Sewer System Management Plan

Updated July 2025

Approved by the Novato Sanitary District Board of Directors
July 14, 2025

Novato Sanitary District
WDID 2SSO10162

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LIST OF ABBREVIATIONS

ABAG	Association of Bay Area Governments
BACWA	Bay Area Clean Water Agencies
BPD	Backflow Prevention Device
BMP	Best Management Practices
Cal-OES	California Office of Emergency Services
CCTV	Closed Circuit Television
CDFW	California Department of Fish and Wildlife
CIP	Capital Improvement Plan or Program
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
CPC	California Plumbing Code
COF	Consequence of Failure
CMSA	Central Marin Sanitation Agency
CSMP	Collection System Master Plan
CSRMA	California Sanitation Risk Management Authority
CSS	Collection System Superintendent
CSW	Collection System Worker
CWEA	California Water Environment Association
DGM	Deputy General Manager
District	Novato Sanitary District
EBMUD	East Bay Municipal Utility District
ESS	Environmental Services Supervisor
FOG	Fats, Oils and Grease
FSE	Food Service Establishment
FSM	Field Services Manager
GM-CE	General Manager – Chief Engineer
gpm	gallons per minute
GIS	Geographic Information System
GWDR	General Waste Discharge Requirements
hp	Horsepower
ICOM3	The District's computerized maintenance management system
I/I	Infiltration and Inflow
LOF	Likelihood of Failure
LRO	Legally Responsible Official
LS	Laboratory Supervisor
MGD	Million Gallons per Day
MS4	Municipal Separate Storm Sewer System
NASSCO	National Association of Sewer Services Companies
NMWD	North Marin Water District
NPDES	National Pollutant Discharge Elimination System
NSD	Novato Sanitary District (District)
NTP	Novato Treatment Plant
O&M	Operation and Maintenance
PACP	Pipeline Assessment Certification Program
R/R	Rehabilitation and Replacement

SCADA	Supervisory Control and Data Acquisition
SERP	Spill Emergency Response Plan
SFRWQCB	San Francisco Regional Water Quality Control Board
SSMP	Sewer System Management Plan
SWRCB	State Water Resources Control Board
WDR	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant

1. SEWER SYSTEM MANAGEMENT PLAN GOAL AND INTRODUCTION

1.1 Element 1 Regulatory Requirement

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

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

- Regulatory Context
- Sewer System Management Plan Update Schedule
- Sewer System Asset Overview

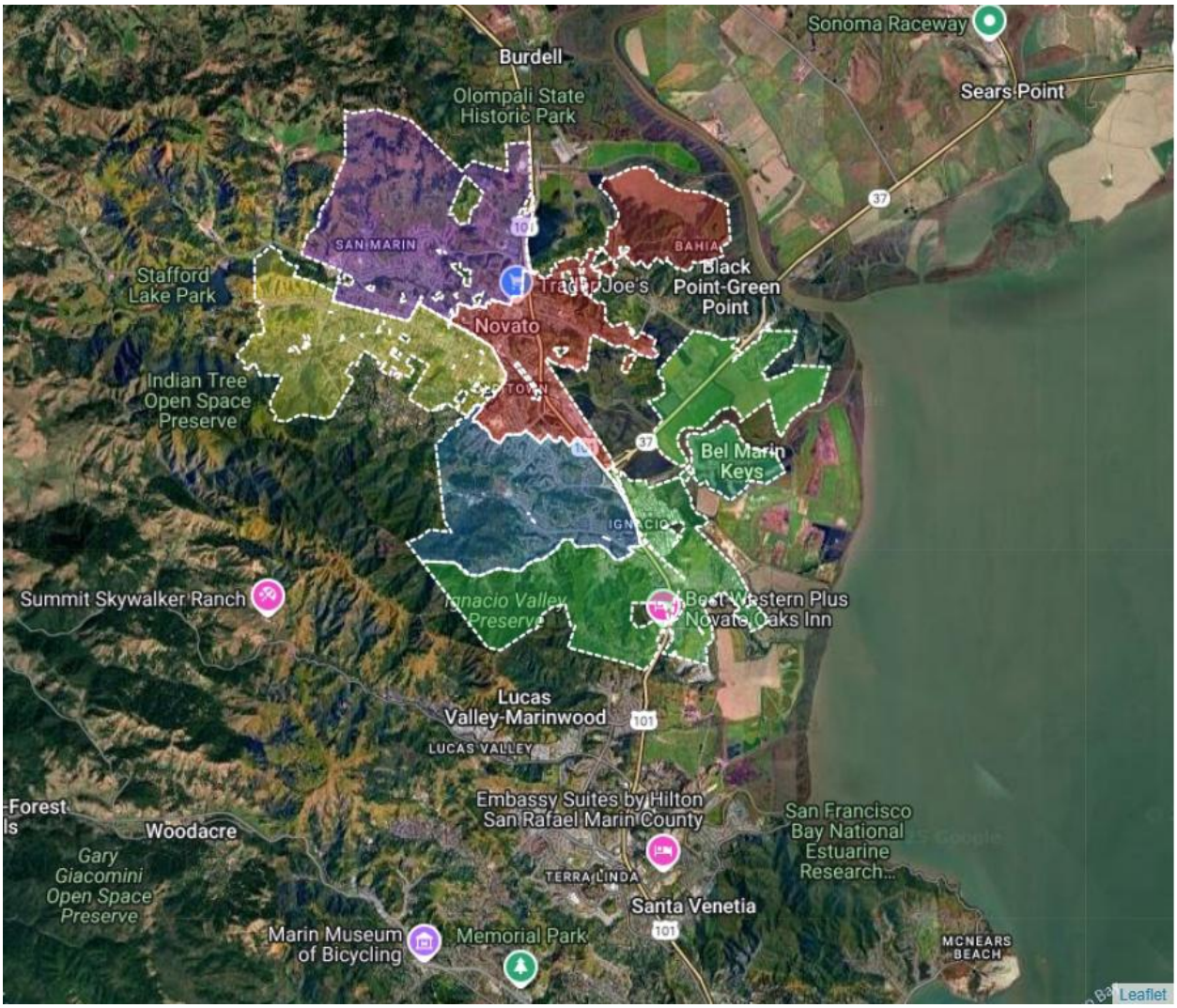
1.2 District Background and Service Area

The Novato Sanitary District (NSD or District) was formed on October 5, 1925, as the Marin County Sanitary District #6 to safeguard public health and protect and enhance the environment of the community of Novato, California. The enabling legislation for the formation of the District, as well as the District's legal authority resides in the Sanitary District Act of 1923, Chapter 1, Division 6, comprising Sections 6400 through 6830 of the Health and Safety Code of the State of California.

In February 1978, the District was renamed the Novato Sanitary District to affirm its commitment to the City of Novato (incorporated 1960), and the Novato community. Today, the purpose of the District is to provide wastewater collection, treatment, reuse, and disposal services for the entire Novato community, with an estimated population of 60,000. In addition, the District is also responsible for refuse disposal, recycling, and green-waste collection through its franchise collection entity, currently Recology Sonoma Marin. **Figure 1-1** is a map depicting the District's service area boundary; an electronic copy will be uploaded to CIWQS by December 31, 2025, as required by the WDR.

The District (in conjunction with the North Marin Water District), also initiated a recycled water program whereby a portion of the District's secondary effluent is imparted a high level of additional treatment to meet California Title 22 recycled water standards for golf course and landscape irrigation. In 2011, this program was expanded, and the construction of new facilities was initiated at the site of the District's Novato Treatment Plant to provide additional recycled water production capability.

FIGURE 1-1: NOVATO SANITARY DISTRICT SERVICE AREA AND ELECTORAL BOUNDARIES



1.3 Goal of the District's SSMP

Consistent with its purpose, the District is committed to a policy of sound, cost effective asset management and to a process of continuous improvement in operational reliability and flexibility, for its sanitary sewer system. Accordingly, the District is dedicated to achieving the following goals for its SSMP:

- To properly manage, operate and maintain all parts of the wastewater collection system it owns and controls in a safe, sound, and cost-effective manner
- To provide adequate capacity to convey base and peak wastewater flows in its system
- To minimize the frequency of occurrence of sewer spills in its system
- To mitigate the impacts of any spills that may occur in its system
- To evaluate and analyze both current and potential maintenance practices and performance in an on-going effort to operate efficiently and to effectively reduce sewer spills.

This SSMP document provides a summary of: (a) the District's objectives, plans, practices, and procedures to meet these goals, and (b) its activities and core documents as they relate to each of the elements required to be addressed in the SSMP.

1.4 Regulatory Context

By letter dated July 7, 2005, and pursuant to Section 13267 of the California Water Code, the San Francisco Bay Regional Water Quality Control Board (SFRWQCB) notified the Novato Sanitary District (District) to prepare a SSMP. The District developed its original SSMP in 2008 to address the SFRWQCB requirements. In 2006, the State Water Resources Control Board (SWRCB) enacted Order No. 2006-0003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems" (commonly referred to as the "SSO WDR" or "GWDR") and the subsequent update of the Monitoring and Reporting Plan (MRP) WQ 2013-0058-Exec. The SWRCB action applied to all public wastewater collection system agencies in California with greater than one mile of sewers, including the District, and mandated the development of an SSMP and the reporting of spills using an electronic reporting system, the California Integrated Water Quality System (CIWQS). These two SWRCB requirements were replaced on December 6, 2022, by SWRCB Order WQ 2022-0103-DWQ, "Statewide Waste Discharge Requirements, General Order for Sanitary Sewer Systems" (WDR or General Order), which became effective for all enrolled agencies on June 5, 2023. The District has updated its SSMP to maintain compliance with the SSMP requirements in the 2022 General Order.

In addition, the District must also comply with the collection system requirements contained in NPDES permit no. CA0037958, effective September 1, 2020.

1.5 Sewer System Management Plan Update Schedule

The reissued WDR specifies new requirements for the auditing and updating of the enrollees SSMP. For the District, an internal audit must be completed, and an Internal Audit Report prepared covering the three-year period ending August 2, 2024. The Audit Report must then be completed, certified, and uploaded to CIWQS no later than February 2, 2025 (the District completed this audit and submitted its audit report on January 28, 2025. Upon completion of the audit, the District must update the SSMP (this document) along with readoption by the District Board no later than August 2, 2025. Any changes to the SSMP made subsequent to adoption will be documented in the Change Log, attached as **Appendix A**.

The next three-year audit period covers the period from August 3, 2024, through August 2, 2027. The Internal Audit Report must be completed, certified, and uploaded to CIWQS no later than February 2, 2028. Thereafter, the internal audits must be completed every three years on the same schedule. Failure by the District to comply with the new audit schedules requires the District to update CIWQS and notify the SFRWQCB with a justification for the failure to conduct the audit and a schedule for the completion. However, this does not change the required audit schedules for the future.

The first SSMP revision under the reissued WDR must be publicly considered and approved by the District District Board and uploaded and certified to CIWQS no later than August 2, 2025. Thereafter, the updates must be completed every six years from August 2, 2025.

1.6 Sewer System Asset Overview

The District owns and operates a wastewater collection system, a municipal wastewater treatment plant, and an effluent discharge outfall. The wastewater treatment plant (WWTP) is the Novato Treatment Plant (NTP), which is currently designed for an average dry weather flow of 7.05 million gallons per day (MGD). This plant was significantly upgraded and placed into service in 2010. Also, in 2010 the District entered into an agreement with Veolia Water to operate the District's treatment facilities on a contract basis.

The District's wastewater collection system collects and transports wastewater flows to the WWTP through a series of gravity sewers and interceptors, pump stations, and force mains. The combined collection and conveyance systems include a total of about 235 miles of sewers with about 212 miles of gravity sewer lines ranging from 6-inch to 48-inch diameter (including 14 siphons), about 23 miles of force mains, 5 main pump stations, and 33 lift stations. The pump stations vary in capacity from about 50 gallons per minute (gpm) to about 5 MGD, and individual pumps range from 3 to 90 horsepower (hp). There are no known structures diverting stormwater to the wastewater collection system.

The District has approximately 21,500 service connections (customers), of which about 93 percent are residential and the remainder commercial, industrial, or institutional. The District is only responsible for District-owned sewer facilities; private property owners are responsible for operation and maintenance of all portions of service laterals from the building to the connection to the District sewer.

There are also three small, low-flow collection systems owned by others that are tributary to the District collection system. These tributary systems are:

- Los Robles Mobile Home Park
- College of Marin Indian Valley Campus
- Coast Guard housing complex

2. ORGANIZATION

2.1 Element 2 Regulatory Requirement

The Sewer System Management Plan (SSMP) must identify:

- The name of the Legally Responsible Official as required in Section 5.1 of the General Order;
- The position titles, telephone, and email addresses for management, administrative, and maintenance positions responsible for implementing specific SSMP 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 Board and other agencies as applicable.

2.2 Organizational Structure

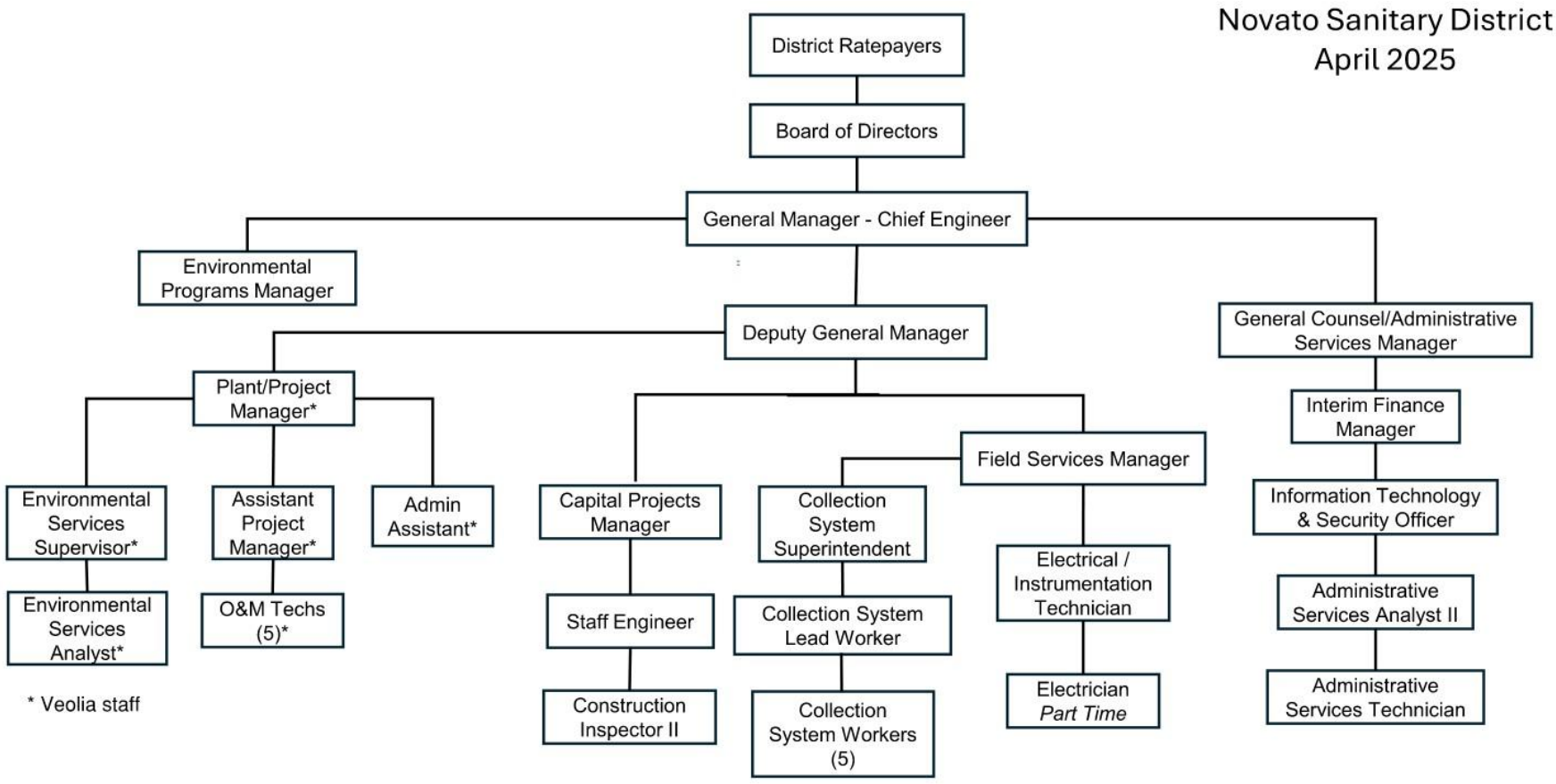
The District's organizational structure is designed to adapt to the community's needs as well as changing regulatory needs and priorities, while being able to respond effectively to critical situations. Given the relatively small size of its organization (currently, a total staff of 22, and about 20 fulltime employees), the District attempts to employ a relatively flexible staffing structure. An Organizational chart reflecting the District's current staffing structure is provided in **Figure 2-1**. Key positions include:

- Board of Directors: Five-member governing body of the District. Members are elected at-large from the community, over staggered two-year periods; each member serves a four term.
- General Manager-Chief Engineer (GM-CE): Appointed by and reports directly to the Board of Directors. The GM-CE conducts the day-to-day business of the District.
- Deputy General Manager (DGM): Manages the Field Services Manager, Project/Plant Manager, and Engineering Staff. Assists the GM-CE in the day-to-day operations of several departments. DGM is hired by and reports directly to the GM-CE.
- Field Services Manager (FSM): Manages the Collection Systems Superintendent and the Field Services Department, including Reclamation and Construction. Reports directly to the DGM.
- Collections Systems Superintendent: Supervises the Collections Systems section. Reports directly to the FSM.
- Environmental Services Supervisor: Supervises the laboratory and the pretreatment/FOG program. A Veolia Water employee who reports directly to the DGM.

2.3 Legally Responsible Official

The General Manager-Chief Engineer is the District's authorized representative to CIWQS to certify spill reports and submit required reports and documents. The GM-CE has delegated authority to the Deputy General Manager and the Collection Systems Superintendent as additional authorized representatives to prepare, submit and certify electronic reports.

FIGURE 2-1: ORGANIZATIONAL CHART



2.4 Description of General Responsibilities

As mentioned above, the District adopts a flexible staffing structure to respond effectively to spills and critical situations. A description of the District's current staffing structure as it relates to the roles of various staff from a SSMP perspective, and spill reporting and response requirements, is outlined below.

Board of Directors: Establish policies and provide needed resources to meet all public health and environmental laws and regulations in a safe, effective and efficient manner. Attend emergency meetings if required.

General Manager-Chief Engineer (GM-CE): Responsible for all District day-to-day operations and activities, including reporting to regulatory agencies and other external organizations, including the updating and auditing of this SSMP. Interprets policy provided by District Board, plans District strategy, leads staff, prepares and submits the District budget (including the Capital Improvement Program (CIP) and budget) to the District Board, allocates resources, authorizes outside contractors to perform services, and acts as the District's public information officer.

In the event of a spill or other critical situation:

- Receives information from various staff in the field and office
- Makes resources available to respond to situation
- Provides timely reports and information updates to the District Board
- Arranges emergency meetings if required
- Verifies that all regulatory reporting requirements are met

The GM-CE is a designated legally responsible official (LRO) for purposes of spill reporting.

Deputy General Manager (DGM): May function as the GM-CE in his/her absence. Prepares the CIP, expenditure projections, and budget and submits to GM-CE. Manages preparation of wastewater collection system studies and planning documents by outside consultants or District staff; manages implementation of CIP projects; documents new and rehabilitated assets, and coordinates development, implementation, and updating of the SSMP. Provides oversight and management to field services including new construction and rehabilitation of the collection system facilities.

In the event of a spill or other critical situation:

- Receives information from various staff in the field and office, and make immediate reports to GM-CE
- Provides field assistance in coordinating District response
- Attends emergency meetings as directed by the GM-CE
- Assists the GM-CE in verifying that all reporting requirements are met

The DGM is a designated LRO for purposes of spill reporting.

Field Services Manager: May act on behalf of the GM-CE or DGM in his/her absence. Serves as the District's resident engineer; coordinates capital improvement, maintenance and special engineering projects with

consulting engineers and construction contractors and other public agencies. In terms of collections and pump stations operation, can serve as a back-up to the Collection System Superintendent.

In the event of a spill or other critical situation:

- Receives information from various staff in the field and office, and make immediate reports to GM-CE and DGM
- Provides field assistance in coordinating District response
- Attends emergency meetings as directed by the GM-CE or DGM
- Assists the GM-CE and DGM in verifying that all reporting requirements are met

Collections Systems Superintendent (CSS): Provides direct supervision to Collections System Department. Manages field operations and maintenance activities for the collection system including line cleaning, televising, inventory and evaluation of the collection system and recordkeeping of all maintenance activities into the District's collection system computerized maintenance management system. Provides periodic as well as timely updates to the FSM, DGM, and the GM-CE. Assists in preparing and implementing contingency plans. Prepares and implements contingency plans. Trains and supervises collections system crew consisting of Leadworker and Collection System workers.

