in Regional Organization Outreach: As a member of BACWA, the District supports outreach efforts conducted by the Bay Area Pollution Prevention Group (a BACWA committee). Efforts by that group have included FOG inspector training, a Mercury Training and Outreach Program at dental hygienist and dental assistance schools, and placement of ads in the South Bay and East Bay EcoMetro Guides, and other outreach activities.
- Public Notification of Sewer Line Construction: Door hangers and letters are distributed to local residences and businesses in areas that will be impacted by the District’s construction projects. Homeowners are normally provided with the

opportunity to coordinate replacement of their private service lateral when the District is replacing the main line to which the lateral discharges.

- Lateral Rehabilitation Assistance Program: Ordinance 153, adopted by the District in March 2012, provides funding for private lateral repair/replacement, with reimbursement to the District collected through the local county tax rolls, spread over a 10-year period. The rate of public participation in program has been high. Sewer lateral replacement reduces the number of private lateral spills caused by defects and blockages in those laterals, and reduces inflow and infiltration, which can also cause or contribute to spills.

7.2 Legal Authority for Blockage Control Program

Table 3-1 summarizes the District’s legal authority to prohibit or control the discharge of certain substances and to implement its blockage control measures. As indicated, the Ordinance Code provides broad authority to prohibit and/or control discharges that can cause or contribute to blockages. Additional information specific the District’s FOG controls are provided in the following section.

7.3 FOG Control Program

Legal authority for the FOG Program is provided by the District’s FOG Ordinance No.135, and the related Ordinance 136 that prohibits food grinders in commercial food service establishments, both of which were adopted by the District’s Board on August 17, 2006. The FOG Ordinance cites general authority provided by Ordinance No. 112, adopted in 1995. Links to Ordinance Code provisions corresponding to these ordinances are included in Appendix B.⁵

The FOG Ordinance calls for installation of grease removal devices (GSDs) in all new construction and for major remodels. Requirements for existing food service establishments (FSEs) vary depending on the location of the FSEs relative to identified FOG “hot spots”. This targeted approach to regulating FOG sources is consistent with both State and RWB guidance. In addition to the GSD requirements, the FOG Ordinance provides a detailed framework for permitting, inspections, enforcement, and Program funding. Approximately 70 inspections of FSEs were conducted when the program was initiated in 2007. Waivers were granted for certain FSEs as provided for in the Ordinance. The remaining FSEs were issued permits and are subject to ongoing inspections. Results of inspections and records of interceptor pumping submitted by FSEs are tracked in a FOG database maintained by CMSA.⁶ Example reports from the FOG database are included in Attachment B.

Implementation of the FOG Ordinance required that the District identify hot spots within the collection system. The list of District hot spots is included in Appendix B. The list is

⁵ The links provided in Appendix B are to the District’s Ordinance Code, in which the individual Ordinances adopted over time are organized into a Code format for improved accessibility. Although the numbering system is different, wording of the Ordinance Code is identical to that of the underlying Ordinances.

⁶ The District’s goal to eventually incorporate tracking of FOG inspection in Cityworks.

maintained and updated annually by the Collections Manager based on information from collection system operators, and from analysis of maintenance records and incidence reports. A schedule and maintenance history for routine preventative maintenance of each hot spot has been developed, and is tracked in Cityworks.

Information on disposal of cooking oil from residential sources and for recycling or disposal of cooking oil and FOG from grease interceptors is provided on the [ZeroWaste Marin web site](#).

The FOG Program includes non-regulatory (i.e., outreach/education) elements as described in Section 7.1.

8.0 System Evaluation Capacity Assurance and Capital Improvements

The Plan must include procedures and activities for:

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

8.1 System Evaluation and Condition Assessment

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

8.2. 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 above-ground system components due to larger and/or higher-intensity storm events;*

- Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and
- Necessary redundancy in pumping and storage capacities.

8.3. 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.

8.4. 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

8.1 Condition Assessment

The District’s condition assessment process relies on inspections and other activities that are part of the preventative maintenance (PM) program described in the Section 4, in addition to other assessments performed outside of the PM program. The PM program is designed to proactively identify problem areas and structural deficiencies, and to take appropriate actions before these problems result in blockages, spills, or structural failures. Problem areas are identified using a variety of tools, including visual inspection (primarily for manholes), CCTV inspections, smoke testing, and observations of spill frequency. Inspection results are characterized in both qualitative terms (recommendations, observations and notes) and in qualitative scores that include an overall structural (PACP) rating and ratings for specific categories (debris, grease, roots, offsets or sags I&I, etc). The results are documented in IT Pipes and/or Cityworks.⁷ The information can be viewed on the Cityworks “Collection System Problem Spot Map”, an example of which is included in Appendix E, or printed out in a report.