In the event of a spill or other critical situation:

- Investigates spills with immediate reporting to FSM and DGM. Provides immediate reporting to regulatory agencies, GM-CE, DGM, and FSM
- Leads emergency response to stop the spill or mitigate its impacts
- Handles all follow-on reporting requirements with regulatory agencies
- Attends emergency meetings as directed by the FSM, DGM, or GM-CE
- Verifies that all reporting requirements are met

The CSS is a designated LRO for purposes of spill reporting

Collection System Staff: Includes a Collection Systems Leadworker and six Collections Systems Workers. Staffs field operations and maintenance activities for the collection system including line cleaning, televising, and recordkeeping of maintenance activities for the District's collection system computerized maintenance management system. Performs preventive maintenance activities in the collection system. Receives notification and responds to sewer blockages and stoppages.

In the event of a spill or critical situation:

- Receives notification of spills or critical situations in collection system
- Mobilizes and responds to such notification
- Deploys sewer cleaning equipment, by-pass pumps, portable generators, confined space equipment (if required), etc. as required by training, or as directed
- Under the direction of the CSS, or Collections Leadworker, performs all required activities to stop, mitigate, or eliminate the situation

The Collection Systems Leadworker is a designated data submitter for purposes of spill reporting.

Staff Engineer: Assists in preparation of wastewater collection system studies and planning documents by outside consultants. Reviews adequacy of planning, design, and construction of developer-initiated sewer lines prior to transfer to District ownership. Generates permits for construction of private sewer lines within the District boundaries. Reviews video from televising of District lines for QA/QC purposes. Prepares/reviews as-built documentation for new and rehabilitated assets. Works as required on applicable regulatory permits and support all aspects of SSMP program. Maintains and prepares updates to the District's construction standards, and District Infrastructure Mapping and Asset Inventory. Maintains the District's collection system Computerized Maintenance Management System (CMMS) to ensure that the system functions adequately. Assists Collection System Superintendent in modifying and/or generating new data entry forms and formats for the system.

Construction Inspector: Inspects spot repair type work in the collection system to ensure that rehabilitated work meets District standards. Works with field crews to provide construction related direction during emergencies when outside construction contractors are involved. Works with staff engineer to review adequacy of planning and design of developer initiated projects and inspects construction of such projects for adequacy against District construction standards before transfer to District ownership. Provides construction inspection of private sewer lines within the District boundaries to verify that all work is performed according to District standards.

Environmental Services Supervisor (ESS): The ESS is a contracted position via the District's contract wastewater treatment plant operator, Veolia Water. The ESS supervises the laboratory and administers the pretreatment and FOG programs, providing oversight of industrial facilities and food service establishments.

In the event of a spill or other critical situation:

* Provides technical assistance for spill sampling events, if required
* Coordinates with Marin County Environmental Health staff
* Ensures chain-of-custody protocols are met for samples associated with a spill
* Assists the DGM in verifying that all reporting requirements are met

2.5 Responsibility for SSMP Implementation

The General Manager- Chief Engineer is responsible for overseeing the overall implementation of the SSMP. Various individuals within the District's organization are responsible for implementing one or more of the SSMP sections. **Table 2-1** summarizes the responsibilities for SSMP implementation by section.

TABLE 2-1: RESPONSIBILITY FOR SSMP IMPLEMENTATION BY SSMP SECTION

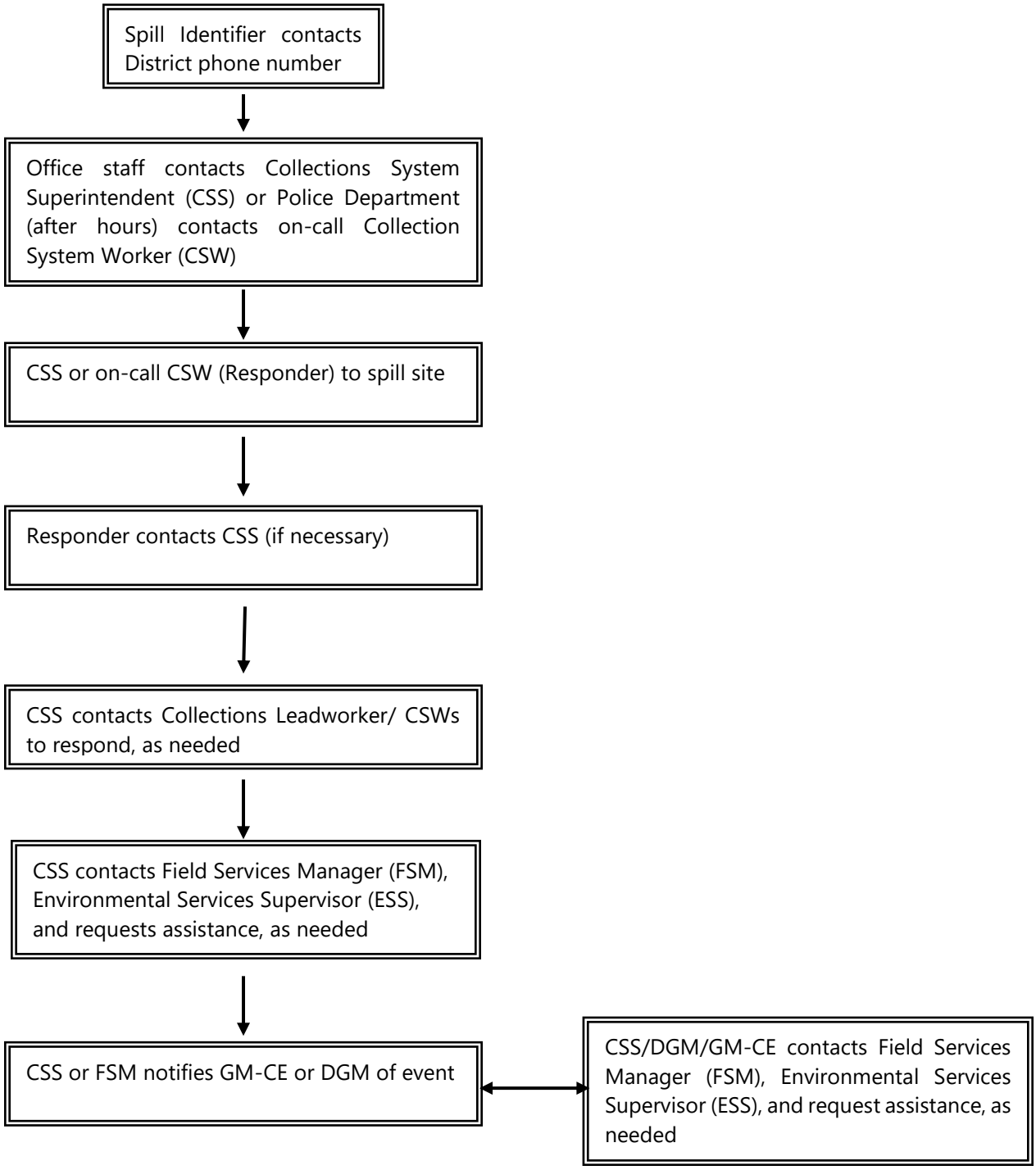
SSMP SECTION NO.	SSMP SECTION NAME	RESPONSIBLE PERSON(S)*
Section One	Goal	General Manager-Chief Engineer
Section Two	Organization	General Manager-Chief Engineer
Section Three	Legal Authority	General Manager-Chief Engineer
Section Four	Operation and Maintenance Program	Collection System Superintendent, Field Services Manager Staff Engineer
Section Five	Design and Performance Provisions	General Manager-Chief Engineer, Deputy General Manager, Field Services Manager, Staff Engineer, Construction Inspector
Section Six	Spill Emergency Response Plan	Collection System Superintendent
Section Seven	Sewer Blockage Control Program	Collection System Superintendent, Deputy General Manager, Environmental Services Supervisor
Section Eight	System Evaluation, Capacity Assurance and Capital Improvements	General Manager-Chief Engineer, Deputy General Manager, Staff Engineer
Section Nine	Monitoring, Measurement, and Program Modifications	General Manager-Chief Engineer, Deputy General Manager, Staff Engineer
Section Ten	Internal Audits	General Manager-Chief Engineer, Deputy General Manager, Collections System Superintendent
Section Eleven	Communication Program	General Manager-Chief Engineer

* Staff can be reached by phone at (415) 892-1694 or email at info@novatosan.com.

2.6 Chain of Communication for Responding to Spills

The chain of communication for responding to a spill is shown in **Figure 2-2.** Detailed information on the District's overflow response procedure can be found in Element 6, Spill Emergency Response Plan and in the District's full Spill Emergency Response Plan included in **Appendix D**.

FIGURE 2-2: CHAIN OF COMMUNICATION FOR RESPONDING TO SPILLS



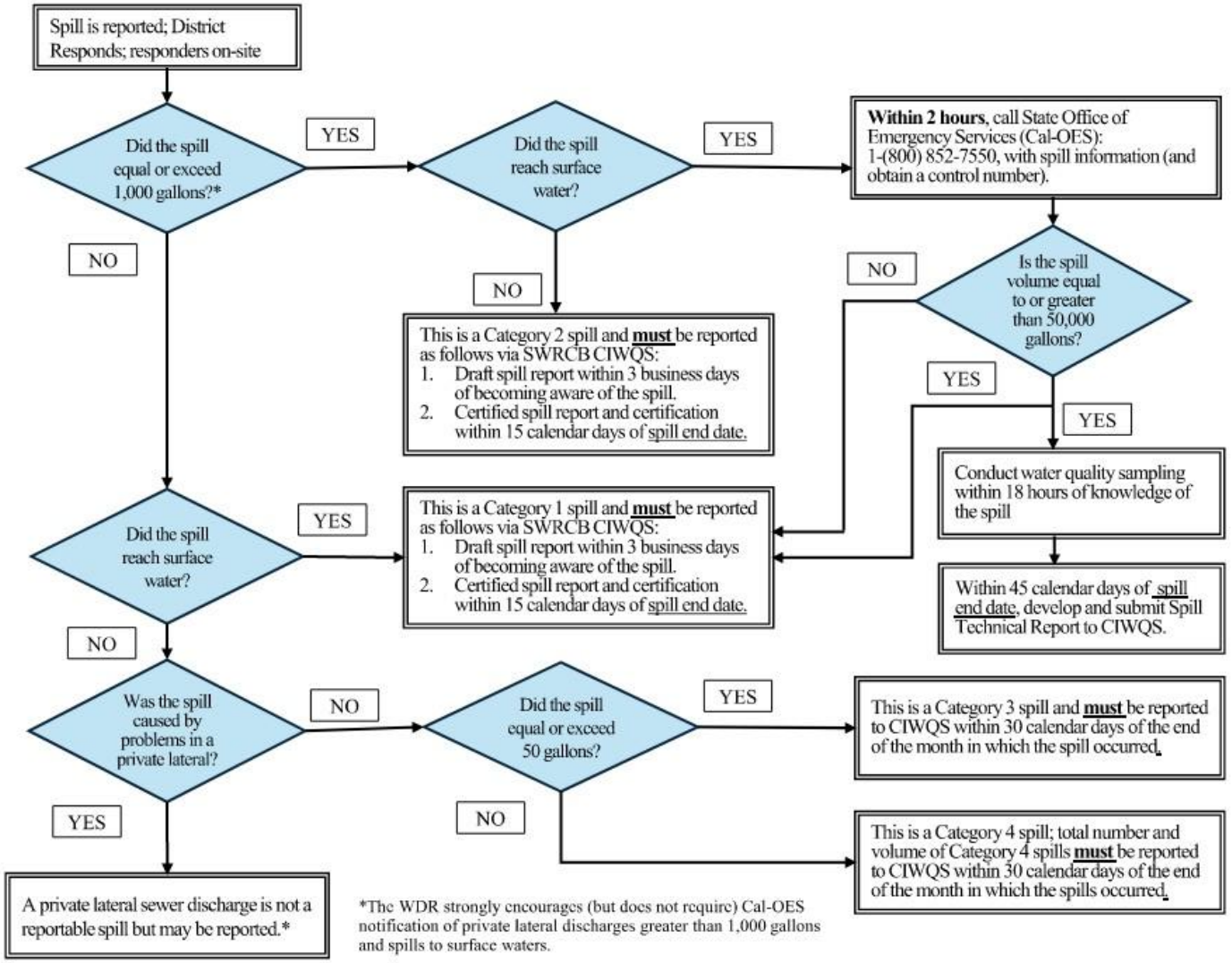
2.7 Chain of Communication for Reporting Spills

The chain for reporting spills to the various regulatory agencies is shown in **Figure 2-3** . Detailed information on spill reporting can be found in Section 6 and in the District's full Spill Emergency Response Plan contained in **Appendix D**.

2.8 District Phone Communications

The District has a land-line as well as cellular-based communications systems. In addition, as discussed in later sections, the Collections System staff also has a Federal Communications Commission (FCC) licensed two-way radio communications system.

FIGURE 2-3: CHAIN OF COMMUNICATION FOR REPORTING SPILLS



3. LEGAL AUTHORITY

3.1 Element 3 Regulatory Requirement

The SSMP must include copies or an electronic link to the Enrollee's sewer system use ordinances, service agreements, and/or other legally binding procedures to demonstrate that it 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 collaborate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional connections of sanitary sewer infrastructure to storm sewer infrastructure
- Require that sewers and connections be properly designed and constructed
- Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Enrollee
- Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures.
- Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

3.2 Legal Authority

The Novato Sanitary District (District) is an independent special district. As discussed under District Background in Section 1, the enabling legislation for the formation of the District, as well as the District's legal authority, resides in the Sanitary District Act of 1923, Chapter 1, Division 6, comprising Sections 6400 through 6830 of the Health and Safety Code of the State of California. The District was formed with the primary purpose of providing wastewater collection, treatment, and disposal services for the Novato community.

The District exerts its legal authority primarily through the "Sanitary Code of the Novato Sanitary District" (Code) and amendments, service agreements, and design and construction standards.

3.3 District Code

The District's Code regulates the use of District wastewater facilities, their construction, permits required for work on these facilities, easements, charges, materials that can be placed into sewers, and the enforcement of these requirements in the Code.

The Code incorporates the District's sewer use ordinance, Ordinance No. 70 and amendments, and addresses, among others: the need for and use of public sewers; private sewage disposal; building sewers, lateral sewers and connections; public sewer construction; permits and fees for sewer connection; classes and use types of public sewers; and the enforcement provisions of the Code.

The District also operates a pretreatment program within its boundaries. The work of this program is performed by the District's Environmental Services section, which works with District management and the

Collection system crews to ensure that their independent efforts are coordinated. A portion of the District's Code Ordinance No. 70, Article VIII, Sections 801 et seq, Amended and restated by Ordinance No. 115, specifically regulates the discharge of wastewater into its system to protect its collection and treatment facilities.

The code is available on the District website at this link https://novatosan.com/doing-business/sewer-use-regulations/.

3.4 Control of I/I

The District's ordinance prohibits the discharge of uncontaminated water, storm water, and I/I to District sewers, either directly or indirectly. Section 808 of the ordinance specifically prohibits the following categories: rainwater, storm water, groundwater, street drainage, sub-surface drainage, water from yard fountains, ponds, lawn sprays, and yard drainage. Section 816 specifically prohibits the connection of discharge leaders from roofs and surface drains, and prohibits surface or subsurface drainage, rainwater, storm water, and seepage, cooling water or unpolluted industrial waters to enter the sanitary sewer system by any device or method whatsoever.

The District also administers a lateral replacement grant program to assist property owners in replacing deficient sewer laterals to help control I/I. The District regularly evaluates the effectiveness of this program relative to participation levels, maximum grant amount, and other related factors. The District has no legal responsibility for maintenance or ownership of any part of the laterals.

3.5 Proper Design and Construction, Installation, and Testing of Facilities

The District has developed and adopted a set of standard documents for the design, construction, installation, and testing of facilities, titled "Standard Specifications and Drawings" that are periodically updated. The District's Code requires that these District standard documents be followed in the design, construction, installation, and testing of all wastewater facilities. This includes laterals as well as District main lines and facilities.

In this regard, Article V of the Ordinance provides an overview of the design, construction, installation and testing considerations for building sewers, lateral sewers and connections, while Article VI provides the corresponding considerations for public sewers, mainlines, and facilities. Details and specific requirements supporting the requirements of these articles are included in the standard specifications and drawings.

The District's standards require backflow prevention devices (BPDs) and cleanouts to be installed in accordance with the California Plumbing Code, (CPC), Title 24, Part 5. BPDs are typically required to be installed on all new construction and retrofitted to older homes and buildings upon activities (such as connection, lateral repair or replacement permit process) referred to the District as part of the City of Novato's or County of Marin's building permit process, and as required by the CPC.

3.6 Enforcement

Article IX of the District's Code Ordinance covers the enforcement alternatives available to the District in the event of non-compliance with its code and requirements. The District has many avenues of enforcement available through its Ordinance, including but not limited to: notices of violation, notification of corrective work required, cease and desist orders, disconnection and termination of service, abatement proceedings in the event of a public nuisance, and assessment of civil and criminal penalties.

3.7 Coordination with Storm Sewer Agencies

The District collaborates with the City of Novato, which manages the Municipal Separate Storm Sewer System (MS4) program in the City of Novato. District staff regularly attend utility coordination meetings with the City of Novato and other utilities to ensure no utility conflicts or cross connections. The District maintains up-to-date storm sewer information on its sewer mapping in order to identify the closest storm drain inlet to a sanitary sewer manhole in case of a spill. District staff maintain up-to-date contact lists for the City of Novato Public Works Maintenance staff and after-hours numbers in the event of an emergency.

4. OPERATION AND MAINTENANCE PROGRAM

4.1 Element 4 Regulatory Requirement

The SSMP must include the items below that are appropriate and applicable to the Enrollee's system:

- Update map of the sanitary sewer system
- Preventative operations and maintenance activities
- Training
- Equipment Inventory

4.2 Collection System Map

The District utilizes both hard copy and editable electronic collection system mapping, using a grid configuration. Hard copy mapping information is created from the electronic maps. The hard copy maps are updated as needed by the District's engineering staff using AutoCAD drawings.

Mapping is maintained electronically in both AutoCAD and Geographic Information System (GIS) format. The AutoCAD maps have more detail (e.g., show storm drains) but the GIS maps are the primary inventory database linked to the District's Computerized Maintenance Management System (CMMS). The mapping includes manhole identification numbers unique to each map page, pipe size, pipe type and material, year constructed, direction of flow, and slope. The system utilizes streets and property lines to provide points of reference for the location of District assets. The maps are drawn to scale based on as-built construction drawings and overlay recent aerial photographs of the service area as well as property boundaries. In addition to details of the collection system gravity sewer lines, the maps also provide location details of the District's sewer lift stations, main conveyance pump stations, force mains, and wastewater treatment plant.

Updates may be made to either set (e.g., construction as-built updates are usually made first in AutoCAD, whereas changes identified through CCTV inspection may be made first in GIS), but there is an informal process in place to coordinate those updates.

The District also participates in a joint powers authority to share electronic mapping information with the City of Novato and the County of Marin.

4.3 Preventive Operation and Maintenance

The District uses a CMMS to manage its collection system preventive maintenance program. The CMMS generates schedules for maintenance and inspection activities, and documents the data from those activities. The District maintains an electronic database of scheduled cleaning work orders and past history for all of the sewer mains within the District. Records from these systems are available on request or as required.

The District has scheduled each public main within the District's collection system to be cleaned at least once every 4 years, but in practice, most are cleaned on a 3-year schedule, other than large diameter lines that are cleaned by contract (generally every 5 to 7 years). In addition, areas that have known problems such as excessive grease buildup, root intrusion, debris accumulation, or odor problems are cleaned on a much more frequent basis based on experience and history. Most siphons are cleaned every 3 months, and

all pump stations are on a regular preventive maintenance schedule. Routine annual inspections are conducted on all sewer lift stations to identify potential safety hazards and assess condition.

The District has established a baseline assessment of condition through closed-circuit television (CCTV) inspection of all gravity sewers on a 5-year schedule. Although there is no formal manhole inspection program, manhole conditions are visually evaluated during sewer cleaning and inspection activities and any issues are recorded on forms for follow-up action.

Maintenance and inspection frequencies may be updated in the future based on system performance and observed conditions (see discussion in Section 9, Monitoring, Measurement and Program Modifications).

Excessive grease buildup in District mains is also addressed through the District's Fats, Oils, and Grease (FOG) program, both through inspection and enforcement for commercial/industrial dischargers and through public outreach in residential areas (see description in Section 7, Sewer Pipe Blockage Control Program).