The condition assessment process also includes activities done outside of the PM Program, such as the vulnerability assessment conducted as part the District’s Integrated Wastewater Master Plan, flow monitoring studies, and assessments and pre-design studies done in connection with specific projects (e.g., CCTV inspections of freeway undercrossings, pump station upgrade projects, etc). These studies include consideration of potential impacts from climate change, primarily those related to sea level rise and increase flooding; but also factors such as potential for increased power outages arising from wildfire or storm events. The findings from these efforts are documented in the reports generated by those efforts.

The condition assessment process is used to inform the planning and budgeting of capital projects. The Collections Manager works closely with the District’s Engineering Department to prioritize and craft Sewer Rehabilitation and other CIP projects to address findings of the condition assessment process. Proposed funding levels for collection system CIP projects are presented in Section 8.4.

⁷ The District transitioned from using the “Areas of Concern” spreadsheet to using Cityworks for condition assessment documentation. The transition is nearly complete as of June 2025.

8.2 Capacity Assessment and Design Criteria

In 2006, an engineering consultant (Nute Engineering) was tasked with assessing collection system capacity issues and recommending capital improvements projects to ensure hydraulic capacity of key sewer system elements under peak flow conditions. Additional assessments and refinements have occurred since that time as described below.

The above-referenced hydraulic capacity assessment is documented in the *Las Gallinas Valley Sanitary District Sewer System Management Plan Capacity Assessment*, Nute Engineering, September 2008. The assessment focused on the District's three key trunk sewer lines that serve the treatment plant. The decision to limit the detailed capacity assessment to those lines was based on the consultant's knowledge of the system (having designed most of the system over the past 50 years), the absence of capacity-related spills, and the fact that the service area is largely "built-out".⁸

Dry weather flows in the trunk sewers were projected on the basis of present and future equivalent dwelling units (EDUs) and an average flow of 200 gallons per day per EDU. A peaking factor was applied to the average flow to calculate a peak dry weather flow. I/I contributions within each of the service areas were estimated by multiplying the area of development by an I/I rate in terms of gallons per acre per day. The I/I rates were estimated on the basis of the age of the sewers and assumptions of per acre I/I contributions. The resulting wet weather flow estimates were not used directly in the capacity analysis, but rather to apportion the design storm flows at downstream pump stations to the line segment under study.

Using the Regional Water Board's Basin Plan Table 4-6 for guidance, a 20-yr "Level A" event (highest level of protection) selected for the capacity analysis.⁹ 20-yr flows at three major pump stations and the plant influent were estimated to be 90% of the actual flows measured at those locations during the December 30-31, 2005 storm (estimated to have a 35-year return frequency based on DWR records for Marin County Civic Center, located in the District's Service Area).¹⁰ The resulting pump station flows were apportioned to the trunk sewers

⁸ Additional sewage flows that may be generated from areas that are not currently built-out (or from redevelopment) will be assessed as part of the planning and approval process for those projects. At present (June 2025), there are no immediate projects in the District's service area that would have a significant impact on the current analysis. Future large-scale projects that could impact the analysis include redevelopment of the Northgate Mall for mixed commercial-residential use. This project, currently in the planning process, would be implemented in Phases over a 10-year period, and could impact flows in the Northgate North Trunk Sewer and Duckett Pump Station. Information regarding this project is available at [this link](#). Future development of the St. Vincent's or Silveira properties on the east side of US101, would impact the lower portions of the Marinwood line. Projects MW-1 and MW-2 in that area include upsizing of the lines to eliminate bottlenecks and provide in-line storage, and would likely accommodate additional flows associated with such development. Alternately, since this area is close to the treatment plant, a parallel line would also be feasible.

⁹ The capacity analysis report cautions that there is not a direct relationship between storm intensity and levels of rainfall induced inflow & infiltration (I/I). A very large storm may have only a moderate impact on I/I rates if preceded by a dry period. Conversely, a moderate storm preceded by a prolonged period of wet weather may generate high levels if I/I. Thus there are inherent limitations to the design storm approach.

¹⁰ The report indicates that the December 2005 event flows may overestimate future sewer flows because of several corrective actions that have been taken since that time.

feeding those stations based on the relative contribution of the line segment to that station's flow. For example, the Terra Linda trunk sewer was assigned 79% of the peak weather flow estimated for the 20-yr storm event at the Duckett Pump Station.

The analysis revealed potential hydraulic restrictions in twelve line segments within the three trunk sewers. These findings do not necessarily indicate that spills will occur at those segments under the designated flow condition, particularly in cases where the lines are deep and surcharging results in increased flow rates and/or upstream storage. The capacity analysis included the following recommendations:

- Install surcharge monitors in manholes along the sewers which have been identified with capacity restrictions.
- Include in the District's CIP projects to increase the size of those sewers identified with capacity restrictions
- Target I/I corrections and sewer rehabilitation projects to sewers tributary to those sewer with identified capacity restrictions.

Based on the results of the 2008 capacity assessment, a strategy for sewer system upgrades that reflecting the following guidance was recommended:

- Target I/I corrections to those sewer systems tributary to sewers found to have potential wet weather capacity restrictions.
- Undertake projects that will maximize system storage so as not to overload the treatment plant and cause blending.
- Make sure the pump station at the downstream end of each major trunk sewer has a high degree of reliability and does not present a restriction to the system.
- In projects designed to eliminate capacity restrictions, consider installing larger diameter sewers which can also provide storage of peak flows.

The strategy recognizes that in some cases (i.e. where no spills are likely to occur), it is preferable to utilize hydraulic bottlenecks to provide upstream storage and thus reduce peak flows to the treatment plant. Thus, although certain projects might not be required pending the outcome of monitoring and/or more detailed analysis engineering analysis, the Capacity Assessment identified twelve capital projects to address the potential capacity limitations. Included in the project descriptions are preliminary estimates of costs and a priority ranking. Table 8.1 summarizes the 2008 report's proposed projects, prioritization, current status, and related comments.

Table 8-1. Summary of 2008 Capacity-Related Capital Projects

Original Project ID	Project Location/Description	Priority	Status	Comment
MW-1	Silveira Field - NWPRR to Treatment Plant	Low	Future	Now referred to as Lower Marinwood Truck Sewer Improvements Project. To be designed simultaneously with the Terra Linda/Duckett/Mulligan/Smith Ranch Force Main Rehabilitation project. In 5-yr CIP starting with design in 2027-28.
MW-2	St. Vincent's Sewer	High	Completed	Was included in 2013 Sewer Main Rehabilitation Project.
MW-3	Highway 101 Segment	Medium	Completed	Eastern portion of project (not section under US101) included in the 2013 Sewer Main Rehabilitation Project. Rehab of section under US101 was included in the Marinwood Trunk Sewer Undercrossing project completed in 2019.
MW-4	Las Gallinas Avenue	Medium	Future	
MW-5	Quietwood Drive	Medium	Future	
MW-6	Appleberry Dr.	Low	Future	
MW-7	Lucas Valley Rd @ Juvenile Hall	Low	Future	
TL-1	Near Duckett Pump Station	High	In pre-design	Significant pre-design work has gone into this complex project over the past decade, and the project has undergone reevaluation with significant changes since the original conception. Recent evaluations have determined that capacity is sufficient for the present and the current project does not involve upsizing of trunk main.
TL-2	Terra Linda Trunk Sewer	Medium	In pre-design	Segment to be replaced by new alignment (T.L.Service Zone Trunk Sewer Improvement. Project)
TL-3	Nova Albion - Elena Circle	High	In pre-design	Segment to be replaced by new alignment (T.L.Service Zone Trunk Sewer Improvement. Project)
SV-1	Replace engine-generator (Mulligan Pump Station)	High	Completed	Completed in 2011. Backup generators also replaced at Duckett and Civic Center Pump Stations (2012).
SV-2	Mulligan Truck Sewer	Medium	Future	In 5-yr CIP starting with design in 2027-28.

Implementation costs for the projects listed in Table 8-1 exceeded the available allocations for collection system capital projects. Between 2010 and 2020, collection system capital projects, to some extent competed for funding with major treatment plant capital projects that were needed to replace equipment nearing the end of their useful economic life, plant modernization, and the need for NPDES Permit-mandated process upgrades and improvements to reduce the frequency of “blending”. To help address the projected shortfall and provide continued funding for both collection system and treatment plant CIP needs, the District Board adopted Proposition 218-compliant multi-year sewer rate increases in 2009, 2015, 2021 and 2023. The increase funding also provided for more staffing and equipment for collection system operations.