Areas exhibiting root intrusion are identified through routine cleaning and through video inspection of the system. These areas are maintained with conventional methods and a chemical root abatement program. The District contracts annually with a chemical root abatement contractor to foam treat problem lines until they can be addressed through the District's capital improvement program. Identified problem areas are forwarded to the District's engineering staff where they are prioritized and scheduled into the capital improvement program.

4.4 Training

The District takes the need for initial and continuing education and training very seriously and has established a practice of funding its external training needs on an on-going basis through the training line item of its annual operating budget. In addition, the District also provides extensive in-house training conducted by both in-house staff and outside consultants.

All employees are provided with initial training and familiarization with the District's systems upon initial hire. Subsequently, training plans geared to the employees' level of experience are prepared as needed by the Collection Systems Superintendent (with input from the Collections Lead Worker) and forwarded to the Deputy General Manager and Administrative Services Officer.

The District also provides in-house training on specific topics and uses outside training resources such as the training programs from the Office of Water Programs of the California State University (Sacramento), professional organizations like the California Water Environment Association (CWEA), and the Bay Area Clean Water Association (BACWA), to further the education levels and technical skills of District staff.

The District is a believer and proponent of certification and continuing education and is an active contributor and participant in CWEA's educational activities and voluntary certification program. District staff in general is encouraged to further their professional qualifications with voluntary certification through CWEA, and the collections staff is particularly encouraged to participate in the Collection System Maintenance Operator certification program. Since the CWEA certification program also registers the continuing education activities of its certificate holders as part of the certification program, the District is assured that its employees are up-to-date with current skill levels and generally accepted practices in the industry.

In addition, the District also contracts with the California Sanitation Risk Management Authority (CSRMA) to provide training and resources for the development of District employees. CSRMA has an extensive collection of online and classroom training modules.

The District conducts annual SERP training for its staff, which includes an overview of WDR and SSMP requirements, as well as SERP-specific activities including volume estimation and reporting procedures.

The District maintains a library of Standard Operating Procedures (SOPs) for many O&M related activities and equipment operation. It is the District's policy to train to the SOP, when applicable. The District recently implemented a Smart SOP application, which will make it easier to create, update and revise SOPs.

Through its standard specifications, the District requires that contractors working on the NSD collection system facilities be licensed as required by law and be skilled and regularly engaged in the type of work called for in the contract. No proof of formal training is specifically required but there is a documented intent of the District to only employ contractors who can complete the work successfully and in accordance with the project requirements. In many cases this includes formal certification, such as from the National Association of Sewer Service Companies (NASSCO). The District's standard specifications and drawings describe additional requirements, processes, and procedures that may require job specific training. District staff additionally describe any site-specific conditions to contractors that create special conditions or increase risk to the collection system. The District also engages with entities in the District's service area that carry out construction activities, maintenance of private laterals, or cleaning of grease traps and septic systems, to raise their awareness of the results of any actions that maybe deleterious to the District's facilities. Examples of issues that are frequently raised with such entities include dumping of construction debris into manholes, pushing debris from lateral cleaning into a mainline, and illegal dumping of grease or septic tank hauling.

To supplement the above requirements and efforts, a plumber's outreach flyer is distributed via mail and individual contact to the building contractors and plumbers that typically work within the District's sphere of influence. **Appendix B** includes an example outreach flyer. The District also participates in the Association of Bay Area Governments (ABAG) Sewer-Smart program and promotes the Sewer-Smart web-site as an important community education tool.

4.5 Equipment Inventory

The District seeks to maintain an adequate supply of emergency and contingency equipment on hand to facilitate continuous operation and seamless transitions during emergencies. The District additionally participates in mutual-aid entities such as CALWARN and can access additional equipment and services from neighboring sanitary and water districts and other public agencies during emergencies.

The District maintains a supply of consumable parts and emergency spare parts at its maintenance shop facility that is periodically verified to be adequate to meet its needs. In addition, the District maintains supply contracts with local plumbing suppliers such as Water Components, Inc. as well as the local distributorships of industrial spare parts supply houses such as W.W. Grainger, Consolidated Electric Distributors, etc., that ensures a timely supply of non-emergency spare parts is always available. The District also has a mutual aid relationship with the North Marin Water District (NMWD) for access to NMWD's contingency equipment and replacement inventories.

On-hand District emergency equipment and a critical replacement part inventory is included in **Appendix C**.

4.5.1 Pump Stations

All of the District's major pump stations incorporate multiple redundant pumping units to assure reliability of operation. The typical layout is separate dry weather and wet weather pumping systems, with each system incorporating duty + standby units. These pump stations are integrated into the District's Supervisory Control and Data Acquisition (SCADA) system, with remote control, monitoring, and alarming capabilities. Each of these major pump stations also incorporate stationary standby/emergency generators sized to handle the peak start and running load of the wet weather systems.

The majority of the District's lift stations incorporate a two pump (duty + standby unit) design to provide for seamless operation in the event of a single pump failure. All of the lift stations are part of a SCADA network with remote monitoring and alarming capability. For the Bel Marin Keys (BMK) lift stations, there's an additional layer of redundancy in that the hydraulic design of the collection system in that area also allows each station to surcharge to a given level and then flow by gravity to the downstream manhole.

In terms of standby/emergency power, the lift pump stations either have stationary generators, or more commonly are powered by the District's portable generators that are rotated from pump station to pump station on previously established routes, based on an analysis prepared as part of the District's emergency response plan.

5. DESIGN AND PERFORMANCE PROVISIONS

5.1 Element 5 Regulatory Requirement

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

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

5.2 Standards for Installation, Rehabilitation and Repair

The District maintains a set of wastewater and sewer system design standards (Novato Sanitary District Standard Specifications and Drawings or "Standard Specifications"). These Standard Specifications are a comprehensive set of standards that cover all sewage or wastewater facilities in the District.

The District's Code requires that the Standard Specifications be followed in the construction of new installations and rehabilitation and/or replacement of existing facilities. They are available to contractors and the general public at the District's offices and are updated periodically, as necessary. Two addenda are available on the District's web-site: https://novatosan.com/doing-business/sewer-use-regulations/.

Where the District initiates and implements large scale capital improvement projects, a consultant firm(s) is retained to provide specialized knowledge and expertise to the project. Project planning and design services are typically provided by such firms in these cases, and project specific drawings and specifications that conform to the District standards are prepared for public bidding by licensed contractors. The construction phase of the project is then typically monitored for adherence to the project requirements by specialty construction administration and/or management firms that the District retains for the duration of the construction phase. The Construction Inspector and Deputy General Manager maintain oversight of the project construction and enforce District standards and policies.

5.3 Standards for Inspection and Testing of New and Rehabilitated Facilities

As discussed in Section 2 of this SSMP, the District has a full-time Construction Inspector who inspects both new construction and repairs. The inspector ensures that all construction meets the District's Standard Specifications and other applicable codes. The Staff Engineer can fulfill this role in the absence of the Construction Inspector. Permits are required for all work on wastewater facilities in the District, and no facility is accepted unless it is permitted, inspected, and tested in accordance with the Standard Specifications.

As mentioned earlier, where the District initiates and implements large scale capital improvement projects, the District also retains specialty construction management firms to provide inspection services to ensure that the projects are constructed to the project specifications.

6. SPILL EMERGENCY RESPONSE PLAN

6.1 Element 6 Regulatory Requirement

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

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

6.2 Purpose and Policy

The purpose of the District's SERP is to support a prompt, orderly, and effective response to sanitary sewer spills, reduce spill volumes, and collect information for prevention of future spills. A "spill" is defined under the WDR as a discharge of sewage from any portion of the sanitary sewer system due to a sewer overflow, operational failure, and/or infrastructure failure. The SERP provides guidelines for District staff to follow in responding to, cleaning up, reporting, and properly documenting spills from the District's sanitary sewer system.

District employees are required to report all spills from District-owned sewer facilities and take appropriate actions to secure the spill area, properly report to appropriate regulatory agencies, relieve the cause of the spill, and ensure that the affected area is cleaned as soon as possible to minimize public health hazards and protect the environment. The District's goal is to respond to spills as soon as possible following notification and follow all reporting procedures as required by the SFRWQCB and SWRCB.

6.3 Updated Spill Emergency Response Plan

In July 2023, the District updated its previous Overflow Emergency Response Plan to include all the SERP requirements of the re-issued WDR, including notification and reporting procedures; spill response, containment, and recovery; interagency coordination; post-spill assessment and documentation; and training of staff and contractors. The updated SERP also reflects the revised definition of spill categories as defined in the WDR and includes sections on:

- Spill detection and notification
- Spill response procedures
- Recovery and cleanup
- Water quality
- Notification, reporting, monitoring and record-keeping requirements
- Post-spill assessments
- Spill response training

The SERP appendices include reporting requirements by spill category; forms and door hangers; and spill response instructions for contractors. The SERP also includes a "Sanitary Sewer Spill/Backup Response Workbook" including table of contacts; spill category definitions; spill event checklist; guidelines for regulatory reporting; spill response flowchart; a 13-page spill field report form; volume estimation guidelines and forms; backup forms; standard operating procedures for surface water sampling; and post-event assessment forms.

The updated SERP is included in **Appendix D.** The District's LRO will annually review and certify that the SERP has been assessed for effectiveness and has been updated as necessary from the review. Any changes made to the SERP will be documented in the SSMP Change Log.

7. SEWER PIPE BLOCKAGE CONTROL PROGRAM

7.1 Element 7 Regulatory Requirements

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

The procedures must include, at minimum:

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

7.2 Pipe Blockage Control

As documented in its most recent SSMP Audit, the District experiences relatively few sewer spills due to blockages (averaging four per year for the period 2022 through 2024). Blockages that have occurred have been primarily due to roots or debris. As described in Section 4, the District's preventive maintenance program provides for cleaning of sewer mains every three to four years, with any known problem areas cleaned on a more frequent basis to prevent blockages. The District also implements a chemical root abatement program to address potential blockages due to roots. The District's Fats, Oils, and Grease (FOG) control program has been very effective in minimizing blockages and spills due to FOG. The FOG program includes source control, as well as public education and outreach. The District's FOG control program is described in the following subsections.

7.3 Public Education and Outreach

In addition to specific outreach related to FOG, described below, the District's website encourages customers to keep other types of materials, including non-flushable wipes and other types of debris out of toilets to prevent sewer blockages. The website includes links to other sources of information on these

subjects. In conjunction with other Marin County agencies, the District also distributes a brochure "Wipes Clog Pipes" that explains the negative impacts of flushing wipes down the toilet (see **Appendix G**).

7.4 Fats, Oils, and Grease Control (FOG) Overview

The District's current FOG control procedures and efforts are staffed by the District's Collections Systems and Environmental Services staffs, the Staff Engineer and Construction Inspector, under the direction of the District management. Similar to formalized FOG control programs, current practices include provisions for permitting under existing ordinance provisions, inspection and monitoring, enforcement of existing ordinance provisions, and multiple language outreach efforts to commercial establishments (primarily Food Service Establishments or FSEs), multiple dwellings complexes, and to the residential community at large.

The District does not currently issue formal FOG Wastewater Discharge permits to FSEs. However, the District's building permit review process under District code ordinance provisions requires the installation of grease removal devices, maintenance of all installed grease removal devices at facilities, and record-keeping of maintenance activities.

The District works closely with the Marin County Health Services FSE permitting program and the City of Novato Building Inspection Department to coordinate and verify need, sizing, design, and installation of grease traps and interceptors. Subsequently, the District also coordinates with the City and County in verifying proper grease trap/interceptor operation, maintenance and recordkeeping.

On the collection system side, a key element of current practices as they relate to FOG control includes hotspot identification and response (grease hotspot GIS database and priority maintenance schedule), as well as targeted responses to grease-related blockages and any consequential sewer spills. Maps of known hotspots in the District's service area are maintained by the District and available upon request. Response activities include periodic facility inspections at FSEs upstream of the problem area, camera investigations to determine point of source location, and corrective actions and enforcement procedures as needed. In addition, the District's capital improvements program incorporates sewer repair projects that along with other factors allow better flow characteristics which will aid in the control of grease buildup and minimize grease-related spills in its system.

7.5 Fog Program Elements

The following program elements have been outlined for the District's FOG program:

- Source Identification
- Legal Authority
- Program Structure/Requirements
- Grease Removal Device Technology for FSEs
- Inspections and Monitoring for FSEs
- Enforcement for FSEs
- FOG Disposal
- Public Education and Outreach

7.5.1 Source Identification, Grease Problem Areas, and Sewer Cleaning

Source identification is the locating of sources of grease introduced into the District sewer system. Typical grease sources in the District's service area include:

- Food Service Establishments (FSEs), including but not limited to restaurants, cafes, bakeries, hospitals, nursing homes, grocery stores, caterers, commissaries, and food manufacturing facilities
- Residential (including but not limited to multi-family dwellings, and apartment or condominium complexes)
- Other commercial

Continuing sources are categorized as "Hotspots" – FSEs causing or contributing to grease-related sanitary sewer spills and blockages, and "Non Hotspots."

Grease Problem Areas: The District inventories and categorizes grease points of locations (hotspots) and has a grease hotspot GIS database (established 2006) establishing a priority maintenance schedule for flushing and/or rodding problem sewer lines. Additional sewer lines can be added to the priority maintenance schedule after a spill event or if closed circuit television inspection (CCTV) indicates grease buildup.

Sewer Cleaning: Several segments of the gravity sewer system are on the six-month (or less) priority maintenance schedule for flushing, rodding, or both flushing and rodding, with some of these lines identified as grease problems. While the District has known areas with commercial grease sources (e.g. restaurants), the District also experiences grease issues in residential areas from lines with poor grade.

CCTV: The District conducts CCTV inspection as part of its condition assessment program, and has set a recurrence interval to inventory its entire collection system every five years to establish a baseline. After establishment of the baseline, CCTV inspection frequency may be updated as needed to reflect observed conditions. The District performs CCTV inspections to identify and categorize the severity of grease problems. Lines with known poor flow characteristics are prioritized for CCTV inspection. With information on the causes of grease problems, maintenance activities and schedules can be modified, or sewer pipeline repairs made to better control grease buildup and minimize grease-related spills.

7.5.2 Legal Authority for FOG Program Requirements

The District's Code Ordinance is the basis of the legal authority of the FOG control program. Specifically, Article VIII of the Code includes the following provisions:

- Prohibited substances – those that cause or threaten to cause obstruction of flows in community sewers or interceptors
- Authority to require pretreatment prior to discharge to the community sewer
- Authority to inspect and monitor dischargers and sample their discharge
- Enforcement procedures and penalties for failure to adhere to the Ordinance

Provisions for grease control and removal devices are included in Section 810 of the District's code. The California Plumbing Code (CPC) also contains provisions related to grease, and the District has adopted these Codes by reference through its Code.

7.5.3 Program Structure/Requirements

While the District does not currently issue permits to Food Service Establishments (FSEs), it enforces the following requirements:

- Installation of Grease Traps/Interceptors for all new FSEs and remodels, as part of the County's review process for FSE construction/remodel. The District also works to educate, encourage, or mandate FSEs known to have caused or contributed to a sanitary sewer overflow or blockage to install grease removal devices.
- Grease removal device maintenance is also verified, to ensure FSEs discharges do not cause or contribute to sewer spills or blockages due to lack of adequate maintenance. Also, a complete pump out (with verifiable records) of grease interceptors is required each time an interceptor is pumped.
- Maintenance records are required to be kept on site and made available at the time of inspection by the District's Environmental Compliance staff.

7.5.4 Grease Removal Device Technology for FSEs

Grease interceptor installation, design and sizing is per the California Plumbing Code. Grease interceptor waivers and variances are considered depending upon the business type, the grease generating capability (& probability) of an FSE, and difficulties with interceptor installations due to conflicts with site conditions. The installation of these is coordinated with Marin County Environmental Health Services and the City of Novato Building department.

Grease trap installation, design and sizing may be used as an alternative to interceptors in instances where a grease interceptor cannot be installed (ex: space and slope restrictions). The installation of these is coordinated with Marin County Health Services agency and the City of Novato Building Department on a case-by-case basis.

7.5.5 Inspections/Monitoring for FSEs

Non-Hotspots: The District's environmental services staff monitors "Non-hotspot areas" as follows:

- FSEs are inspected periodically (typically at least once every 2-3 years)
- Grease interceptors are inspected – a measurement of grease/water/solids is done
- Compliance with District requirements is determined
- Verification of proper disposal methods
- Educational materials are distributed to managers and employees
- Follow-up tasks (as needed) are performed, such as increasing grease interceptor pumping frequency and requiring grease interceptor repairs

Hotspots: The District's environmental services staff monitors areas (identified by collections system staff) that have a history of grease-related spills and blockages, based upon field experience, maintenance records, and CCTV inventory inspection. Environmental Services staff also investigates conditions in these areas in an effort to determine which establishments/residences are causing the grease problems. Actions in these investigations may include:

- Targeted inspections of FSEs upstream of a reported hotspot
- Grease interceptor inspections – measurement of grease/water/solids
- Determination of compliance with District requirements
- Video inspections of laterals
- Video inspections of main lines
- Distribution of educational materials
- Increase of cleaning frequency by the District's Collections staff

Follow-up tasks may be done as a result of these inspections, including requirements to install a grease interceptor, increase the frequency of grease interceptor pumping, any identified repairs or modifications to existing installations, and District verification of such repairs or modifications.

7.5.6 Enforcement for FSEs

The District utilizes an escalating or progressive enforcement structure informally modeled after the District's current Non-Domestic Wastewater Discharge Enforcement Response Plan.

7.5.7 FOG Disposal (Grease Trap and Grease Interceptor Waste)

The District maintains a list of known commercial grease haulers that is provided to interested parties for informational purposes (see **Appendix E**).

At this time, the District's wastewater treatment facilities do not receive waste grease from either inside or outside of its service area, and all known haulers in the District's service area are informed about this. The District may reevaluate the possibility of becoming a receiving facility in the future based on several factors including local demand for the service.

Central Marin Sanitation Authority (CMSA) is a receiving facility located in Marin County and the East Bay Municipal Utility District (EBMUD) wastewater treatment plant in Oakland is a receiving facility. Haulers and the general public are informed of this upon inquiry.

7.5.8 Public Education and Outreach

Program brochures that describe best management practices (BMP) and a BMP chart are distributed to FSEs in English and Spanish. Brochures and other literature for FSEs include a "How to Maintain a Grease Interceptor" flyer, a "Fat Free sewer" flyer, a "Do Not Pour" poster, and BMP posters and charts. Examples of this information are included in **Appendix F** and **Appendix G**.

Materials for use in residential situations include informational brochures, scrapers that can be used to clean cooking ware, and informational flyers. Staff and Board members also present FOG materials and information at public events and fairs.

The District's web site also contains links related to FOG that contain useful FOG information, including the location of used cooking oil collection centers.

8. SYSTEM EVALUATION, CAPACITY ASSURANCE AND CAPITAL IMPROVEMENTS

8.1 Element 8 Regulatory Requirement

The SSMP 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.

8.2 Collection System Master Planning

The District prepared a comprehensive Collection System Master Plan (CSMP) in 2019, which includes most components of the requirements for condition assessment, capacity assurance, and capital improvements as required by the WDR. Details of the evaluation are included in the 2019 CSMP report, which is available on the District website at the following link: https://www.novatosan.com/newsletters-press-documents/documents/#planning-and-facilities.

Since 2019, the District has continued to implement the CSMP, as well as conduct additional condition and capacity assessments to update its Capital Improvement Plan (CIP). This section of the SSMP describes the process the District follows to assess the condition and capacity of its system and determine needed sewer rehabilitation/replacement (R/R) and capacity-related capital improvements anticipated over the next 20 years.

Although the District's condition assessment, capacity assurance, and sewer rehabilitation programs meet the overall requirements of this SSMP element, the 2022 GWDR includes additional requirements related to ensuring system resilience and adaptability to changing future conditions. Specifically, the capacity assessment must consider the potential impact of larger and/or higher intensity storm events resulting from climate change, and the need to provide redundancy in pumping and storage capacities. In future updates of its CSMP, the District plans to address these issues as more accurate climatological data and predictions become available, and incorporate the findings into an adaptive management approach to planning and implementing system capacity and condition improvements. The District's current CIP includes funding for a Climate Adaption study to evaluate the potential risks for District facilities associated with climate change including more frequent extreme weather events, flooding, fire, and sea level rise, and to identify capacity projects to improve climate resilience.

While the District does not have a formal infiltration/inflow (I/I) reduction program, I/I was included as a factor, in addition to structural and maintenance condition, for calculating likelihood of failure and overall risk in prioritizing sewer R/R projects, as described in the following section below. And recognizing that sewer laterals are likely a significant contributor to I/I, the District has a lateral grant program to help property owners fund improvements to their private sewer laterals. The District is also prioritizing repair/replacement of sewers with significant defects located near creeks, as required under its settlement agreement with Northern California River Watch.