Some re-engineering/ refining of projects and realignment of priorities has occurred since the 2008 analysis was conducted. Additional condition assessment, flow monitoring, and hydraulic modelling¹¹ since that time has allowed some projects to be re-prioritized, and has given rise to additional projects (not necessarily capacity-related). As a general rule, projects involving major emergency repairs will take precedence over the scheduled improvement projects.

In 2019, the District embarked upon an Integrated Wastewater Master Plan (IWMP), to help shape future CIP Program. That effort is still in progress. As part of that process, the remaining projects identified in the 2008 analysis will continue to be re-evaluated and modified based on new information or new approaches.

8.3 Prioritization of Corrective Action

In prioritizing projects to address the findings of the condition assessment and capacity analysis processes, a number of factors in addition to the specific structural condition or capacity limitations must also be considered, including:

- Considerations regarding public health & safety and the environment consequences of a failure or spill (e.g., proximity to surface water and/or environmentally sensitive area).
- Impact of the project on I&I reduction.
- Budgeting and timing considerations vis-à-vis other District projects and resources
- Grouping of corrective actions into coherent projects that are large enough to attract highly qualified contractors and maximize the benefit attained for the funds expended.
- Ability to maintain service during construction, including consideration of reasonable “worst-case” flow scenarios. (This may limit construction to dry season).
- Public input and impact on customer impact and expectations.
- Coordination with projects by other agencies.

¹¹ A hydraulic model was developed for the District by Hazen & Sawyer for use in evaluating present and future capacity limitations (e.g. impacts of proposed redevelopment projects), and to support planning future CIP projects. The model was completed in 2025.

- Conditions or constraints imposed by other agencies

The District's \$3 million 2024 Sewer Improvement Project, still ongoing in 2025, included most of the segments with PACP 4 and 5 ratings.

The District Board has the ultimate responsibility for prioritization through the budgeting process. The Board is highly supportive of actions that are necessary to maintain the public's investment in infrastructure, ensure environmental protection, and to identify and plan for future challenges through the rate and budgeting process. The District's 2023-2037 Strategic Plan specifically recognizes that with the recent completion of a major treatment plant project, a major focus of the CIP will be on rehabilitation and/or replacement of major sewers and pump stations.

8.4 Capital Improvement Plan

The District's most recent 5-Year (2025-26 through 2029-30) Capital Improvement Program (CIP), approved by the District Board on June 18, 2025, includes an aggressive level of funding for collection system projects. A summary of these CIP projects is included as Table 8-2. Projects that are currently in design or to be designed in future years may undergo refinement, and some "slippage" of listed projects into subsequent years can be expected, as new information and challenges appear during the design and construction process. Given the Board's current focus on collection system projects and the high level of funding to be provided for specific projects, it can be expected that future funding levels for collection system CIP projects will be lower than those proposed in this 5-year CIP. However, funding for Sewer Main Rehabilitation (~\$1.1/yr) and I&I Reduction (~\$0.52/yr) is more likely to be sustained at these levels.¹²

Funding Sources

District revenues are derived primarily from sewer rates paid by users of the collection system and treatment plant, plus a property tax assessment, which provides an additional \$35/yr per dwelling unit. Other sources of revenue include annexation and connection fees, interest on capital reserves, and sale of recycled water to Marin Water and North Marin Water Company.

In 2004, the District Board raised sewer rates over a 4-year period to finance increased costs for operations, maintenance, capital improvements and to maintain the District's reserve fund. The District completed Proposition 218-compliant processes to increase sewer rates in 2009 (5-yr period), 2015 (5-yr period), 2021 (2-yr period), and 2023 (4-yr period). The current sewer rate (effective July 1, 2024) for a single family residence is \$1,356/month. The rates are scheduled to increase by ~10% in July 2026 and July 2027.

Information on the District's sewer service rates is available on the District web site at <http://www.lgvsd.org/doing-business/rate-info/>.

¹² District Sewer Improvement Projects, which are typically done on a 2-3 year cycle, may be funded from both of these budget categories, since sewer rehabilitation typically also achieves some level of I&I reduction.

Table 8-2. 5-year CIP Projects for Collection System

Ref No.	Mgr.	Project No.	Account	Project Name	Proposed Budget 2025-26	PY Capital Outlay Carryover	FUNDING SOURCES FY 2025-2026					Total Funding Sources	FUTURE YEARS PROJECTED EXPENDITURES				
							Unrestricted Funds	Capital Reserves	Vehicle Replacement Fund	Capacity Connection Fees	Debt Financed and Bonds		Year 2 2026-27	Year 3 2027-28	Year 4 2028-29	Year 5 2029-30	Total 5-Year Expenditures
COLLECTION SYSTEM (INCL. PUMP STATIONS "PS" & FORCE MAINS)																	
18	MC	11200-03	10-420-7105	John Duckett PS Electrical & Terra Linda Trunk Sewer Creek Crossing Improvement Design	225,000	225,000	-	-	-	-	225,000	-	-	-	-	225,000	
19	MC	25460-01	10-460-8104	Terra Linda Highway 101 Undercrossing Sewer Lining Design and Construction	450,000	450,000	-	-	-	-	450,000	-	-	-	-	450,000	
20	MC	20300-09	10-500-8303	Smith Ranch Pump Station Electrical Upgrades and Generator Conversion	1,061,000	946,722	114,278	-	-	-	1,061,000	-	-	-	-	1,061,000	
21	GP	24460-05	10-500-8307	Marin Lagoon PS #2-#9 Electrical System VFD Replacement (Phase 1) ⁽¹⁾	300,000	300,000	-	-	-	-	300,000	-	-	-	-	300,000	
22	GP	25500-01	10-500-8301	SCADA Integration for Pump Stations (Phase 2 split from VFD Replacement)	500,000	500,000	-	-	-	-	500,000	-	-	-	-	500,000	
23	MC	21600-03	10-500-8319	Annual Site Improvement PS - Paving, Fencing, Lighting	75,000	60,000	15,000	-	-	-	75,000	75,000	75,000	75,000	75,000	375,000	
24	MC	26500-01	10-500-9301	Civic Center Pump Station Capacity Upgrade	500,000	-	-	-	-	500,000	500,000	3,000,000	-	-	-	3,500,000	
25	GP	26500-02	10-500-8317	Captains Cove Pump Station Upgrade ⁽¹⁾	18,000	18,000	-	-	-	-	18,000	-	-	-	-	18,000	
26	MC	21300-04	10-500-8305	Pump Station Site Lighting, Safety, & Security Improvements	25,000	16,456	8,544	-	-	-	25,000	-	-	-	-	25,000	
27	MC	24500-05	10-500-8316	Hawthorn Waterproofing Drywell	60,000	60,000	-	-	-	-	60,000	-	-	-	-	60,000	
28	MC	Future		Mulligan PS & 18" TS and Hwy 101 Undercrossing Capacity Upgrades	-	-	-	-	-	-	-	981,000	6,720,000	-	-	7,701,000	
29	MC	22300-01	10-500-8310	Rafael Meadows Pump Station - Fencing, full perimeter	30,000	30,000	-	-	-	-	30,000	-	-	-	-	30,000	
30	MC	20200-01	10-420-8101	Force Main Assessment, Install Ports, Cleaning, Location Marking, & Mapping	258,000	-	258,000	-	-	-	258,000	266,000	274,000	283,000	292,000	1,373,000	
31	MC	Future		Smith Ranch Rd Combined Force Main	-	-	-	-	-	-	-	-	257,500	2,650,000	-	2,907,500	
32	MC	Future		Lower Marinwood TS Capacity Upgrade & Relocation	-	-	-	-	-	-	-	-	257,500	1,590,000	-	1,847,500	
33	MC	24460-06 & 25460-02	10-420-8103	Sewer Main Collection System Rehabilitation Program	1,900,000	948,490	951,510	-	-	-	1,900,000	1,860,000	190,000	1,920,000	288,000	6,158,000	
34	MC	24460-07 & 25460-03	10-420-9101	Sewer I&I Reduction Program	560,000	141	559,859	-	-	-	560,000	930,000	75,000	960,000	80,000	2,605,000	
35	GP	19200-02	10-460-8102	Manhole Frame & Cover Adjustment Allowance	52,000	52,000	-	-	-	-	52,000	54,000	56,000	58,000	60,000	280,000	
36	MC	Planned CIP		Upper Terra Linda TS and Siphon Design and Improvements (capacity)	-	-	-	-	-	-	-	700,000	4,000,000	-	-	4,700,000	
37	MC	Future		Northgate Industrial Park 8" Hwy 101 Undercrossing	-	-	-	-	-	-	-	180,250	1,855,000	-	-	2,035,250	
38	MC	Placeholder		IWMP Pump Station & Force Main Projects (Placeholder)	-	-	-	-	-	-	-	-	-	1,700,000	5,900,000	7,600,000	
39	MC	Placeholder		Sea Level Rise Mitigation Construction at Pump Stations (Placeholder)	-	-	-	-	-	-	-	-	-	-	1,090,000	1,090,000	