8.3 Condition Assessment

8.3.1 Gravity Sewer Inspections and Condition Assessment

As noted in Section 1, the District's gravity collection system includes approximately 212 miles of sewer pipelines ranging in size from 6 to 48 inches. The District has taken a proactive approach in inspecting and evaluating the condition of its gravity collection system by establishing a baseline assessment of condition through closed-circuit television (CCTV) inspection of all gravity sewers on a 5-year schedule.

Since 2016, the District has used the National Association of Sewer Services Companies (NASSCO) Pipeline Assessment Certification Program (PACP) standards for grading and scoring CCTV inspection data. Prior to that time, the District used a different coding system; however, for the 2019 CSMP condition assessment, those codes were "translated" to PACP coding for condition analysis.

The 2019 CSMP condition assessment utilized a risk assessment approach to identify the pipes at highest risk of failure due to condition and/or potential consequence. InfoMaster™ (now called InfoAsset Planner™) risk assessment software was used to develop likelihood of failure (LOF) and consequence of failure (COF) scores for each pipe in the system. LOF scoring was based on structural condition based on CCTV data; a "structural vulnerability" factor reflecting the age and material of the pipe (also used as a preliminary surrogate for structural condition for pipes without CCTV data); maintenance (cleaning) frequency; and relative infiltration/inflow (I/I) contribution (based on flow monitoring and modeling conducted as part of the CSMP capacity assessment, described later in this section). COF scoring considered the pipe size (reflecting its potential flow volume); environmental consequence (e.g., proximity to surface waters); traffic impact (based on road type); and community impact (proximity to commercial areas and public facilities). A weighting system was applied to each of the LOF and COF factors to determine an overall risk score and risk category (very low, low, medium, or high), reflecting its priority for future inspection or repair, rehabilitation or replacement.

Based on the risk assessment results, all gravity sewers were identified for either CCTV inspection (for those pipes without CCTV data), rehabilitation/replacement (R/R) (based on type and severity of defects recorded during CCTV), or continued preventive maintenance (pipes without major defects). Pipes without CCTV data but with medium or high risk ratings were identified as high priority for CCTV.

The District plans to maintain an overall 5-year inspection frequency for its gravity sewers. The District will also consider making future refinements to COF criteria to more specifically identify sewers in other environmentally sensitive areas (e.g., steep terrain, high groundwater areas, areas near creeks, etc.) or areas that may be more vulnerable to the impacts of climate change. As part of its adaptive management program (see Element 9), the District will periodically review its CCTV inspection program to incorporate up-to-date information from inspections, maintenance activities, and spills and modify CCTV schedules and condition assessments accordingly.

8.3.2 Manhole Inspection

The District does not have a formal manhole inspection program; however manhole conditions are visually evaluated during sewer cleaning and inspection activities. Any issues found during these inspections are recorded on forms for follow-up action.

8.3.3 Sewer Siphon Inspection

The District plans to inspect sewer siphons on the same schedule of the rest of its gravity sewers, or on an overall 5-year inspection frequency.

8.3.4 Pump Station Inspection

Pump stations are inspected frequently during regular preventive maintenance activities, as discussed in Section 4. The District has a line item for pump stations condition assessment its CIP for the planning, prioritization and performance of condition assessments at various pump stations throughout the District.

8.3.5 Force Main Inspection

The District has developed a plan for condition assessment of its force mains based on a risk assessment approach. A five-year program for inspection of high priority force mains is included in its CIP. The District is also initiating a project to evaluate new alignments for its most critical Ignacio Transfer Pump Station force main, which conveys flow from a very large portion of the District's service area.

8.4 Capacity Assessment and Design Criteria

8.4.1 Capacity Evaluation

The capacity evaluation is an assessment of the hydraulic capacity of key sewer system elements under peak flow conditions. The following are the key components of the evaluation:

- Flow Monitoring: The District conducted temporary flow monitoring in conjunction with the 2019 CSMP to quantify flows in the system. A two-month flow monitoring program consisting of 16 flow meters and 4 rain gauges was completed during the 2016/17 winter season. Following the 2019 CSMP, additional flow monitoring at 7 sites was conducted during the 2022/23 winter season to refine and validate the model predictions for several areas of the system that were identified as potential capacity deficiencies in the 2019 CSMP. In addition to temporary monitoring, the District maintains permanent flow meters at five of its major pump stations, in addition to influent flow metering at its wastewater treatment plant.
- Hydraulic Modeling: As part of the 2019 CSMP, the District developed a fully-dynamic hydraulic model of its trunk sewer system in InfoWorks™ ICM software. Portions identified for analysis include all collection system interceptors and lines 10 inches and larger in diameter and selected smaller diameter pipes that serve significant tributary areas or are suspected to have capacity issues. The hydraulic model was calibrated to the flow monitoring data and run for both current and projected future development conditions. The model is updated based on new flow monitoring data, as well as updates to the system network.
- Design Storm: The hydraulic evaluation for peak wet weather flow conditions is based on a 5-year return period, 24-hour design storm. The model is used to estimate peak flows in the system and identify the locations and magnitude of capacity deficiencies and potential overflows under peak flow conditions in order to identify locations where capacity enhancements may be needed. In the next update of its Master Plan, the District will consider the need to update the design storm, especially in the light of changing rainfall patterns due to climate change.

8.4.2 Design Criteria

The District's Standard Specifications include design criteria for its wastewater collection system. The criteria include design flow factors, minimum pipe sizes and slopes, etc. Design criteria for evaluating the capacity of sanitary sewers and wastewater pump stations and for sizing new or relief facilities are also included in the CSMP.

The District has adopted a construction standard of 8-inch minimum for sewer mains. The District is considering a cyclic program to replace smaller 6-inch diameter sewers with larger 8-inch diameter sewers. If sewers are to be replaced, they are built to current standards. The exception is only when there is a condition of known limited current and future flow.

8.4.3 Capacity Assurance Plan

Capacity enhancement measures that have been put into place during past 15 years include upgrades to the wastewater treatment plant to lower the hydraulic grade line, thereby increasing the capacity of the influent sewers; implementation of flow equalization at the Ignacio Transfer Pump Station; upgrades to collection system pump stations; and construction of several capacity enhancement projects identified in the 2019 CSMP. The District has developed a detailed implementation plan for the remaining recommended projects, which are included in the District's CIP.

8.5 Prioritization

As discussed in Section 8.3, sewer R/R projects are prioritized based on their relative risk and severity of defects identified through CCTV inspection. Capacity improvement projects are prioritized based on the relative magnitude of predicted deficiencies (i.e., extent of model-predicted surcharge or predicted overflow). Prioritization also considers improvement needs identified through ongoing maintenance activities and input from operations staff, as well as the need to coordinate utility work with the City of Novato and other area utilities so as to minimize disruption to traffic and the public.

8.6 Capital Improvement Plan

The District has put into place the steps needed to establish a short-and long-term CIP to address identified condition and capacity deficiencies, including prioritization, alternatives analysis, and schedules.

The CSMP includes recommended priorities for identified projects; however, actual implementation is scheduled through the CIP process. The District's CIP process includes a system for preparing, evaluating, and reporting CIP budgets. The District's collection system requires a continuing number of improvements including collection system capacity upgrades, correcting structural problems, and modifications to pump stations and the treatment plant. A construction schedule for the capital projects is developed based on the project priorities and to support payment of all capital improvement program and equipment replacement expenditures. The schedule for the projects (in current dollars) is included in the District's Capital Improvements Plan. Capital projects are funded through sewer service charges, property taxes, and connection fees.

The District prepares and adopts an annual budget through its CIP on a standard July-June fiscal year basis that provides a detailed overview of the District's revenue sources as well as its planned expenditures for the fiscal year. On the expenditures side, the District's budget addresses both its operating and capital needs. As discussed above, CIP is based on consideration of maintenance history, asset history and

characteristics, and capacity analysis as drivers for prioritization and scheduling. The projects included in the CIP for the current and following fiscal years are detailed in the District's Annual Budget document on its website.

The CIP addresses repairs and upgrades to the collection system and supporting facilities on an annual basis. Consistent with industry practices the District has established two broad classes of collection system capital projects: short term or immediate "spot" repairs, and longer-term replacement and/or capacity-related upgrades.

The spot repairs category is funded as an ongoing Annual Collection System Repairs Project. The longer horizon, multi-year facilities replacement or capacity upgrade projects are budgeted under the Collection System Improvements Project, in keeping with the District's: (a) long-range plan that provides for sewer replacement, and (b) capacity related improvements identified by the Collection System Master Plan. Similarly, significant pump station improvements such as replacing pumps, converting wet well/dry pit stations with submersible stations, replacing generators and upgrading electrical equipment, and corrosion improvements are funded under separate Pump Station Rehabilitation projects; with an Annual Pump Sation Improvements Project used for small repairs at the pump stations.

The District also produces a multi-year CIP projection document that serves as a planning tool for anticipated capital projects. This 5-year CIP projection document is based on information from the District's various master planning documents. As the name implies, the document looks out up to five years into the future for anticipated capital projects, their funding requirements, and makes preliminary determinations of cash-flow allocations. For the collection system, the 5-year CIP projection looks at the five-year funding projections for both the ongoing annual repair/rehabilitation projects and the ongoing long-term improvement projects, as discussed above.

9. MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS

9.1 Element 9 Regulatory Requirement

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

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

9.2 Overview

This section of the SSMP discusses how the District measures the effectiveness of SSMP elements and monitors their implementation. Effectiveness is measured by developing and tracking performance indicators on a regular basis. The District compiles this information on a monthly basis, as summarized in its Collection System Operations reports, and summarizes the information annually as part of its end-of-year Operations Report as well as Annual Report to CIWQS due April 1 each year. The data are also reviewed in detail as part of its triennial SSMP audits. The District uses this information to identify and implement needed modifications to its collection system operation, maintenance, and management programs.

9.3 Key Performance Indicators

As shown in its Collection System Operations reports, the District tracks key performance indicators related to operation, maintenance, and management of the sewer system, including sewer cleaning, inspection, and pump station maintenance, service calls and response times, as well as other benchmarks. An Excel file is maintained with this data going back to 2007, including graphs that show annual trends as well as graphs of cleaning, inspection, and stoppages on a monthly basis for each year compared to the previous year. Maintaining and regular monthly reporting of this type of information allows the District to quickly identify any spill trends or other issues in the system and update its O&M and capital programs as needed based on performance. In addition, the O&M group holds weekly meetings so that staff can report any issues from the field.

Key performance indicators that are tracked include:

- Number of dry weathers spills over the past 12 months (12-month average)
- Number and characteristics of wet weather spills over the past 12 months
- Spills by cause (e.g. roots, grease, debris, pipe failure, pump station failure, capacity, other)
- Volume distribution of spills (e.g. number of spills < 100 gallons, 100 to 999 gallons, 1,000 to 9,999 gallons, > 10,000 gallons)

- Annual volume of spills
- Average time to respond to a spill
- Total feet inspected by year
- Record of past repair, rehabilitation, and replacement projects
- Record of planned repair, rehabilitation, and replacement projects
- Plans developed for, or implementation of, activities to target specific problems identified, such as roots, structural deficiencies, or fats, oil, and grease (FOG)
- Record of FOG outreach and corrective actions

9.4 Monitoring, Tracking and Reporting.

The District uses the ICOM3 computerized maintenance management system (CMMS) to track maintenance, spills and other related activities. (Note: the District is in the process of selecting a new CMMS software, expected to be implemented in 2026.) The CMMS also manages CCTV inspection data. Historic maintenance data can be digitally linked to GIS for analysis of repeat problem areas. This process allows the District to adjust maintenance activities to prevent stoppages and develop data for annual reporting and triennial audits required for the SSMP. The system allows for developing a history of operation of assets that help identify approaching problems in operation and allow investigation and correction evaluation to prevent stoppages and spills.

9.4.1 Monitoring

Target performance levels are established at the start of the budget year. Maintenance activities are recorded in the CMMS database for asset management purposes. Information is stored on a per asset basis by activity type for tracking the performance and maintenance history of the individual assets of the sanitary sewer system.

The District's objective with the maintenance system is to collect all of the physical, hydraulic, and structural and condition information of the assets of the sanitary sewer collection system. Asset information can then be updated at the next cleaning or condition assessment activity.

9.4.2 Tracking

Tracking is measurement of the annually targeted unit measures of performance of maintenance activities and those achieved by the District collection system crews, to provide a basis for comparison. Activities tracked include cleaning work orders generated and completed, CCTV footage, the number, type, and volume of overflows, total amount of sewer cleaned and the rate of cleaning, and the number of callouts and the response times associated with those events. Monthly reporting and performance comparisons are the subjects of the monthly maintenance activities performance report prepared by the Collection System Superintendent. The tracking function further measures increasing levels of asset damage being incurred over time as provided by CCTV inspections. Results can be tracked in separate reports at the end of the calendar year as required.

9.4.3 Reporting

A Collection System activity performance report is distributed each month for feedback from management and responsible supervisors. The periodic feedback by these individuals to the Collection System Superintendent is used to solicit ideas and changes in current operations to likely enhance performance and productivity of the maintenance crews. Monthly reporting by the Collection System Supervisor is supplemented at year end with the Annual Collection System Activity Performance Report; this Program status information may be included in the Collection System annual report or required compliance documentation used to summarize performance and objectives met each year. The Annual Report also provides a record of maintenance performance as it relates to unit costs and can display the relationship of cost per cleaning volume, the number, type and severity of spills, callouts and the costs associated with unscheduled unforeseen events.

The District's Board of Directors receives a monthly update of the performance of the Collections System department against performance parameters including but not limited to (a) employee hours worked, (b) productivity, (c) stoppages, (d) benchmarks (total footage, average footage, total stoppages/100 miles, spill gal/100 miles, callouts/100 miles, overtime/100 miles, etc.). These regular meetings create staff accountability to the Board of Directors, which helps to maintain focus on SSMP performance.

9.5 Adaptive Management/Continuous Improvement

The complete history of collection system maintenance operations and performance is housed in the CMMS database. The objective is to provide all of the collection system staff with information on the initial and ongoing problems being identified in the system, and further bring engineering, maintenance and financial resources into a mutually supported action plan designed for timely decisions and actions to address corrective needs of the system and achieve the compliance goals of the SSMP.

District senior staff and management utilize this information, as well as the other data products produced throughout the year, to periodically review performance of the SSMP elements. There is a focus on the preventive maintenance program to ensure that District resources are being allocated efficiently. The SSMP performance review also looks at spill trends including frequency, location, volume, and cause. This helps the District to analyze hotspot locations and cleaning frequency, resources, and general areas where additional attention is required. The outcome of the review may lead to changes in the SSMP to continue to improve collection system performance in a fiscally responsible manner.

10. INTERNAL AUDITS

10.1 Element 10 Regulatory Requirement

The SSMP must include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of the 2022 General Order. Section 5.4 requires that the internal audit be conducted every three years and must include system operators. The audit must be submitted and certified by the LRO in CIWQS. The audit should:

- Evaluate the implementation and effectiveness of the SSMP in preventing spills;
- Evaluate compliance with the GWDR;
- Identify SSMP deficiencies in addressing ongoing spills and discharges to water of the State;
- Identify necessary modifications to the SSMP to correct deficiencies.

10.2 SSMP Audit

The District regularly performs audits of its SSMP in accordance with the GWDR. The Audit addresses collection system performance and SSMP effectiveness, and includes:

- Statistics on the number, volume, and causes of spills and response times;
- Summaries of cleaning and inspection productivity;
- Lists of collection system improvement projects completed and planned;
- Narrative discussion of SSMP compliance for each SSMP element;
- Table of corrective actions and associated target completion dates.

The District's most recent audit was completed in January 2025. **Appendix H** includes a copy of the most recent audit report.

11. COMMUNICATION PROGRAM

11.1 Element 11 Regulatory Requirement

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

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

11.2 District's Communication Plan

11.2.1 District Website/Social Media

The District maintains a website (www.novatosan.com) and a Facebook page to inform the public about its activities. Typical information available on the website includes general information about the District (including its collection system), District regulations, ordinances and codes, permit forms, pollution prevention materials, community links, and general water education information. The website also serves to update the public on the District's construction projects or as a tool to convey any late-breaking news. Contact information for the District as well as individual staff members is available on the website. Viewers can also contact the District directly via an e-mail web-link on the website.

The District also provides a summary of its sewer spills on its website at the following link: https://novatosan.com/services/district-sewer-overflows/. This link is updated monthly, to reflect at least the prior 12 months of spill related information.

11.2.2 Newsletters, Press Releases, etc.

The District publishes periodic newsletters and issues periodic press releases to the local newspapers (the Marin Independent Journal, the Novato Advance, the Pacific Sun and Novato Patch), the Novato chamber of Commerce, and the Downtown Novato Business Association, to inform the public about its activities. Information on the development and implementation of SSMP elements are included in the District's newsletter. Past newsletters can be found on the District website at the following link: https://novatosan.com/info/posts/category/enews/.

District staff reports on the progress of SSMP development and implementation periodically at the District's Board Meetings, which are held monthly (on the second Monday of the month) and are open to the public. Staff also updates the Board as applicable on the status of collection system projects, as they are planned and executed. Board meeting minutes are available on the District website here: http://www.novatosan.com/board-agendas-and-minutes/agendas-and-minutes.

11.2.3 Mailings and Mailing Lists

The District maintains a subscription database for the distribution of its e-newsletter. The District also maintains a database of interested entities that request agenda packages for its Board meetings for generic or specific reasons. Board meeting packages are distributed electronically to these parties.

11.2.4 Spill Notification

Section 8.4 of the District's Spill Emergency Response Plan (**Appendix D**) describes the District's procedures for notification of the public during spill events.

11.2.5 Satellite and Tributary Systems

The District owns, operates and maintains its own collection system. There are small collection systems owned by others that are tributary to the District collection system. These tributary systems are:

- Los Robles Mobile Home Park
- College of Marin Indian Valley Campus
- Coast Guard housing complex

These tributary systems are small, low-flow systems. Communication with these systems is consistent with the approach used for the general public.

APPENDIX A: Change Log

Appendix A: SSMP Change Log

Date	SSMP Element #	Description of Change / Revision Made	Person Authorizing Change

APPENDIX B: Example Plumber Outreach Flyer

Novato Sanitary District, 500 Davidson Street, Novato, CA 94945 (415) 892-1694 www.novatosan.com

Plumbers & Sewer Contractors:

Help Prevent Sanitary Sewer Overflows!

What are Sanitary Sewer Overflows or SSOs?

SSOs discharge untreated human and industrial waste, debris and disease-causing organisms from the sanitary sewer onto the ground and into homes and potentially into creeks, rivers, lakes or streams. SSOs are caused by root balls, debris, grease, wipes blocking the sewer, or by unusually high flows.

What are the impacts of SSOs?

SSOs may result in property damage, environmental damage and potential liability to you or your company. Allowing sewage to discharge to a gutter, storm drain or waterway may subject you to penalties or out-of-pocket costs to reimburse cities or public agencies for clean-up efforts and regulatory penalties.

How can you prevent SSOs?

When clearing plugged sewer laterals:

- ☑ Remove root balls, grease blockages and any other debris from the sewer
- ☑ If you can't prevent a root ball or grease from entering the sewer main when working in our service area, **please call us at (415) 892-1694**, so we can work with you (free of charge) to remove the blockage from the sewer main to prevent blockages further downstream.
- ☑ Use plenty of water to flush lines.

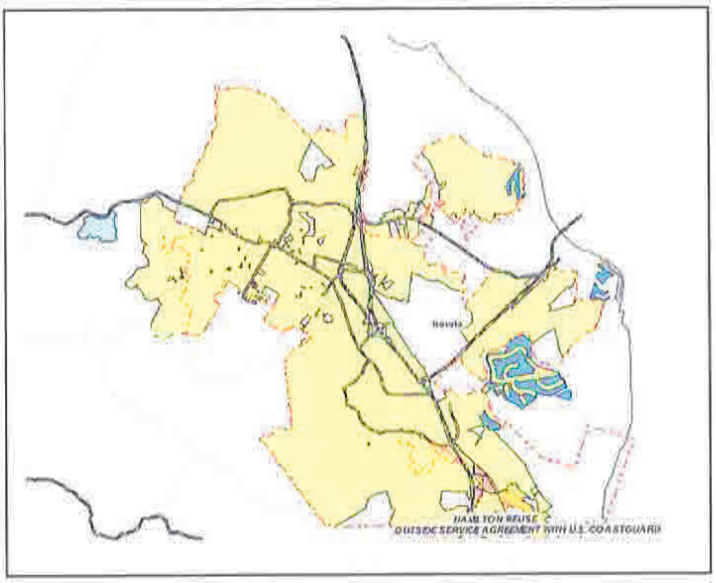
When constructing or repairing sewer laterals:

- ☑ **In Novato, contact us at 500 Davidson St. Novato CA 94945, (415) 892-1694 for a permit and lateral specifications. For additional details, see our website: www.novatosan.com.**
- ☑ Check your work area. Gravel, backfill material and test plugs can become lodged in the sewer line and cause blockages. Make sure no debris is left in the sewer line before you backfill.
- ☑ Avoid offset joints – offset joints make sewer lines vulnerable to root intrusion & grease accumulation, cause debris hang-ups and make lines harder to clean. Properly bed your joints and don't hammer tap.