Collection System Project Type		
Pump Stations	= Pump Station Capital Asset Projects	
Force Main	= Force Main Sewer Projects	
Collection Sys	= Collection System Sewers Projects	

FINANCED AND BOND PROJECTS																
74	MC	Planned CIP		John Duckett PS & Terra Linda TS Creek Crossing Construction	5,000,000	250,000	250,000	-	-	-	4,500,000	5,000,000	-	-	-	5,000,000

FLEET & EQUIPMENT (To be procured through Vehicle Replacement Fund)																
14	GP	24460-04	10-460-7704	Equipment for Collection System Response (trailers, hoses)	10,000	-	-	-	10,000	-	10,000	10,300	10,700	11,100	11,500	53,600
15	GP	26460-01	10-460-7703	2025 Ford Transit Cargo Camera Van and Camera Equipment	360,000	-	-	-	360,000	-	360,000	-	-	-	-	360,000
16	ML	26600-01	10-600-7701	Mid-Size Pickup Truck for Standby Plant Use	60,000	-	-	-	60,000	-	60,000	-	-	-	-	60,000
17	GP	VERF	10-460-7703	Future Year Fleet Replacement Vehicles and Utility Collection System Trucks	-	-	-	-	-	-	-	100,000	580,000	109,000	112,000	901,000

⁽¹⁾ - Captains Cove & Marin Lagoon projects funded from PY carryover and unrestricted funds in FY 2025-26 and FY 2026-27.

Operating Budget and Funding Plan

The District operates under a formal operating budget prepared by District management and approved by the District Board. Operating expenses for the treatment plant and collection system are broken down into 76 primary categories. Unlike the CIP budget, in general the operating budget does not provide separate accounting for the collection system and treatment plant, although in some cases (e.g., operating supplies, equipment maintenance) the distinction is made. The District's capital and operating budgets are posted on the District web site at <https://www.lgvsd.org/finance-and-budget>.

Additional information regarding resources allocated to the collection system are described in the District's *Wastewater Facilities Status Report*, updated annually in accordance with the District's NPDES permit.

Resiliency Considerations

Resiliency considerations feature heavily in the District's planning and prioritization for future CIP projects and for day-to-day operations. The District's mission statement explicitly recognized the need to "Proactively manage risks created by climate change, sea level rise, fire, earthquakes and flooding". As an example, the recent upgrade of the wastewater treatment plant raised the hydraulic grade line of the secondary treatment process to mitigate impacts of sea level rise. The District's planned multipurpose building, which will house a new laboratory, Board Room and training center, is being constructed with the finish floor raised to accommodate the anticipated 2070-2100 high tide elevation. Similar consideration are taken into account for collection system assets. The proposed 5-year CIP budget allocates \$1.09 million as a placeholder for sea level rise mitigation projects at District Pump Stations (see Table 8-2).

As a member of the North Bay Water Reuse Association (NBWRA), the District is participating in planning efforts with public and private entities in the North Bay to identify, fund, and implement sea level rise adaptation in a collaborative and cost-effective manner. Refer to the March 6, 2025 [NBWRA SLR Adaptation Plan: LGVSD Board Update](#) for additional information on this initiative.

The District responded to Regional Water Board's April 2021 Climate Change questionnaire, which focused more narrowly on wastewater infrastructure and the District's ability maintain continued operation under existing and future climate conditions. Issues specifically identified in the Questionnaire included a) sea level rise, b) groundwater rise, c) changing climate and weather (high temperature, rainfall intensity), and d) power outages and wildfires. The District's responses to that questionnaire include a discussion of these vulnerabilities and specific measures being taken by the District to mitigate those vulnerabilities.

9.0 Monitoring, Measurement, and Program Modifications

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

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

9.1 Adaptive Management

The City's SSMP is intended to be a living document that, at a minimum, is updated at the frequency specified in the General Order. The SSMP Audit (Section 10) is used as the primary aid to evaluate SSMP effectiveness, and along with other assessment tools such as results of CCTV inspection, to guide any needed changes to operational procedures and activities. The specific performance indicators tracked by the District are described in the following section.

9.2 Performance Indicators

A number of performance indicators are tracked by the District for purposes of evaluating the long-term effectiveness of the SSMP elements described in this Plan. Some of these indicators could be expected to relate directly to specific elements or O&M activities, whereas others relate to multiple activities or program effectiveness as a whole. For example, it may be possible to correlate the number of spills caused by blockages with the total annual footage (or multi-year cumulative footage) of sewer lines cleaned under the District's preventative maintenance program (see Section 4).

Table 9-1 lists the quantitative indicators that are currently tracked by the District. The data for these indicators appear in Table 1 of the tri-annual SSMP Audit, included in Appendix F. Selected spill indicators are also trended in charts accompanying the audit report. Certain performance measures related to maintenance activities are tabulated and charted in the Collections System Reports prepared quarterly by the Collections Manager for the District Board. An example copy of the report is included in Appendix D.

Table 9-1. SSMP Performance Indicators

Indicator
Number of spills (total)
Wet season spills*
Dry season spills*
Number of spills (by volume range)
< 10 gal
10 – 99 gal
100 – 999 gal
1000 – 9999 gal
≥10,000 gal
Volume reaching waters of the State
Volume not contained but not reaching waters of the State
Volume recovered
Net volume (total minus recovered)
Number of spills per 100 mile of sewer per year
Volume of spills per 100 mile of sewer per year
Total Volume conveyed to the plant (million gal)
Total volume spill / Total volume conveyed, gallons / million gallons
Number of spill (by cause)
Blockages:
Roots
Grease
Debris
Debris from Laterals
Animal Carcass
Construction Debris
Multiple causes
Infrastructure failure,
Inflow & Infiltration
Electrical Power Failure
Flow Capacity Deficiency
Natural Disaster
Bypass
Cause Unknown
Number of locations with multiple spills
Average Emergency Response Times, minutes
Business Hours
Notification to arrival on site
Notification to complete clearance
Non-business hours
Notification to arrival on site
Notification to complete clearance
Number of locations with multiple spills
Maintenance activities (lineal ft/yr)
ITV (Camera truck)
CJET (Flushing with camera truck)
CJET2 (Flushing with flusher truck)
ROOTCT (Rodding)
IRO (TVing with push camera)
SMOKE (Smoke testing)

In evaluating performance indicators for which there are a very low number of events (e.g. the number of annual wet weather spills), it is important to recognize that the process may yield meaningful results only over the long term, and may show significant variability on a year-to-year basis.

The State Water Board's web-based [Interactive SSO Report](#) is a convenient way to access spill information reported in CIWQS. The Report's user interface allows one to select specific spills, spills of a certain type (e.g., Category 1), or all spills, for any specified period of time. To identify spills reported by the District, it is only necessary to enter any one of the following three identifiers, the remaining boxes can be left blank

Sewer System Agency Name: Las Gallinas Valley Sanitary District

Collection System Agency Name: Las Gallinas CS

WDID Number: 2SSO10147

The State Board web site also has a [Sanitary Sewer Spill Incident Map](#) that allows one to see spill locations. Clicking on the spill marker brings up specific data regarding that spill.

9.3 SSMP Updates and Modifications

It is the District's intention that the SSMP remain a living document, and that it be regularly updated to reflect program or organizational changes, new regulatory requirements, and other changing conditions. Methods to ensure this objective is met include:

- The Collections Manager is tasked with overall responsibility for maintaining and updating the SSMP.
- The regulatory consultant's annual contract includes a task for providing ongoing technical support for collection system activities, including SSMP maintenance, participation in the SSMP audit process, tracking regional developments and other related work. The consultant coordinates with the Collections Manager for any changes in the SSMP.
- A number of the activities described in the SSMP reflect ongoing District programs for which the review and update process is well established. Examples include preventative maintenance (PM) measures, staff training, outreach, inspection and testing. The District is accustomed to requirements that require annual review and updating of key documents (e.g. NPDES permit requirements for annual review/update of the treatment plant O&M Manual and Contingency Plan).
- The General Order requires that the District conduct internal audits of the SSMP at least every three years as described in Section 10.0 below.
- In addition to periodic audits, the General Order requires that the SSMP be updated every six years. The most recent update occurred in May 2020, and was approved by the District Board in October 2020 via Resolution 2020-2201 (see Appendix D). Minor revisions and updates are typically made on an ongoing (e.g. bi-annual) basis with approval of the Collections Manager. A log of all SSMP changes is maintained in Appendix G.