Who Do I Call If I See a Sanitary Sewer Overflow?

NOVATO SANITARY DISTRICT

(415) 892-1694



Bay Area Clean Water Agencies
A Joint Powers Public Agency

BAPPG

APPENDIX C: Emergency Equipment & Spare Parts

Appendix C:
Emergency Equipment Resources

Last Updated: 12/11/24

Item	Specifics	ID#	Qty	Location/Assigned to
Escape Breathing Air	EBA rescue air packs		3	Pump Station Service Truck (1) Collections Department Office (2)
Gas Detectors	RKI Instruments 4-gas meters		8	Collections Department Office
Portable Pumps and hoses.	Trailer mounted 4" Screwsucker pump Suction: 100' Discharge: 750' 4-inch pump trailer, Gorman Rupp w/ Deutz diesel engine Trailer mounted Godwin 6" dri-prime pump Suction: 100' Discharge: 1800'	3409 3414	1 1 1	NSD Treatment Plant NSD 300', Olive 450' Reclamation Sludge Lagoons NSD Treatment Plant NSD 1100' Irrgtn 700'
Air Compressor	Trailer-mounted Ingersoll-Rand air compressor	Veolia	1	NSD Treatment Plant
Portable Generators	Trailer mounted Kohler MQ 20 kW generator 240v 1 phase	3306	1	NSD Treatment Plant
	240V 3 Phase: Trailer mounted Kohler 20 kW generator	3302	1	NSD Treatment Plant
	240V 3 Phase: Trailer mounted Kohler 30 kW generator Trailer mounted Kohler 30 kW generator Trailer mounted Kohler 30 kW generator	 3303 3312 3313	 1 1 1	 NSD Treatment Plant NSD Treatment Plant NSD Treatment Plant
	240V 3 Phase: Trailer mounted MQ power 45 kW generator Trailer mounted Kohler 40kW generator Trailer mounted Kohler 40kW generator	 3307 3311 3310	 1 1 1	 NSD Treatment Plant NSD Treatment Plant NSD Treatment Plant
	Trailer mounted Generac 144kW generator (208/240/480V) Trailer mounted Cummins 200 kW generator (208/480V) Trailer mounted Generac 75KW generator (208/240/480V)	3315 3314 3316	1 1 1	NSD Treatment Plant Olive Pump Station NSD Treatment Plant

Item	Specifics	ID#	Qty	Location/Assigned to
	Honda E1000i generator Honda E2000i generator Honda EU3000i generator Honda EM3500X generator		1 2 1 1	NSD Treatment Plant NSD Treatment Plant NSD Treatment Plant NSD Treatment Plant
Pickup Trucks	2002 Dodge Dakota	Veolia	1	Laboratory
	2007 Ford 4X4 Extra Cab	3129	1	Electrician
	2016 Ford F-250 2x4 w/fuel transfer tank 2018 Ford Supercab F150 2x4 2019 Ford supercab F250 4x4 w/ trans tank 2019 Ford supercab F250 4x4 w/ trans tank 2019 Nissan Frontier 2021 Ford supercab F250 4x2 w/ trans tank 2023 Ford Xtra Cab F150 4x4 2024 Toyota Tacoma 4x2	3133 3136 3137 3138 3139 3140 3145 3144	1 1 1 1 1 1 1 1	Collections Collections Supt. Collections Field Services Manager E/I Tech Collections Inspections Collections Standby
Passenger	2021 Ford Explorer 4x4	3142	1	General Manager
Vehicles	2017 Ford Fusion hybrid 2021 Toyota Rav 4 Hybrid 2023 Prius LE Hybrid	3134 3141 3143	1 1 1	Administration Deputy General Mgr. Administration
Utility Truck	2023 Dodge 5500 Service Crane Truck	3212	1	Collections
Sewer Maintenance Vehicles	2014 International Terrastar rodder 2017 Ford F-550 US Jetter 2021 Kenworth Vactor Combo unit 2022 Kenworth Vactor Combo Unit	3208 3209 3210 3211	1 1 1 1	Collections Collections Collections Collections
CCTV Camera Van	2018 Ford 350 Transit	3135	1	Collections
Portable 2-Way Radios	Motorola		12	Collections Dept. Office
Confined Space Equipment	DBI/SALA davit style hoist and winches 3 fall arrest/hoist + 2 winch/hoist only		5	Pump Station Service Truck and Confined Space Conex Box
Miscellaneous	Davit arm lift w/winch (equipment lift)		1	Ignacio

APPENDIX D Spill Emergency Response Plan

Novato Sanitary District

Sewer Spill Emergency Response Plan

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1. PURPOSE

The purpose of the Novato Sanitary District Spill Emergency Response Plan (SERP) is to support a prompt, orderly and effective response to spills (sanitary), reduce spill volumes, and collect information for prevention of future spills. A "spill" in this document is defined, by State Water Board Order No. WQ 2022-0103-DWQ as 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.

The SERP provides guidelines for District personnel to follow in responding to, cleaning up, reporting, and properly documenting spills that may occur within the District's service area. This SERP satisfies the State Water Board Order No. WQ 2022-0103-DWQ, which require wastewater collection agencies to have a Spill Emergency Response Plan.

Additionally, the SERP outlines procedures for responding to sanitary sewer spill backups into structures as required by the District's insurer. See definitions. "Backup" is a term typically used by insurers to describe property damage resulting from exposure and contact to untreated or partially treated sewage.

2. POLICY

The District's employees are required to report all spills from agency owned sewer mains and publicly owned laterals found and to take the appropriate action to secure the spill area, properly report to the appropriate regulatory agencies, relieve the cause of the spill, and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and protect the environment. The District's goal is to respond to sewer system spills as soon as possible following notification. The District will follow reporting procedures regarding sewer spills as set forth by the San Francisco Regional Water Quality Control Board and the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

3. DEFINITIONS AS USED IN THIS SERP

ANNUAL REPORT: An Annual Report (previously termed as Collection System Questionnaire in previous State Water Board Order No. 2006-0003-DWQ) is a mandatory report in which the District provides a calendar-year update of its efforts to prevent spills.

BASIN PLAN: A Basin Plan is a water quality control plan specific to a Regional Water Quality Control Board (Regional Water Board), that serves as regulations to: (1) define and designate beneficial uses of surface and groundwaters, (2) establish water quality objectives for protection of beneficial uses, and (3) provide implementation measures.

BENEFICIAL USES: The term "Beneficial Uses" is a Water Code term, defined as the uses of the waters of the State that may be protected against water quality degradation. Examples of beneficial uses include but are not limited to, municipal, domestic, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

CALIFORNIA INTEGRATED WATER QUALITY SYSTEM (CIWQS): CIWQS is the statewide database that provides for mandatory electronic reporting as required in State and Regional Water Board-issued waste discharge requirements.

DATA SUBMITTER: A Data Submitter is an individual designated and authorized by the District's Legally Responsible Official to enter spill data into the online CIWQS Sanitary Sewer System Database. A Data Submitter does not have the

authority of a Legally Responsible Official to certify reporting entered into the online CIWQS Sanitary Sewer System Database.

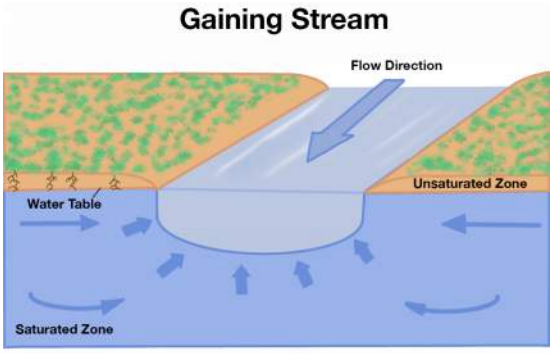
DRAINAGE CONVEYANCE SYSTEM: A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater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

ENVIRONMENTALLY SENSITIVE AREA: An environmentally sensitive area is a designated agricultural and/or wildlife area identified to need special natural landscape protection due to its wildlife or historical value.

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

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

HYDROLOGICALLY CONNECTED: Two waterbodies are hydrologically connected when one waterbody flows, or has the potential to flow, into the other waterbody. For the purpose of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), groundwater feeds into the surface water. The surface waterbody in this example is termed a gaining stream as it gains flow from surrounding groundwater. See image, right.



LATERAL (INCLUDING LOWER AND UPPER LATERAL): A lateral is an underground segment of smaller diameter pipe that transports sewage from a customer's building or property (residential, commercial, or industrial) to the District's main sewer line in a street or easement. Upper and lower lateral boundary definitions are subject to local jurisdictional codes and ordinances, or private system ownership. A lower lateral is the portion of the lateral located between the sanitary sewer system main, and either the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations. An upper lateral is the portion of the lateral from the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations, to the building or property.

LEGALLY RESPONSIBLE OFFICIAL: A Legally Responsible Official is an official representative, designated by the District, with authority to sign and certify submitted information and documents required by this General Order.

MAINLINE SEWER: Refers to District wastewater collection system piping downstream of the sewer laterals that is not a private sewer lateral connection to a building.

MAINTENANCE HOLE OR MANHOLE: Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection

NOTIFICATION OF A SPILL: Refers to the time at which the District becomes aware of a spill event through observation or notification by the public or other source.

NUISANCE: For the purpose of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), a nuisance, as defined in Water Code section 13050(m), is anything that meets all of the following requirements:

- Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;

- Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and
- Occurs during, or as a result of, the treatment or disposal of wastes.

PREVENTATIVE MAINTENANCE: Refers to maintenance activities intended to prevent failures of the wastewater collection system facilities (e.g. cleaning, CCTV, inspection).

PRIVATE LATERAL SEWAGE SPILL – Spills that are caused by blockages or other problems within a privately-owned lateral.

PRIVATE SANITARY SEWER SYSTEM: A private sanitary sewer system is a sanitary sewer system of any size that is owned and/or operated by a private individual, company, corporation, or organization. A private sanitary sewer system may or may not connect into a publicly owned sanitary sewer system.

PRIVATE SEWER LATERAL: A private sewer lateral is the privately-owned lateral that transports sewage from private property(ies) into a sanitary sewer system.

POTENTIAL TO DISCHARGE, POTENTIAL DISCHARGE: Potential to Discharge, or Potential Discharge, means any exiting of sewage from a sanitary sewer system which can reasonably be expected to discharge into a water of the State based on the size of the sewage spill, proximity to a drainage conveyance system, and the nature of the surrounding environment.

RECEIVING WATER: A receiving water is a water of the State that receives a discharge of waste.

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

- Laterals owned and/or operated by the District;
- 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.

For purpose of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), sanitary sewer systems include only systems owned and/or operated by the District.

SATELLITE SEWER SYSTEM: A satellite sewer system is a portion of a sanitary sewer system owned or operated by a different owner than the owner of the downstream wastewater treatment facility ultimately treating the sewage.

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

SEWER BACKUP A sanitary sewer spill resulting from a sanitary sewer system overflow, operational failure, and/or infra-structure failure in a publicly owned sewer system, with an appearance point and subsequent discharge into a structure.

SPILL: A spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system over-flow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a spill under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

- **Category 1 Spill:**

  A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) that results in a discharge to:

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

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

  A spill from an District-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the District shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

- **Category 2 Spill**

  A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) that does not discharge to a surface water. A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.

- **Category 3 Spill**

  A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) that does not discharge to a surface water. A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.

- **Category 4 Spill**

  A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR) that does not discharge to a surface water. A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.

- **Non-Category 1 Enrollee Owned/Operated Lateral Spills**
  A spill of any volume from an Enrollee's owned and/or operated lateral that is caused by a failure or blockage in the lateral and that do not discharge to a surface water.

TRAINING: Training is in-house or external education and guidance needed that provides the knowledge, skills, and abilities to comply with the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).
WASH DOWN WATER: Wash down water is water used to clean a spill area.

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

WATERS OF THE STATE: Waters of the State are surface waters or groundwater within boundaries of the state as defined in Water Code section 13050(e), in which the State and Regional Water Boards have authority to protect beneficial uses. Waters of the State include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes and pools, wetlands, sloughs, and estuaries, regardless of flow or whether water exists during dry conditions. Waters of the State include waters of the United States.

WATERS OF THE UNITED STATES: Waters of the United States are surface waters or waterbodies that are subject to federal jurisdiction in accordance with the Clean Water Act.

WATER QUALITY OBJECTIVE: A water quality objective is the limit or maximum amount of pollutant, waste constituent or characteristic, or parameter level established in statewide water quality control plans and Regional Water Boards' Basin Plans, for the reasonable protection of beneficial uses of surface waters and groundwater and the prevention of nuisance.

4. STATE REGULATORY REQUIREMENTS FOR ELEMENT 6, SPILL EMERGENCY RESPONSE PLAN

The Sewer System Management Plan (SSMP) must include an up to date Spill Emergency Response Plan (SERP) to ensure prompt detection of and response to spills to reduce spill volumes and collect information for prevention of future spills. The SERP 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 State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the SERP 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 it as needed.

The Sewer System Management Plan is available to the public at https://novatosan.com/info/documents/.

5. SPILL EMERGENCY RESPONSE PLAN OBJECTIVES

The Spill Emergency Response Plan includes measures to protect public health and the environment. The District will respond to spills from its system(s) in a timely manner that minimizes water quality impacts and nuisance by:

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

Additionally, District Staff will:

- Work safely;
- Properly document each spill event in a separate file including photos and/or video where applicable;
- Collect information for prevention of future spills;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the spill;
- Meet the regulatory reporting requirements;
- Evaluate the causes of failure related to spills;
- Perform post-spill response evaluation for adherence to procedures and effectiveness of response; and
- Revise response procedures, modify maintenance practices or provide additional training based on the results from the debrief and failure analysis of spills, if needed.

6. SPILL DETECTION AND NOTIFICATION

ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR)*, ATTACHMENT D, Element 6, Page D-6*

The processes that are employed to notify the District of the occurrence of a spill include: observation by the public, receipt of an alarm, or observation by District staff during the normal course of their work.

6.1 LIFT STATION ALARMS

The District operates 39 wastewater lift stations. In the event of a station failure the SCADA alarm system is activated and the District is contacted. To prevent spills, wastewater from the wet well can either be pumped into a vacuum truck for disposal to a nearby sanitary sewer manhole or bypassed around the station into the sanitary sewer system.

6.2 PUBLIC OBSERVATION

Public observation is the most common way that the District is notified of blockages and spills. Contact numbers and information for reporting sewer spills and backups are on the District's website: https://novatosan.com]. The District's telephone number for reporting sewer problems is (415) 892-1694.

- Normal Work Hours: When a report of a sewer spill or backup is made the call is routed to the Collections System Superintendent. If unavailable, the call is routed to the Collections System

Leadworker. Whoever initially takes the call at the front desk will complete the service call form, regardless of complaint type. This form is routed to Collections System Superintendent or Collections System Leadworker. They will complete the form based on the results of the service call. The Collections System Superintendent or Collections System Leadworker will file the form in the Completed Service Call Binder.

- After Hours: After hours the main number directs the caller to call Police Dispatch at (415) 897-1122.

When calls are received, either during normal work hours or after hours, the individual receiving the call will collect and include in the spill event file, at a minimum, the following information to record the complaint:

- Date, time, and method of notification,
- Date and time the complainant first noticed the spill, if available,
- Narrative description of the complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system, if available,
- Complainant's contact information, if available, and
- Final resolution of the complaint.

If the spill or backup is not in the District's service area the individual receiving the call provides the customer with the contact information for the responsible agency, and then notifies that agency.

If the spill or backup is in the District's service area, the Collections Crew (during business hours) or standby employee (after hours) will respond to the address of the complaint and do an investigation. If the complaint is not a spill, the crew members' findings and actions taken, if any, are logged into the District's Service Call Report and placed in the Service Call Report Binder. If the complaint is a spill, the crew member will complete the Sanitary Sewer Spill and Backup Response Workbook and then enter the findings and actions taken into the District's Service Call Report ns companion Spill Report and placed in the service Call Report Binder and saved to the District's server.

6.3 DISTRICT STAFF OBSERVATION

District staff conducts periodic inspections of its sewer system facilities as part of their routine activities. Any problems noted with the sewer system facilities are reported to appropriate District staff that, in turn, responds to emergency situations. Work orders are issued to correct non-emergency conditions.

6.4 CONTRACTOR OBSERVATION

Contractors working on the District sewer system will be informed of contractor spill response procedures. Contractors working on behalf of property owners will be provided spill response information by the District main office when they pull a permit. The following procedures are to be followed in the event that a contractor/plumber causes or witnesses a sanitary sewer spill. If the contractor/plumber causes or witnesses a spill they should:

1. Immediately notify the District at (415) 892-1694 and provide the following information if available:
    a. Date, time contractor first noticed the spill
    b. Description of the contractor's observation, including any information regarding whether the

spill has reached surface waters or a drainage conveyance system

c. Contractor's contact information

2. Protect storm drains.
3. Protect the public.
4. Direct ALL media and public relations requests to the General Manager-Chief Engineer.

6.5 NO OBSERVATION

If there are no witnesses or no call was received for a spill, the District staff will contact nearby residences or business owners in the vicinity of the spill, in an attempt to obtain information that brackets a given start time that the spill began. This information will be collected and documented on the Sanitary Sewer Spill Report in the Sanitary Sewer Spill/Backup Response Workbook.

7. SPILL RESPONSE PROCEDURES *(Ref.* State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR)*, ATTACHMENT D Element 6 page D-6)*

7.1 SEWER OVERFLOW/BACKUP RESPONSE SUMMARY

The District will respond to spills as soon as feasible following notification of a spill/backup.

If it is not possible that the spill/backup is due to a failure in the District-owned/maintained sewer lines the Collections Crew performs the following:

- Follows the instructions in the Sanitary Sewer Spill/Backup Response Workbook.
- If the customer is not home the Collections Crew completes the Door Hanger and leaves it on the customer's door.
- If the customer is home the Collections Crew:
    - Explains that the blockage is in the customer's lateral and the District does not have legal authority to maintain or perform work on privately owned laterals.
    - Recommends to the customer that they hire a licensed contractor to clear their line.
    - Gives the customer the Your Responsibilities as a Private Property Owner pages from the Sanitary Sewer Spill/Backup Response Workbook.

If it is possible that the spill/backup is due to a failure in the District-owned/maintained sewer lines the Collections Crew:

- Follows the instructions in the Sanitary Sewer Spill/Backup Response Workbook.
- Notifies Collection System Superintendent, the Field Services Manager, or the Deputy General Manager of the incident.
- Relieves blockage and cleans impacted areas.
- Forwards the completed Sanitary Sewer Spill/Backup Response Workbook to the Collections System Superintendent.

The Collections System Superintendent performs required regulatory reporting in accordance with the Sanitary Sewer Spill/Backup Response Workbook's Regulatory Reporting section.

If the overflow has impacted private property, the Collections Crew:

- Follows the instructions in the Sanitary Sewer Spill/Backup Response Workbook.
- Provides the customer with forms and information as indicated in the Sanitary Sewer Spill/Backup Response Workbook.
- Forwards the completed Sanitary Sewer Spill/Backup Response Workbook to the Collections System Superintendent.

The Collections System Superintendent notifies the General Manager-Chief Engineer of incident.

The General Manager-Chief Engineer or designee:

- Reviews incident reports, claim form and other incident information and forwards, as appropriate, to Carl Warren & Co. c/o Alan Dialon.
- Communicates with claimant as appropriate.
- Communicates with Carl Warren & Co. c/o Alan Dialon to adjust and administer the claim to closure.
- Properly documents in writing all activities and communications before approving the final event file.

7.2 FIRST RESPONDER PRIORITIES

The first responder's priorities are:

- Prompt response to spills.
- To follow safe work practices.
- To respond promptly with the appropriate and necessary equipment.
- To reduce spill volume and contain the spill wherever feasible.
- To restore the flow as soon as practicable.
- To minimize public access to and/or contact with the spilled sewage.
- To promptly notify the Collections System Superintendent in event of a spill needing additional resources, and/or impacting environmentally sensitive areas.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible). Collect information for the prevention of future spills.
- Properly document the spill and response activities on the forms provided in the Sanitary Sewer Spill/Backup Response Workbook, including photos and/or video where practicable.

7.3 SAFETY

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. There may be times when District personnel responding to a sewer system event are not familiar with potential safety hazards peculiar to sewer work. In such cases it is appropriate to

take the time to discuss safety issues, consider the order of work, and check safety equipment before beginning response activities.

If the first responders encounter access restrictions or unsafe conditions that prevent its compliance with spill response requirements or monitoring requirements in this General Order, the District provides written documentation of access restrictions and/or safety hazards in the corresponding required report.

7.4 INITIAL RESPONSE

The first responder must respond to the site of the spill/backup and visually check for potential sewer stoppages. The first responder will:

- Note arrival time at the site of the spill/backup.
- Verify the existence of a public sewer system spill or backup.
- Identify and assess the affected area and extent of spill.
- Assess the spill location(s) and spread using photography, global positioning system (GPS), and other best available tools.
- Contact caller if time permits.
- Document the spill according to the requirements described in Section 10 of this SERP, including taking photos and/or videos of overflowing manhole(s)/cleanout(s).
- Take steps to contain, recover, and return the spill to the sanitary sewer as feasible. For procedures refer to the Sanitary Sewer Spill/Backup Response Workbook.
- Protect surface waters to the extent practicable. For procedures refer to the Sanitary Sewer Spill/Backup Response Workbook.
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event.

7.5 INITIATE SPILL CONTAINMENT MEASURES

The first responder will attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the overflowing sewage.
- Plug storm drains using air plugs, sandbags, and/or plastic mats to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Vacuum retrieve sewage whenever practicable.
- Pump around the blockage/pipe failure.

Containment efforts will be documented. For procedures refer to the Sanitary Sewer Spill/Backup Response Workbook.

7.6 RESTORE FLOW

Using the appropriate cleaning equipment, set up downstream of the blockage and hydro-clean upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not reoccur downstream. If the blockage cannot be cleared within a reasonable time from arrival, or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If other assistance is required, immediately contact the Collections System Superintendent. For procedures refer to the Sanitary Sewer Spill/Backup Response Workbook.

7.7 EQUIPMENT

This section provides a list of specialized equipment that may be used to support this Spill Emergency Response Plan.

- *Closed Circuit Television (CCTV) Inspection Unit* – A CCTV Inspection Unit is required to determine the root cause for all spills from gravity sewers.
- *Camera* -- A digital or disposable camera (photo, video or phone) is required to record the conditions upon arrival, during clean up, and upon departure.
- *Emergency Response Trucks* -- A utility body pickup truck, or open bed is required to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools will include containment and clean up materials.
- *Portable Generators, Portable Pumps, Piping, and Hoses* – Equipment used to bypass pump, divert, or power equipment to mitigate a spill.
- *Combination Sewer Cleaning Trucks* -- Combination high velocity sewer cleaning trucks with vacuum tanks are required to clear blockages in gravity sewers, vacuum spilled sewage, and wash down the impacted area following the spill event.
- *Air plugs, sandbags and plastic mats*
- *Spill Sampling Kits*
- *Portable Lights*

8. RECOVERY AND CLEANUP *(Ref.* State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR)*, Element 6, ATTACHMENT D, Page D-6)*

The recovery and cleanup phase begins immediately after the flow has been restored and the spilled sewage has been contained to the extent possible. The spill recovery and cleanup procedures are described in the following sections.

8.1 ESTIMATE THE FLOW AND VOLUME OF SPILLED SEWAGE

A variety of approaches exist for estimating the volume of a sanitary sewer spill. The Collections Crew members should use the method most appropriate to the sewer overflow in question and reference the Sanitary Sewer Spill/Backup Response Workbook which provides four (4) methods:

- Eyeball Estimation Method
- Duration and Flow Rate Calculation Method
- Area/Volume Method
- Upstream Connections Method

In addition, the following will be documented on the Sewer Spill Report form:

1. Description, photographs, and GPS coordinates of the system location where the spill originated. If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
2. Estimated total spill volume exiting the system;
3. Description and photographs of the extent of the spill and spill boundaries;
4. Did the spill reach a drainage conveyance system? If yes:
    - Description of the drainage conveyance system transporting the spill;
    - Photographs of the drainage conveyance system entry location(s);
    - Estimated spill volume that reached the drainage conveyance system;
    - Estimated spill volume fully recovered from the drainage conveyance system;
    - Estimated spill volume remaining within the drainage conveyance system
    - Estimated spill volume discharged to a groundwater infiltration basin or facility, if applicable;
    - Estimated spill travel time from the point of entry into the drainage conveyance system to the point of discharge into the receiving water.
5. Estimated total spill volume recovered.

8.2 RECOVERY OF SPILLED SEWAGE

Vacuum up and/or pump the spilled sewage and wash down water and discharge it back into the sanitary sewer system. Thoroughly recover and dispose of sewage and wash down water.

8.3 CLEAN-UP AND DISINFECTION

Clean up procedures will be implemented to reduce the potential for human health issues and adverse environmental impacts associated with a spill event. The procedures described are for dry weather conditions and will be modified as required for wet weather conditions. Where cleanup is beyond the capabilities of District staff, a cleanup contractor will be used.

Private Property

District crews are responsible for the cleanup when the property damage is minor in nature and is outside of private building dwellings, such as in front, side and backyards, easements, etc. In all other cases, affected property owners can call a water damage restoration contractor to complete the cleanup and restoration. If the overflow into property is the definite cause of District system failure, the property owner can call out a water damage restoration contractor to complete the cleanup and restoration. In both cases, property owners may submit a claim form.

Hard Surface Areas

Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Wash down the affected area with clean water and/or deozyme or similar non-toxic biodegradable surface disinfectant until the water runs clear. The flushing volume will be approximately three times the estimated volume of the spill. Take steps to contain and vacuum up the wastewater. Allow area to dry. Repeat the process if additional cleaning is required.

Landscaped and Unimproved Natural Vegetation

Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Wash down the affected area with clean water until the water runs clear. The flushing volume will be approximately three times the estimated volume of the spill. Either contain or vacuum up the wash water so that none is released. Allow the area to dry. Repeat the process if additional cleaning is required.

Natural Waterways

The Department of Fish and Wildlife will be notified by CalOES for spills greater than or equal to 1,000 gallons. For spills less than 1,000 gallons, contact Marin County Environmental Health Services for direction.

Wet Weather Modifications

Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Omit flushing and sampling during heavy storm events (i.e., sheet of rainwater across paved surfaces) with heavy runoff where flushing is not required and sampling would not provide meaningful results.

8.4 PUBLIC NOTIFICATION

Signs will be posted and barricades put in place to keep vehicles and pedestrians away from contact with spilled sewage. Marin County Environmental Health Services instructions and directions regarding placement and language of public warnings will be followed. Additionally, the Collections System Superintendent will use their best judgment regarding supplemental sign placement in order to protect the public and local environment. Signs will not be removed until directed by Marin County Environmental Health Services or the Collections System Superintendent.

Creeks, streams and beaches that have been contaminated as a result of a spill will be posted at visible access locations until the risk of contamination has subsided to acceptable background bacteria levels. Document the number and location of posted signs. The area and warning signs, once posted, will be checked every day to ensure that they are still in place. Photographs of sign placement will be taken.

In the event that an overflow occurs at night, the location will be inspected first thing the following day. The field crew will look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

When contact with the local media is deemed necessary, the General Manager-Chief Engineer or their designee will provide the media with all relevant information.

9. WATER QUALITY *(Ref.* State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR)*, Element 6, Attachment A - DEFINITIONs page A-5, Attachment E1 2.3 through 2.4 pages E1-5 through E1-8)*

9.1 SURFACE WATERS OF CONCERN

The following waters of the State are in the District's service area:

- Novato Creek
- Arroyo Avichi
- Rush Creek

9.2 WATER QUALITY SAMPLING AND TESTING

For sewage spills in which an estimated 50,000 gallons or greater are discharged into a surface water, the District will conduct the following water quality sampling as soon as possible but no later than **18 hours** after the District's knowledge of a potential discharge to a surface water. Collect one water sample, each day of the duration of the spill, at:

- The DCS-001 location as described in section 9.5 (Receiving Water Sampling Locations) below, if sewage discharges to a surface water via a drainage conveyance system; and/or
- Each of the three receiving water sampling locations in section 9.5 (Receiving Water Sampling Locations) below;

If the receiving water has no flow during the duration of the spill, the District must report "No Sampling Due To No Flow" for its receiving water sampling locations.

The District lab staff (Operation and Maintenance (O/M) contractor via the Project Manager) will collect water quality samples in accordance with State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

The District lab staff (O/M contractor via the Project Manager) collecting the samples will complete the Chain of Custody prior to transferring ownership of the samples to the District lab or contract lab depending on worked and sample analyses needed.

The District lab or contract lab depending on worked and sample analyses needed shall analyze the collected receiving water samples for the following constituents:

- Ammonia, and
- Appropriate bacterial indicator(s) per the applicable Basin Plan water quality objectives, including one or more of the following from the table below, unless directed otherwise by the Regional Water Board: *ref. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), November 5, 2019*

Water Quality Objectives for Bacteria[a]				
Beneficial Use	**Fecal Coliform[a] (MPN/100mL)**	**Total Coliform[a] (MPN/100mL)**	**Enterococcus (CFU/100mL)g**	**E. coli (CFU/100mL)[g]**
Water Contact Recreation			geometric mean < 30 STV < 110	geometric mean < 100 STV < 320

Shellfish Harvesting[b]	median < 14 90th percentile < 43	median < 70 90th percentile < 230[c]		
Non-contact Water Recreation[d]	mean < 2000 90th percentile < 4000	geometric mean < 100		
Municipal Supply: Surface Water[e]	geometric mean < 20			
Municipal Supply: Groundwater		< 1.1[f]		

Notes:

a. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

b. Source: National Shellfish Sanitation Program.

c. Based on a five-tube decimal dilution test or 300 MPN/100 ml when a three-tube decimal dilution test is used.

d. Source: Report of the Committee on Water Quality Criteria, National Technical Advisory Committee, 1968.

e. Source: California Department of Public Health recommendation.

f. Based on multiple tube fermentation technique; equivalent test results based on other analytical techniques, as specified in the National Primary Drinking Water Regulation, 40 CFR, Part 141.21(f), revised June 10, 1992, are acceptable.

g. Numeric values are from Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California based on Section 7958 of Title 17 of the California Code of Regulations, 69FR 67217 et seq., and 40 CFR Part 131.41 (effective date December 16, 2004). The Enterococcus objective applies to marine and estuarine waters where the salinity is greater than 1 part per thousand more than 5 percent of the time. The E. coli objective applies to freshwaters where the salinity is equal to or less than 1 part per thousand 95 percent or more of the time. The geometric mean for enterococcus and E. coli is computed weekly for all samples in a 6-week interval. There is no fecal coliform objective to protect water contact recreation for inland surface waters, enclosed bays, or estuaries, but a fecal coliform objective protecting this use remains in the California Ocean Plan. The STV is the statistical threshold value and shall not be exceeded by more than 10 percent of the samples collected in a calendar month.

Dependent on the receiving water(s), sampling of bacterial indicators shall be sufficient to determine post-spill (after the spill) compliance with the water quality objectives and bacterial standards of the California Ocean Plan or the California Inland Surface Water Enclosed Bays, and Estuaries Plan, including the frequency and/or number of post-spill receiving water samples as may be specified in the applicable plans.

Surface water samples will be collected as directed by the Marin City Environmental Health Department. In absence of guidance from the City, the District will collect samples for spills 50k gal or greater. The District shall collect and analyze additional samples as required by the applicable Regional Water Board Executive Officer or designee.

9.3 LAB SELECTION

Analytical Lab

Samples collected for spill response and background monitoring purposes will be analyzed at District lab staff (O/M contractor via the Project Manager), which is accredited through the California State Water Resources

Control Board Environmental Laboratory Accreditation Program (ELAP). ELAP provides evaluation and accreditation of environmental testing laboratories to ensure the quality of analytical data used for regulatory purposes to meet the requirements of the State's drinking water, wastewater, shellfish, food, and hazardous waste programs. The State agencies that monitor the environment use the analytical data from these accredited labs. The ELAP-accredited laboratories have demonstrated capability to analyze environmental samples using approved methods.

Getting Samples to the Lab
At all times, sample hold times identified below will be observed in accordance with the following:

Analytical Parameter	Maximum Holding Time	Required Container Type	Required Preservative	Minimum Amount
Ammonia (NH3 as N); SM 4500NH3 B/C or B/G	28 days	Plastic / Glass	H_2SO_4 pH <2 +0-6°C	200 mL
Coliform, Total / Fecal; SM 9221 B/E	8 hours – wastewater/storm-water 30 hours – drinking water	Plastic (sterile)	$Na_2S_2O_3$ + 0-10°C; No regulatory temp. req. for drinking water)	100 mL
Coliform, Total / E.Coli; SM 9223 B (Present/Absent or Quantitray)	30 hours – drinking water	Plastic (sterile)	$Na_2S_2O_3$ + 0-10°C; No regulatory temp. req. for DW	100 mL
Enterococcus by Enterolert	8 hours	Plastic (sterile)	$Na_2S_2O_3$ + 0-10°C	100 mL

Once samples are collected, they will be transported by District lab staff (Operation and Maintenance (O/M) contractor via the Project Manager) to the lab to be processed.

9.4 WATER QUALITY ANALYSIS SPECIFICATIONS

Spill monitoring must be representative of the monitored activity (40 Code of Federal Regulations section 122.41(j)(1)).

Sufficiently Sensitive Methods

Sample analysis must be conducted according to sufficiently sensitive test methods approved under 40 Code of Federal Regulations Part 136 for the sample analysis of pollutants. For the purposes of this General Order, a method is sufficiently sensitive when the minimum level of the analytical method approved under 40 Code of Federal Regulations Part 136 is at or below the receiving water pollutant criteria.

Environmental Laboratory Accreditation Program-Accredited Laboratories

The analysis of water quality samples required per this General Order must be performed by a laboratory that has accreditation pursuant to Article 3(commencing with section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. (Water Code section 13176(a).) The State Water Board accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

9.5 RECEIVING WATER SAMPLING LOCATIONS

Receiving water samples shall be collected at the following locations.

Sampling of Flow in Drainage Conveyance System (DCS) Prior to Discharge

Sampling Location	Sampling Location Description
DCS-001	A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.

Receiving Surface Water Sampling (RSW)[1]

Sampling Location	Sampling Location Description
RSW-001: Point of Discharge	A point in the receiving water where sewage initially enters the receiving water.
RSW-001U: Upstream of Point of Discharge	A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.

Sampling Location	Sampling Location Description
RSW-001D: Downstream of Point of Discharge	A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

9.5 STREAM VELOCITY MEASUREMENTS

If sampling is performed after the spill has stopped, the velocity of the impacted surface water must be determined to estimate spill travel time and select an accurate Downstream sample location. One way to measure the spill travel time is to use a velocity probe (such as a Global Water FP111-S Flow Probe) to determine the rate of flow in the water body. In cases where a water velocity probe is used, the manufacturer's instructions will be followed.

9.6 SAMPLE TYPES

Grab Samples

Grab samples are appropriate for the characterization of surface waters at a particular time and place, to provide information about minimum and maximum concentrations, and to allow for the collection of variable sample volume.

Grab samples may be collected directly into the sample container, or a clean decontaminated intermediate container may be used if a wading sample is not possible or safe. If an intermediate container is used, when in the field, double rinse the sampling device (bucket, automatic sampler) with sample water prior to collecting the

[1] The District must use its best professional judgment to determine the upstream and downstream distances based on receiving water flow, accessibility to upstream/downstream waterbody banks, and size of visible sewage plume.

sample and be sure to discard rinse water downstream of where sample will be collected. If samples are collected in a bucket and distributed a consolidation collection container, swirl the contents of the bucket as it is being poured into the consolidation collection container to avoid settling of solids (and pour in back-and-forth pattern – *e.g.*, 1-2-3-3-2-1).

- Grab Sample: A grab sample is defined as an individual sample collected at a given time. Grab samples represent only the condition that exists at the time the sample is collected (US EPA 1977).

- Surface Grab Sample: A sample collected at the water surface (i.e., skimming) directly into the sample container or into an intermediate container such as a clean bucket. A single or discrete sample collected at a single location.

Field Blanks

Field Blanks are used to evaluate the potential for contamination of a sample by site contaminants from a source not associated with the sample collected (e.g., airborne dust, etc.). Sterile, deionized water is taken into the field in a sealed container. This is the stock water. The stock water is then poured into the sample container. The containers and sample submission forms are labeled as "Field Blank." The same template selected for the test samples should be used. Field blanks are subject to the same holding time limitations as samples. The appropriate FIELD QC box on the sample Chain of Custody form should be checked.

9.7 SAMPLE LABELING AND CHAIN OF CUSTODY PROCEDURES

At a minimum, the following grab samples will be collected, in duplicate:

- Field Blank: See Section 9.7 for discussion.
- Upstream: A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.
- Source: A point in the receiving water where sewage initially enters the receiving water.
- See Section 9.6 for information on determining velocity of the surface water in order to determine the Source sample location.
- "Downstream" of spill: A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water. This location will vary with the velocity of the surface water to be sampled (*see Section 9.6)*.

Sample labels shall be completed for each sample, using waterproof ink.

Photos or video of each sample location will be taken, properly labeled with date, time, and view direction and a map of the photo locations completed. Photos and videos shall include relevant landmarks to identify sampling locations and their surroundings.

Due to the evidentiary nature of samples collected during enforcement investigations, possession must be traceable from the time the samples are collected until they are analyzed. To maintain and document sample possession, a Surface Water Sample Chain of Custody Record (see Sewer Spill/Backup Response Workbook) must be completed. A sample is under custody if:

- It is in your possession, or
- It is in your view, after being in your possession, or
- It was in your possession and under your control to prevent tampering, or
- It is in a designated secure area.

As few people as possible should handle samples. The person taking the samples is personally responsible for the care and custody of the samples collected until they are transferred or dispatched properly.

Samples are accompanied by a chain of custody record. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents sample custody transfer from the sampler, often through another person, to the analyst at the laboratory. The samples are typically transferred to the sample-receiving custodian at the laboratory.

9.8 SPILL TECHNICAL REPORT: Spill Technical Report for Individual Category 1 Spill in which 50,000 Gallons or Greater Discharged into a Surface Water

For any spill in which 50,000 gallons or greater discharged into a surface water, **within 45 calendar days** of the spill end date, the Deputy General Manager shall submit a Spill Technical Report to the online CIWQS Sanitary Sewer System Database. The Spill Technical Report, at minimum, must include the following information:

1. Spill causes and circumstances, including at minimum:
    - Complete and detailed explanation of how and when the spill was discovered;
    - Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions;
    - Diagram showing the spill failure point, appearance point(s), the spill flow path, and ultimate destinations;
    - Detailed description of the methodology employed, and available data used to calculate the discharge volume and, if applicable, the recovered spill volume;
    - Detailed description of the spill cause(s);
    - Description of the pipe material, and estimated age of the pipe material, at the failure location;
    - Description of the impact of the spill;
    - Copy of original field crew records used to document the spill; and
    - Historical maintenance records for the failure location.
2. District's response to the spill:
    - Chronological narrative description of all actions taken by the District to terminate the spill;
    - Explanation of how the Sewer System Management Plan Spill Emergency Response Plan was implemented to respond to and mitigate the spill; and
    - Final corrective action(s) completed and a schedule for planned corrective actions, including:
        - Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable,
        - Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences, and

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

3. Water Quality Monitoring, including at minimum:
   - Description of all water quality sampling activities conducted;
   - List of pollutant and parameters monitored, sampled and analyzed; as required in Section 9.2.
   - Laboratory results, including laboratory reports;
   - Detailed location map illustrating all water quality sampling points; and
   - Other regulatory agencies receiving sample results (if applicable).
5. Evaluation of spill impact(s), including a description of short-term and long-term impact(s) to beneficial uses of the surface water.

10. NOTIFICATION, REPORTING, MONITORING AND RECORDKEEPING REQUIREMENTS

ref. ORDER WQ 2022-0103-DWQ Attachment E-1 and E-2

10.1 REPORTING REQUIREMENTS

All reporting required in this General Order must be submitted electronically to the online CIWQS Sanitary Sewer System Database (https://ciwqs.waterboards.ca.gov), unless specified otherwise in this General Order. Electronic reporting may solely be conducted by a Legally Responsible Official or Data Submitter(s) previously designated by the Legally Responsible Official, as required in section 5.8 (Designation of Data Submitters) of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

The District shall report any information that is protected by the Homeland Security Act, by email to SanitarySewer@waterboards.ca.gov, with a brief explanation of the protection provided by the Homeland Security Act for the subject report to be protected from unauthorized disclosure and/or public access, and for official Water Board regulatory purposes only.

Refer to APPENDIX A for detailed reporting requirements by spill category.