10.0 Internal Audits

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

The LRO shall submit an audit Report in CIWQS. The report will be viewable by Water Board staff only. Sewer system operators must be involved in completing the audit, which at a minimum must:

- Evaluate the implementation and effectiveness of the Enrollee's SSMP 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.*

The District's audit format was adapted from a document originally developed by the BACWA Collection System subcommittee. In addition to identifying and correcting deficiencies (or specifying the schedule for such correction), the audit tracks the effectiveness of implementing the SSMP elements using the performance measures listed in Table 9-1. The audit also includes a qualitative evaluation of the overall effectiveness of implementing SSMP elements. Finally, the audit describes improvements to the collection system completed since the last audit, and those proposed for the upcoming years.

In accordance with the General Order, audits must be completed every three years. The end of the next 3-year audit period is August 2, 2027. The audit report is due within six months of that date (i.e., February 2, 2028). A copy of the several most recent SSMP audit is included in Appendix F.

11.0 Communication Program

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

- *The public for:*
 - o *Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and*
 - o *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:*
 - o *System operation, maintenance, and capital improvement-related activities.*

Public Communication

The public is notified of spills and discharges that result in closures of public areas (including streets and surface waters) by erecting cones and barricades, and by posting warning signs in accordance with the Spill Emergency Response Plan. These necessary equipment and signage are kept in District vehicles and/or the emergency response trailer.

Information on individual spills is available to the general public through a GIS-based application on the [State Water Board's Sanitary Sewer Spills web site](#).

The entire SSMP has been posted on the District's web site at <http://www.lgvsd.org/document-library/sanitary-sewer-management-plan-ssmp/> with a provision for public feedback (by phone or email) to District staff. The District uses the web site as one method to communicate timely information on District activities. Emergency information can be posted to the site in near real-time.

Communication with Satellite System Owners

Several small private collection systems discharge to the District's collection system. The District communicates with private system operators through the Quarterly Newsletter, and where necessary, through direct correspondence.

Outreach to Plumbers and Building Contractors

The District's public outreach efforts for plumbers and building contractors include both educational and regulatory elements.

Because the actions of plumbers and sewer contractors working on private systems can result in spills from either the private or public systems, it is essential that those contractors be aware of management practices to prevent such occurrences. To that end, the District annually communicates with all plumbing contractors in its service area advising them of proper procedures when cleaning laterals, to contact the District if their actions push debris into a District line, and also of their responsibility to obtain a permit when connecting to a District line or performing work on a private lateral. Contractors are instructed to notify the District of any spills that occur on District lines or as a result of conditions in those lines and provided

a copy of a form that can be faxed or emailed to the District. (This outreach to plumbing contractors was originally done by letter but is now done by email.) An outreach brochure was also developed by the District, a copy of which is included in Appendix E. Copies of the brochure are carried in District trucks for distribution to contractors and the public. The list of plumbers/sewer contractors in the District’s service area is updated yearly.

The District requires contractors that work on District mainlines or private laterals (construction, repair or replacement) to obtain a no-cost Permit and have work inspected by District staff. A copy of the one-page permit application is included in Appendix E. In conjunction with the Permit, the District provides a “short-form” version of the District’s standard plans and specifications that cover technical requirements for construction of laterals, backwater prevention devices, and residential sewage pumping systems. The specifications include allowable materials, methods of construction, and testing requirements.

The District also conducts outreach and education directed toward residential customers and the general public. Efforts include door hangers and letters informing residents when work or smoke testing is to be performed on the sewer line, door hangers and other “giveaways” with messages regarding proper disposal of FOG and other products, participation at public events (County fair, etc.) and a grammar school education program. These efforts are described in greater detail in the District’s Annual Pollution Prevention Report, submitted to the RWB each February.

12.0 SSMP Approval and Certification

SSMP elements were originally completed and certified according to the schedule included in the Order 2006-003-DWQ. A resolution approving the SSMP was adopted by the District Board at its June 25, 2009 meeting. A copy of the resolution, and of the subsequent resolutions approving the October 2013 and May 2020 updates are included in Appendix D. (The SSMP updates made in 2016 and 2018 were deemed to be of a minor nature such that recertification was not required). This 2025 SSMP Update is scheduled for approval by the District Board at the July 17, 2025 Board meeting.

The new General Order requires that the SSMP be updated and certified every six years. For LGVSD (serving a population between 100,000 and 10,000), the update/certification must be submitted by August 2, 2025. The updated SSMP itself must also be uploaded into CIWQS by that date.¹³ The 2025 SSMP Update will also be posted on the District’s web site.

¹³ If electronic document format or size capacity prevents the electronic upload of the Plan, the LRO shall report an electronic link to its SSMP posted on its own (i.e., the District’s) website.