10.2 REGULATOR REQUIRED NOTIFICATIONS

10.2.1 Spill Category 1: Spills to Surface Waters

Spill Requirement	Due	Method
Notification	**Within two (2) hours** of the District's knowledge of a Category 1 spill of 1,000 gallons or greater, discharging or threatening to discharge to surface waters notify the California Office of Emergency Services and obtain a notification control number.	California Office of Emergency Services at: (800) 852-7550 (Section 1 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

Monitoring	• Conduct spill-specific monitoring; • Conduct water quality sampling of the receiving water within **18 hours** of initial knowledge of spill of 50,000 gallons or greater to surface waters.	(Section 2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Reporting	• Submit Draft Spill Report **within three (3) business days** of the District's knowledge of the spill; • Submit Certified Spill Report **within 15 calendar days** of the spill end date; • Submit Technical Report **within 45 calendar days** after the spill end date for a Category 1 spill in which **50,000 gallons or greater** discharged to surface waters; and • Submit Amended Spill Report **within 90 calendar days** after the spill end date.	(Section 3.1 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

10.2.2 Spill Category 2: Spills of 1,000 Gallons or Greater That Do Not Discharge to Surface Waters

Spill Requirements	Due	Method
Notification	**Within two (2) hours** of the District's knowledge of a Category 2 spill of 1,000 gallons or greater threatening to discharge to waters of the State: Notify California Office of Emergency Services and obtain a notification control number.	California Office of Emergency Services at: (800) 852-7550 (Section 1 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Reporting	• Submit Draft Spill Report **within three (3) business days** of the District's knowledge of the spill; • Submit Certified Spill Report **within 15 calendar days** of the spill end date; and • Submit Amended Spill Report **within 90 calendar days** after the spill end date.	(Section 3.2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

10.2.3 Spill Category 3: Spills of Equal or Greater than 50 Gallons and Less than 1,000 Gallons That Does Not Discharge to Surface Waters

Spill Requirements	Due	Method
Notification	Not Applicable	Not Applicable
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Reporting	• Submit monthly Certified Spill Report to the online CIWQS Sanitary Sewer System Database within **30 calendars days** after the end of the month in which the spills occur; and • Submit Amended Spill Reports **within 90 calendar days** after the Certified Spill Report due date.	(Section 3.3 and 3.5 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

10.2.4 Spill Category 4: Spills Less Than 50 Gallons That Do Not Discharge to Surface Waters

Spill Requirements	Due	Method
Notification	Not Applicable	Not Applicable
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Reporting	• If, during any calendar month, Category 4 spills occur, certify monthly, the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills into the online CIWQS Sanitary Sewer System Database, within 30 days after the end of the calendar month in which the spills occurred. • Upload and certify a report, in an acceptable digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur.	(Section 3.4, 3.6, 3.7 and 4.4 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

10.2.5 District Owned and/or Operated Lateral Spills That Do Not Discharge to Surface Waters

Spill Requirements	Due	Method
Notification	**Within two (2) hours** of the District's knowledge of a spill of 1,000 gallons or greater, from an District- owned and/or operated lateral, discharging or threatening to discharge to waters of the State: Notify California Office of Emergency Services and obtain a notification control number. Not applicable to a spill of less than 1,000 gallons.	California Office of Emergency Services at: (800) 852-7550 (Section 1 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))
Monitoring	Conduct visual monitoring.	(Section 2 of Attachment E1 of the State Water Board ORDER WQ 2022-0103-DWQ)
Reporting	• Upload and certify a report, in an acceptable digital format, of all lateral spills (that do not discharge to a surface water) to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur. • Report a lateral spill of any volume that discharges to a surface water as a Category 1 spill.	(Sections 3.6, 3.7 and 4.4 of Attachment E1 of the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR))

10.3 COMPLAINT RECORDS

The District maintains records of all complaints received whether or not they result in sanitary sewer overflows. These complaint records include, but are not limited to, records documenting how the District responded to notifications of spills. Each complaint record must, at a minimum, include the following information:

- Date, time, and method of notification,
- Date and time the complainant first noticed the spill, if available,
- Narrative description of the complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system, if available,
- Complainant's contact information, if available, and
- Final resolution of the complaint;

All complaint records will be maintained for a minimum of five years, whether or not they result in a spill, in the Service Call Report Binder. Spill files (field notes, spill/Backup Response Workbook) are kept in the Collection System Superintendent Office files.

11. POST-SPILL ASSESSMENTS OF SPILL RESPONSE ACTIVITIES

(ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR)*, Element 6, ATTACHMENT D, Page D-6)*

Every spill event is an opportunity to evaluate the District adherence to response and reporting procedures and effectiveness of the response. Each spill event is unique, with its own elements and challenges including volume, cause, location, terrain, climate, and other parameters.

As soon as possible after spill events all the participants, from the person who received the call to the last person to leave the site, will meet to review the procedures used and to discuss what worked and where improvements could be made in responding to and mitigating future spill events. The results of the debriefing will be documented and tracked to ensure the action items are completed as scheduled.

11.1 FAILURE ANALYSIS INVESTIGATION

The objective of the failure analysis investigation is to determine the "root cause" of the spill and to identify corrective action(s) needed that will reduce or eliminate future potential for the spill to recur or for other spills to occur.

The investigation will include reviewing all relevant data to determine appropriate corrective action(s) for the line segment. The investigation may include:

- Reviewing and completing the Sanitary Sewer Spill Report and any other documents related to the incident
- Reviewing the incident timeline and other documentation regarding the incident
- Reviewing communications with the reporting party and witness
- Reviewing volume estimate, volume recovered estimate, volume estimation assumptions and associated drawings
- Reviewing available photographs
- Interviewing staff that responded to the spill
- Reviewing past maintenance records
- Reviewing past CCTV records,
- Conducting a CCTV inspection to determine the condition of all line segments immediately following the spill and reviewing the video and logs,
- Reviewing any Fats, Oils, Roots and Grease (FROG) related information or results
- Post spill debrief records
- Interviews with the public at the spill location

The product of the failure analysis investigation will be the determination of the root cause and the identification and scheduling of the corrective actions. The Collection System Failure Analysis Form (in Sanitary Sewer Spill/Backup Response Workbook) will be used to document the investigation.

12. SPILL RESPONSE TRAINING

(ref. State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR)*, Element 6, Attachment D 4.3 page D-5 and Element 6 page D-6*

This section provides information on the training that is required to support this Spill Emergency Response Plan.

12.1 INITIAL AND ANNUAL REFRESHER TRAINING

All District personnel who may have a role in responding to, reporting, and/or mitigating a sewer system spill will receive training on the contents of this SERP. All new employees will receive training before they are placed in a position where they may have to respond. Current employees will receive annual refresher training on this SERP and the procedures to be followed. The District will document all training.

Affected employees will receive annual training on the following topics by knowledgeable trainers:

- The requirements of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), Element 6
- The District's Spill Emergency Response Plan procedures and practice drills
- Containment and cleanup methods
- Researching and documenting Sanitary Sewer Spill Start Times
- Skilled estimation of spill volume for field operators
- Electronic CIWQS reporting procedures for staff submitting data
- State Water Resources Control Board Employee Knowledge Expectations

Through SWRCB Employee Knowledge Expectations training, the employee will be able to answer the following:

1. Please briefly describe your name and job title.

2. Please describe for us approximately when you started in this field and how long you have worked for your agency.

3. Please expand on your current position duties and role in responding in the field to any spill complaints.

4. Please describe your SOPs used to respond/mitigate spills when they occur.

5. Describe any training your agency provides or sends you to for conducting spill volume estimates.

6. We are interested in learning more about how your historical spill response activities have worked in the field. We understand from discussions with management earlier that you use the SERP from the SSMP. Please elaborate on how you implement and utilize the procedures in the plan.

7. Historically, before any recent changes, can you please walk us through how you would typically receive and respond to any spill complaints in the field?

8. Can you tell us who is responsible for estimating spill volumes discharged? If it is you, please describe how you go about estimating the spill volume that you record on the work order/service request forms?

9. What other information do you collect or record other than what is written on the work order form?

10. Describe if and when you ever talk with people that call in spills (either onsite or via telephone) to further check out when the spill might have occurred based on what they or others know? If you do this, can you tell us where this information is recorded?

11. We understand you may be instructed to take pictures of some sewer spills/backups into structures. Other than these spills, when else would you typically take any pictures of a spill?

12. Please walk us through anything else you'd like to add to help us better understand how your field crews respond and mitigate spill complaints.

12.2 SPILL RESPONSE DRILLS

Periodic training drills or field exercises will be held to ensure that employees are up to date on these procedures, equipment is in working order, and the required materials are readily available. The training drills will cover scenarios typically observed during sewer related emergencies (e.g. mainline blockage, mainline failure, and lateral blockage). The results and the observations during the drills will be recorded and action items will be tracked to ensure completion.

12.3 SPILL TRAINING RECORD KEEPING

Records will be kept of all training that is provided in support of this SERP for 5 years. The records for all scheduled training courses and for each overflow emergency response training event will include date, time, place, content, name of trainer(s), names and titles of attendees, brief narrative description of the training, including training method(s) and training materials and/or equipment used.

12.4 CONTRACTORS WORKING ON DISTRICT SEWER FACILITIES

All contractors working on District sewer facilities will be required to follow the spill response instructions on the Sanitary Sewer Spill Response Instructions for Contractors (Appendix D). Appendix will change if any of the template appendices are removed] Additional training may be required depending on the nature of the work on any or all of the following:

- The requirements of State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR), Element 6
- Communication procedures to District in the event a spill is caused or witnessed
- The District's Spill Emergency Response Plan procedures and practice drills
- Skilled estimation of spill volume for field operators
- Electronic CIWQS reporting procedures for staff submitting data

13. SEWER BACKUP INTO/ONTO PRIVATE PROPERTY CLAIMS HANDLING POLICY

It is the policy of the District that a claims form shall be offered to anyone wishing to file a claim. The following procedures will be observed for all sewer overflows/backups into/onto private property:

- District staff will offer a District claim form irrespective of fault whenever it is possible that the sanitary sewer backup may have resulted from an apparent blockage in the District-owned sewer lines or whenever a District customer requests a claim form. The claim may later be rejected if subsequent investigations into the cause of the loss indicate the District was not at fault.

- It is the responsibility of the Collections Crew to gather information regarding the incident and notify the General Manager-Chief Engineer or their designee.

- It is the responsibility of the General Manager-Chief Engineer or their designee to review all claims and to oversee the adjustment and administration of the claim to closure.

14. AUTHORITY

This SERP is written in accordance with the State Water Board Order No. WQ 2022-0103-DWQ (SSSWDR).

15. APPENDICES

A. Reporting Requirements by Spill Category
B. Service Call Form
C. Door Hanger
D. Sanitary Sewer Spill Response Instructions for Contractors
E. Sanitary Sewer Spill/Backup Response Workbook

APPENDIX A:

Reporting Requirements by Spill Category

REPORTING REQUIREMENTS FOR INDIVIDUAL CATEGORY 1 SPILL REPORTING

Draft Spill Report

Within three (3) business days of the District's knowledge of a Category 1 spill, the District shall submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database.

The Draft Spill Report must, at minimum, include the following items:

1. Contact information: Name and telephone number of District contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the District was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Date and time the District notified the California Office of Emergency Services, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated; If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
8. Estimated total spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
    a. Description of the drainage conveyance system transporting the spill;
    b. Photographs of the drainage conveyance system entry location(s);
    c. Estimated spill volume fully recovered from the drainage conveyance system;
    d. Estimated spill volume remaining within the drainage conveyance system;
    e. Description and photographs of all discharge point(s) into the surface water;
    f. Estimated spill volume that discharged to surface waters; and
    g. Estimated total spill volume recovered.

Certified Spill Report

Within 15 calendar days of the spill end date, the District shall submit a Certified Spill Report for Category 1 spills, to the online CIWQS Sanitary Sewer System Database.

Upon completion of the Certified Spill Report, the online CIWQS Sanitary Sewer System Database will issue a final spill event identification number.

(Category 1 continued)

The Certified Spill Report must, at minimum, include the following mandatory information in addition to all information in the Draft Spill Report:

1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;
2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
    a. The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
    b. The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;
4. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
5. System failure location (for example, main, lateral, pump station, etc.);
6. Description of the pipe material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion;
14. Name and type of receiving water body(s);
15. Description of the water body(s), including but not limited to:
    a. Observed impacts on aquatic life,
    b. Public closure, restricted public access, temporary restricted use, and/or posted health warnings due to spill,
    c. Responsible entity for closing/restricting use of water body, and
    d. Number of days closed/restricted as a result of the spill.
16. Whether or not the spill was located within 1,000 feet of a municipal surface water intake; and
17. If water quality samples were collected, identify sample locations and the parameters the water quality samples were analyzed for. If no samples were taken, Not Applicable shall be selected.

(Category 1 continued)

Amended Certified Spill Reports

The District shall update or add additional information to a Certified Spill Report within **90 calendar days** of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The District shall certify the amended report.

After **90 calendar days**, the District shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

REPORTING REQUIREMENTS FOR INDIVIDUAL CATEGORY 2 SPILL REPORTING

Draft Spill Report

Within three (3) business days of the District's knowledge of a Category 2 spill, the District shall submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database.

The Draft Spill Report must, at minimum, include the following items:

1. Contact information: Name and telephone number of District contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the District was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Date and time the District notified the California Office of Emergency Services, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated; If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
8. Estimated total spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
    - Description of the drainage conveyance system transporting the spill;
    - Photographs of the drainage conveyance system entry location(s);
    - Estimated spill volume fully recovered from the drainage conveyance system;
    - Estimated spill volume remaining within the drainage conveyance system;
11. Estimated spill volume discharged to a groundwater infiltration basin or facility, if applicable; and
12. Estimated total spill volume recovered.

Certified Spill Report

Within 15 calendar days of the spill end date, the District shall submit a Certified Spill Report for the Category 2 spill, to the online CIWQS Sanitary Sewer System Database (https://ciwqs.waterboards.ca.gov). Upon completion of the Certified Spill Report, the online CIWQS Sanitary Sewer System Database will issue a final spill event identification number.

The Certified Spill Report must, at minimum, include the following mandatory information in addition to all information in the Draft Spill Report:

1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;

(Category 2 continued)

2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
    - The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
    - The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;
4. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
5. System failure location (for example, main, pump station, etc.);
6. Description of the pipe/infrastructure material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion; and
14. Whether or not the spill was located within 1,000 feet of a municipal surface water intake.

Amended Certified Spill Reports

The District shall update or add additional information to a Certified Spill Report within **90 calendar days** of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The District shall certify the amended report.

After **90 calendar days**, the District shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

REPORTING REQUIREMENTS FOR INDIVIDUAL CATEGORY 3 SPILL REPORTING

Monthly Certified Spill Reporting

The District shall report and certify all Category 3 spills to the online CIWQS Sanitary Sewer System Database within 30 calendar days after the end of the month in which the spills occurred. (For example, all Category 3 spills occurring in the month of February shall be reported and certified by March 30th). After the Legally Responsible Official certifies the spills, the online CIWQS Sanitary Sewer System Database will issue a spill event identification number for each spill.

The monthly reporting of all Category 3 spills must include the following items for each spill:

1. Contact information: Name and telephone number of District contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the District was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Description, photographs, and GPS coordinates where the spill originated. If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the spill appearance point explanation field;
7. Estimated total spill volume exiting the system;
8. Description and photographs of the extent of the spill and spill boundaries;
9. Did the spill reach a drainage conveyance system? If Yes:
    a. Description of the drainage conveyance system transporting the spill;
    b. Photographs of the drainage conveyance system entry locations(s);
    c. Estimated spill volume fully recovered from the drainage conveyance system; and
    d. Estimated spill volume discharged to a groundwater infiltration basin or facility, if applicable.
10. Estimated total spill volume recovered;
11. Description of the spill event destination(s), including GPS coordinates, if available, that represent the full spread and reaches of the spill;
12. Spill end date and time;
13. Description of how the spill volume estimations were calculated, including, at minimum:
    a. The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
    b. The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time;
14. Spill cause(s) (for example, root intrusion, grease deposition, etc.);

(Category 3 Continued)

15. System failure location (for example, main, pump station, etc.);
16. Description of the pipe/infrastructure material, and estimated age of the pipe/infrastructure material, at the failure location;
17. Description of the impact of the spill;
18. Whether or not the spill was associated with a storm event;
19. Description of spill response activities including description of immediate spill containment and cleanup efforts;
20. Description of spill corrective actions, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of the major milestones for those steps; including, at minimum:
    a. Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable, and
    b. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill event location, including:
        - Adjusted schedule/method of preventive maintenance,
        - Planned rehabilitation or replacement of sanitary sewer asset,
        - Inspected, repaired asset(s), or replaced defective asset(s),
        - Capital improvements,
        - Documentation verifying immediately implemented system modifications and operating/maintenance modifications,
        - Description of spill response activities,
        - Spill response completion date, and
        - Ongoing investigation efforts, and expected completion date of investigation to determine the full cause of spill;
21. Detailed narrative of investigation and investigation findings of cause of spill.

Amended Certified Spill Reports

Within 90 calendar days of the certified Spill Report due date, the District may update or add additional information to a certified Spill Report by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The District shall certify the amended report.

After 90 calendar days, the Legally Responsible Official shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a certified Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the 90-day timeframe for amending the certified Spill Report, as provided above.

REPORTING REQUIREMENTS FOR INDIVIDUAL CATEGORY 4 SPILL REPORTING

Monthly Certified Spill Reporting

The District shall report and certify the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, within 30 calendar days after the end of the month in which the spills occurred.

Annual Certified Spill Reporting of Category 4 and/or Lateral Spills

For all Category 4 spills and spills from its owned and/or operated laterals that are caused by a failure or blockage in the lateral and that do not discharge to a surface water, the District shall:

- Maintain records per section 4.4. of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order. The District shall provide records upon request by State Water Board or Regional Water Board staff.

- Annually upload and certify a report, in an appropriate digital format, of all recordkeeping of spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occurred.

A spill from an District-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the District shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

Monthly Certification of "No-Spills" Or "Category 4 Spills" and/or "Non-Category 1 Lateral Spills"

If either (1) no spills occur during a calendar month or (2) only Category 4, and/or District-owned and/or operated lateral spills (that do not discharge to a surface water) occur during a calendar month, the District shall certify, within 30 calendar days after the end of each calendar month, either a "No-Spill" certification statement, or a "Category 4 Spills" and/or "Non-Category 1 Lateral Spills" certification statement, in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 and/or Non-Category 1 Lateral Spills that will be reported annually (per section 3.6 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order) for the designated month.

If a spill starts in one calendar month and ends in a subsequent calendar month, and the District has no further spills of any category, in the subsequent calendar month, the District shall certify "no-spills" for the subsequent calendar month.

If the District has no spills from its systems during a calendar month, but the District voluntarily reported a spill from a private lateral or a private system, the District shall certify "no-spills" for that calendar month.

If the Districts has spills from its owned and/or operated laterals during a calendar month, the District shall not certify "no spills" for that calendar month.

APPENDIX B:

Service Call Form

Novato Sanitary District Sewer Service Call Form **Date:** _____

A. Initial Notification: **Received by:** _____ **Referred to:** _____
Referred via: phone/fax/email (circle one)

B. Caller Information:

Name: _____ Phone: _____ Time: _____ (AM/PM)

Address: _____ Call Type: ☐ Emergency ☐ Complaint ☐ Other

Cross Street: _____ Structure Up: _____ Structure Down: _____

Caller Info: _____

C. Details of Initial Response:

Arrival Time: _____(AM/PM) Departure time: _____(AM/PM) Weather Conditions: _____

Personnel (XX/XX) _____ Pay Code (circle one): Regular Time & ½ Comp

Personnel (XX/XX) _____ Pay Code (circle one): Regular Time & ½ Comp

D. Problem Information:

Problem type(s): (circle all that apply) Pump Station Alarm Collection System Stoppage Overflow Odor

Other _____

Problem In: (circle one) Mainline Private Lateral* Manhole Dry Well Wet Well Force Main Water Main
*if private lateral problem only, go to Part E.
If no overflow, go to Part E-1

Other _____

Problem Causes: (circle all that apply) Debris Roots Grease Pipe Failure Surcharge Storm Drain MH Cover Unknown

Activity: (circle all that apply) Rodding Hydroflush HandRod None Other_____

Photo's Taken: Yes (please attach) No

Comments: _____

_____

_____

_____

_____

_____

E. Overflow – Initial Assessment:

Overflow Type: (circle one) Capacity Stoppage

Overflow Location: (circle one) Pump Station Manhole Rodhole Lateral Cleanout

E-1. Notified Customer who is the ☐ Owner ☐ Tenant ☐ In Person ☐ By Phone ☐ Left door tag

Note: _____

Novato Sanitary District Sewer Service Call Form **Date:** _____

F. Immediate Reporting – Check Agencies Notified by Incident Commander

☐ Novato Police Emergency: 897-1122 Business: 897-4361		☐ CalOES: **800-852-7550** OES Control#: Operator Name: Time:	☐ Fish and Game Dispatch **916-358-1300**
☐ NMWD Business: 897-4133			
☐ Marin County PW: **499-6528**	☐ City of Novato, Public Works **899-8246**		☐ Marin County Dept of Health County Comm Cntr Dispatch 4**99-7235**

G. Overflow Information (Initial Estimates):

Amount, GPM	Total Time of Spill	Total Gallons	Gallons to Open Ground	Gallons to Street	Gallons to Storm Drain

Storm Drain Discharges to: Creek / River / Pond / Lagoon / Open Ground / NA		**Name:**	
Time spill was stopped:	**Total time of cleanup, min**	**Retrieved from Storm drain, total gal:**	**Retrieved from Water Body (if applicable), total gal:**

GSP Coordinates: _____

H. District Crew/Equipment Details

Crew names	Hours	Reg/Time & ½	Comp Time	Equipment	Hours

I. Additional Information/Comments: _____

J. Follow-up Regulatory Reporting: Completed by: _____

K. Service Call Form Closeout: Completed by: _____

Approved by: _____

K. Corrective Actions: To be filled out by Collections crew, Leadworker, or Collections System Supervisor ony!

☐ Clean affected mains ☐ Upgrade cleaning frequency ☐ TV main

☐ Other (describe):

NOTE: This report must be approved by a District supervisor within 24 hours of the spill.

APPENDIX C:

Door Hanger

NOVATO SANITARY

COURTESY NOTICE

NOVATO SANITARY DISTRICT

Areas of Responsibility

□

□

□

□

□

_____

_____

_____

_____

ruary 28, 1994 state: Side sewer shall mean the sewer line beginning at a point two (2) feet outside the foundation wall of any building and terminating at the main sewer and includes the building sewer and lateral sewer together.

APPENDIX D:

Sanitary Sewer Spill Response Instructions for Contractors

Sanitary Sewer Spill Response Instructions for Contractors

For contractors working on the sanitary sewer system the District expects them to have, at all worksites, spill response materials necessary to block drainage conveyance system entry points near the work area and surface waters.

Additionally, contractor must be trained on spill response materials and equipment.

The following procedures are to be followed in the event that a contractor/plumber causes or witnesses a sanitary sewer spill. If the contractor/plumber causes or witnesses a spill they should:

1. Immediately notify the District at (415) 892-1694 and provide the following information if available:
   - Date, time contractor first noticed the spill
   - Description of the contractor's observation, including any information regarding whether the spill has reached surface waters or a drainage conveyance system
   - Contractor's contact information

2. Protect storm drains.

3. Protect the public.

4. Direct ALL media and public relations requests to the General Manager-Chief Engineer at (415) 892-1694.

APPENDIX E:

Sanitary Sewer Overflow/Backup Response Workbook

Novato Sanitary District

Sewer Spill Emergency Response Plan

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INSERT TAB:
Tab A: Start Here

Sanitary Sewer Spill/Backup Response Workbook

See the following page for contact information as needed.

☐ Make immediate notifications:

- If this spill is discharging or threatening to discharge greater than or equal to 1,000 gallons to waters of the State, immediately contact CalOES at (800) 852-7550 within 2 hours and obtain a control number. Record this number on the following pages: A-4, B-2, and D-1 Page 1.
- If there is a backup into a residence/business that may be due to a problem in the District's sewer, notify the Collection System Superintendent at (415) 892-1694 Ext. 124 or the Field Services Manager or Deputy General Manager at (415) 892-1694 Ext. 111.
- For media inquiries/requests contact the General Manager-Chief Engineer at (415) 892-1694.

☐ Refer to the Regulatory Reporting Guide in this Workbook for additional reporting requirements.

COLLECTIONS CREW:	CHAIN OF CUSTODY
☐ Refer to the Spill Event Checklist (A-4), follow the instructions on the Spill/Backup Response Flowchart (C-1), and complete forms in this Workbook as indicated. ☐ Complete the chain of custody record (to the right) and deliver this workbook to the Collections System Superintendent.	Print Name: Initial: Date:

COLLECTIONS SYSTEM SUPERINTENDENT:	CHAIN OF CUSTODY
☐ Review the Spill Event Checklist (A-4) and the forms in this Workbook. Contact the Collections Crew for additional information if necessary. ☐ Confirm that all required regulatory notifications have been made (B-1). ☐ If this was a Sewer Backup, follow instructions on the Backup Forms Checklist (F-1). ☐ Complete the Post Spill Assessment (G-1) and Collection System Failure Analysis Form (G-2). ☐ Complete the Chain of Custody record (right) and forward Workbook to Data Submitter	Print Name: Initial: Date:

DATA SUBMITTER:	CHAIN OF CUSTODY
☐ Refer to Spill Event Checklist (A-4) Data Submitter Responsibilities ☐ Complete the chain of custody record (to the right) and deliver this workbook to a Legally Responsible Official (see A-2 for LROs).	Print Name: Initial: Date:

LEGALLY RESPONSIBLE OFFICIAL:	CHAIN OF CUSTODY
☐ Refer to Spill Event Checklist (A-4) Data Submitter Responsibilities	Print Name: Initial:

☐ Complete the chain of custody record (to the right) and file this Workbook with the spill file.	Date:

Contact Information A-2

Contact	Description	Telephone/Email/Address
CAL/OES	California Office of Emergency Services	(800) 852-7550
Carl Warren & Co. c/o Alan Dialon	Assistance with sewer backup customers	2300 Clayton Road, Concord, CA 94520 Telephone: (855) 763-5898 Email: csrmaclaims@carlwarren.com
Collections System Superintendent	CalOES 2-hour notification and other regulatory notifications Outside Assistance / Mutual Aid	(415) 892-1694 Ext. 124
General Manager-Chief Engineer	Media inquiries/requests	(415) 892-1694
Marin County Environmental Health Services	○ Notifications ○ Sign placement guidance	(415) 473-2335
Novato Sanitary District Laboratory or contracted laboratory	Water quality sample analysis	500 Davidson Street Novato, CA 94945
Restoration/Remediation	Cleaning services	Pure Davis Restoration (707) 782-1999 Restoration Management (800) 400-5058 PuroClean (707) 538-1772
San Francisco Regional Water Quality Control Board		(510) 622-2300
State Water Resources Control Board	Walter Mobley	(916) 323-0878 Walter.Mobley@waterboards.ca.gov

Authorized Personnel:

The following are authorized to perform regulatory reporting of spills:

Job Title	Telephone	Check if LRO
Collections System Superintendent	(415) 892-1694 Ext. 124	✓
Deputy General Manager	(415) 892-1694 Ext. 111	✓
General Manager-Chief Engineer	(415) 892-1694 Ext. 106	✓

Collections System Leadworker	(415) 892-1694 Ext. 126	

The District's Legally Responsible Official (LRO) are authorized to electronically sign and certify spill reports in CIWQS.

NOTE: All references to "SSWDR" refer to State Water Board Order No. WQ 2022-0103-DWQ.

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

- **Category 1 Spill:**
  A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under SSWDR that results in a discharge to:

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

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

  A spill from an District-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the District shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of SSWDR.

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

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

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

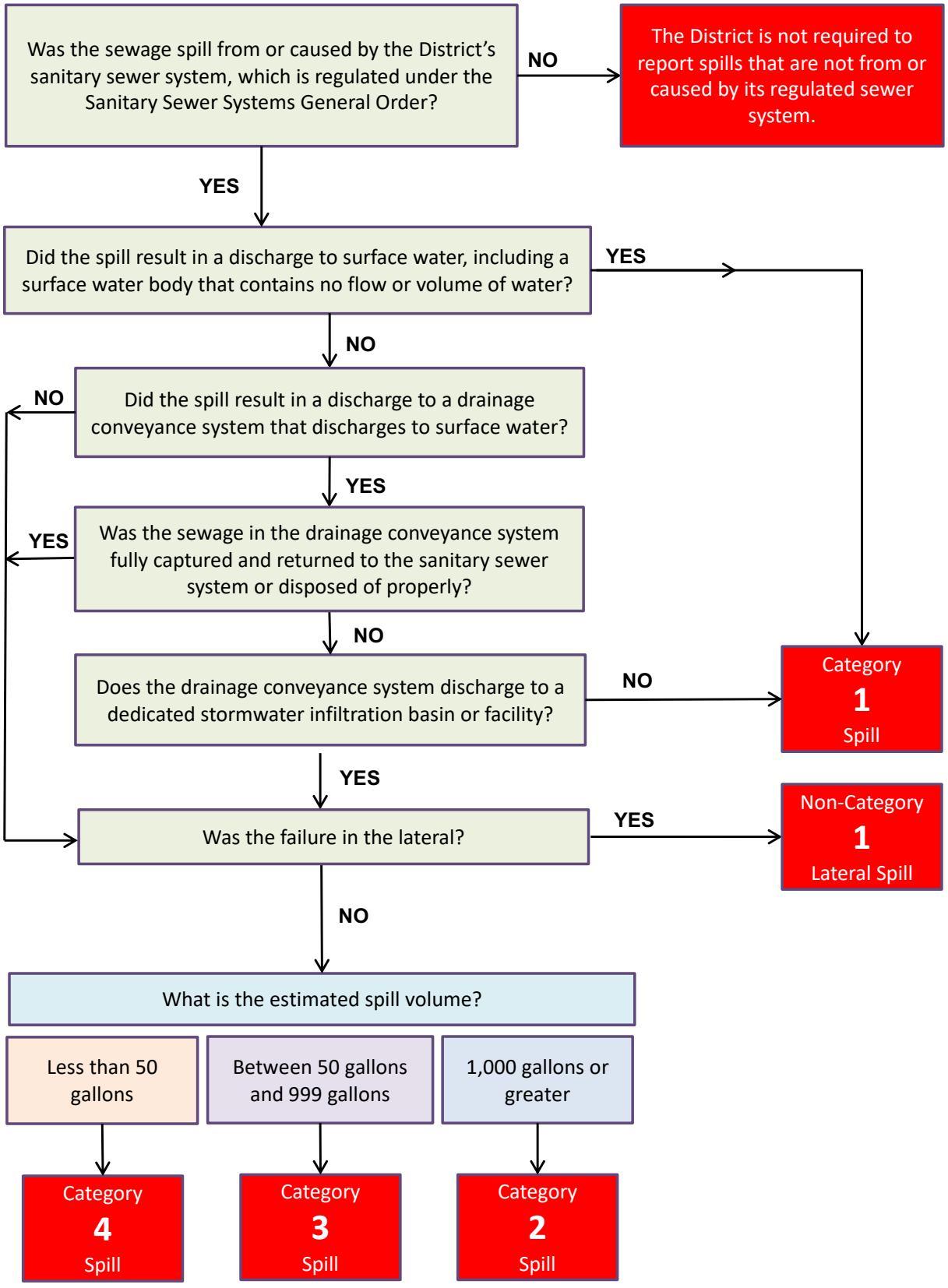
- **Non-Category 1 Enrollee Owned/Operated Lateral Spills**
  A spill of any volume from an Enrollee's owned and/or operated lateral that is caused by a failure or blockage in the lateral and that do not discharge to a surface water.

- **Private Spills**
  A spill from a private sewer lateral or private sanitary sewer system that is not owned/operated by the Enrollee.

WATERS OF THE STATE: Waters of the State are surface waters or groundwater within boundaries of the state as defined in Water Code section 13050(e), in which the State and Regional Water Boards have authority to protect beneficial uses. Waters of the State include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes

and pools, wetlands, sloughs, and estuaries, regardless of flow or whether water exists during dry conditions. Waters of the State include waters of the United States.

INSTRUCTIONS: Answer each question in order and stop at the red box once you have determined the category.



Spill Event Checklist A-4

Date of Spill: _____ Spill Location/Name: _____
CIWQS Event ID #: _____ Category? ☐ 1 ☐ 2 ☐3 ☐4 ☐Non-Cat 1 Lat OES#: _____
Property Damage? ☐ Yes ☐ No Service Request #: _____

COLLECTIONS CREW RESPONSIBILITIES

- ☐ Effort made to contain and return a portion/all to the sanitary sewer
- ☐ Pictures/video taken of spill
- ☐ Pictures taken of affected/unaffected area
- ☐ If property damage, start that process
- ☐ Pictures taken of containment efforts
- ☐ If spill is Cat 1 > 1000 gallons or Cat 2 > 1000 gal threatening to discharge to waters of the State: OES Control #_____
- ☐ Were surface waters impacted?
- ☐ Impacted waters identified?
- ☐ Assess and document spill location and spread including photos
- ☐ Spill Report Form Complete (includes fields for all required fields in CIWQS, and a sketch of spill)
- ☐ Volume Estimation Worksheet(s) done
- ☐ Start Time Determination Form done
- ☐ Follow Water Quality Monitoring and Sampling procedures

COLLECTIONS SYSTEM SUPERINTENDENT RESPONSIBILITIES

- ☐ Map of where samples were taken, if applicable
- ☐ For Cat 1 Spills 50,000 gallons or larger, obtain sampling results
- ☐ Ensure Technical Report is written
- ☐ Initial review of forms is complete (ensure consistency of dates, times, volumes, and other data)
- ☐ Review of photos and videos (label/date)
- ☐ Start folder for all documentation for this spill event. Put everything in it (Spill Report, Field Reports, Worksheets/Forms, follow-up work orders, notes, photos, drawings, CIWQS print outs, emails, etc.)
- ☐ Conduct Post Spill Assessment & complete form (G-1)
- ☐ Failure Analysis
  - TV to determine cause
  - Review Asset History
- ☐ Determine next steps to prevent recurrence
- ☐ Document findings and next steps on Spill Report

DATA SUBMITTER RESPONSIBILITIES

- ☐ Submit Draft in CIWQS w/in 3 business days (for Categories 1 and 2 only)
- ☐ Print CIWQS Draft hard copy and email
- ☐ Review CIWQS, spill Report, Worksheets, CMMS, and any other documentation to ensure data is consistent (e.g. dates, times, volumes, cause, follow-up action, etc.
- ☐ Attach photos, forms etc. to CIWQS
- ☐ Attach Technical Report to CIWQS, if applicable
- ☐ Submit Ready to Certify in CIWQS (with sufficient time for LRO review)
- ☐ Print CIWQS Ready to Certify and email
- ☐ Hand Workbook to LRO and complete Chain of Custody form

LRO RESPONSIBILITIES

- ☐ LRO review Workbook and CIWQS verify accurate and consistent data
- ☐ Certify in CIWQS (within 15 calendar days for Categories 1 & 2, 30 days after the month for Category 3 & 4)
- ☐ Print Certified CIWQS and email
- ☐ Move completed Workbook and spill folder to spill files
- ☐ If any changes are made to SSMP
  - Update SSMP and link on CIWQS to SSMP
  - Add change to SSMP Change Log
  - Consider need to re-certify SSMP

- [ ] Any changes? Change in CIWQS and hard copies and explain changes, print our current version

INSERT TAB:
Tab B: Regulatory Reporting

Regulatory Reporting Guide

The District's Legally Responsible Officials (LROs) are authorized to electronically sign and certify spill reports in CIWQS. See contact information for LROs on page A-2.

Deadline	Category 1 Spill*	Category 2 Spill	Category 3 Spill	Category 4 Spill/Non-Category 1 Lat Spill++
2 hours after awareness of spill	Within two (2) hours of the District's knowledge of a Category 1 spill of 1,000 gallons or greater, discharging or threatening to discharge to Waters of the State, notify CalOES and obtain a notification control number.	Within two (2) hours of the District's knowledge of a Category 2 spill of 1,000 gallons or greater threatening to discharge to Waters of the State, notify CalOES and obtain a notification control number.	-	-
As soon as possible	Notify Marin County Environmental Health Services			
4 hours of awareness of spill	If this incident includes a sewer backup into a home or business, contact Carl Warren and Co			
Within 18 hours of awareness of spill	Conduct water quality sampling of the receiving water within 18 hours of initial knowledge of spill of 50,000 gallons or greater to surface waters.	-	-	-
3 Business Days after awareness of spill	Submit Draft Spill Report in the CIWQS database.	Submit Draft Spill Report in the CIWQS database.	-	-
15 Days after the spill end date	Submit Certified Spill Report within 15 calendar days of the spill end date. (Submit Amended Spill Report, as needed, within 90 calendar days after the spill end date.)	Submit Certified Spill Report within 15 calendar days of the spill end date. (Submit Amended Spill Report, as needed, within 90 calendar days after the spill end date.)	-	-
Within **30 calendars days** after the end of the calendar month in which the spill occurs	-	-	Submit monthly Certified Spill Report to the online CIWQS Sanitary Sewer System Database (Submit Amended Spill Report, as needed, within 90 calendar days after the Certified Spill Report due date.)	Certify monthly, the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills and/or check the box if you had any Non Category 1 Lateral spills into the online CIWQS Sanitary Sewer System Database.
45 days after spill end date	Submit Technical Report within 45 calendar days after the spill end date for a Category 1 spill in which 50,000 gallons or greater discharged to surface waters; and	-	-	-
By February 1st after the end of the calendar year in which the spills occur.	-	See ++ note below.	-	Upload and certify a report, in an acceptable digital format, of all Category 4 spills and Non Category 1 Lateral spills to the online CIWQS Sanitary Sewer System Database.

* A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill.

++ See following page for notes.

++ Agency owned lateral spills (Non Category 1) details to be reported by Feb 1 of the following year.

- **Monthly Spill Reporting of "No Spills" or "Category 4 Spills" and/or "Non-Category 1 Lateral Spills":** If either (1) no spills occur during a calendar month or (2) only Category 4, and/or Enrollee-owned and/or operated lateral spills (that do not discharge to a surface water) occur during a calendar month, the Enrollee shall certify, within 30 calendar days after the end of each calendar month, either a "No-Spill" certification statement, or a "Category 4 Spills" and/or "Non-Category 1 Lateral Spills" certification statement, in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 and/or Non-Category 1 Lateral Spills that will be reported annually for the designated month.

    - If a spill starts in one calendar month and ends in a subsequent calendar month, and the Enrollee has no further spills of any category, in the subsequent calendar month, the Enrollee shall certify "no-spills" for the subsequent calendar month. If the Enrollee has no spills from its systems during a calendar month, but the Enrollee voluntarily reported a spill from a private lateral or a private system, the Enrollee shall certify "no-spills" for that calendar month. <u>If the Enrollees has spills from its owned and/or operated laterals during a calendar month, the Enrollee shall not certify "no spills" for that calendar month.</u>

- **Annual Certified Spill Reporting of Category 4 and/or Lateral Spills:** For all Category 4 spills and spills from its owned and/or operated laterals that are caused by a failure or blockage in the lateral and that do not discharge to a surface water, the Enrollee shall annually upload and certify a report, in an appropriate digital format, of all recordkeeping of spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occurred.

- **Report as Spills Occur**: There is now an option to certify the Spill Reports for Category 4 and/or Non-Category 1 Lateral Spills as they occur, and not on an annual basis. Choosing this option still requires an agency to perform the monthly spill reporting described in the first bullet above.

Regulatory Reporting/Notifications Log

Agency/Firm Contacted	Individual Spoken to:	Date	Time	Notes
CalOES (see section B3)				Control Number:

CAL-OES NOTIFICATION	
Per Water Code section 13271, for a spill that discharges in or on any waters of the State, or discharges or is deposited where it is, or probably will be, discharged in or on any waters of the State, the Enrollee shall notify the California Office of Emergency Services and obtain a California Office of Emergency Services Control Number as soon as possible but no later than two (2) hours after: • The Enrollee has knowledge of the spill; and • Notification can be provided without substantially impeding cleanup or other emergency measures. The notification requirements in this section apply to individual spills of 1,000 gallons or greater, from an Enrollee-owned and/or operated laterals, to a water of the State.	
Name of Agency Responsible for Spill:	
Name of Person Notifying Cal-OES:	Phone:
Cal-OES Notification Date and Time: ☐ AM ☐ PM	
When was the Agency Notified of the Spill Date and Time: ☐ AM ☐ PM	
Estimated Spill Volume (gals):	Estimated Spill Rate (GPM):
Estimated Volume Contained (gals):	Estimated Spill Rate Directly or Indirectly to Waters of the State (GPM):
Name of Water Body Receiving or Potentially Receiving Discharge:	
Description of Water Body Impact and/or Potential Impact to Beneficial Uses:	
Spill Incident Description:	
Spill Location (address, city, cross street or landmark):	
Contact Person on Scene:	Phone:
Spill Cause or Suspected Cause: ☐ UNKNOWN	
Name of Cal-OES Representative:	Control Number:

Notification of Spill Report Updates After Initial Notification	
Updated Date:	Updated By:
Discharge Volume: ☐ Increase ☐ Decrease	Volume Discharged to Surface Waters: ☐ Increase ☐ Decrease
Additional Impacts to Surface Waters and Beneficial Uses:	

INSERT TAB:
Tab C: Flowchart

Spill/Backup Response Flowchart

START HERE

Does the spill/backup appear to be due to a problem in the **District-owned/maintained** sewer line?

NO

This is a Private Spill

1. Photograph the extent of the discharge and the discharge boundaries if possible.
2. Notify the property owner that the blockage is in their lateral and that the District does not have legal authority to maintain or perform work on privately-owned laterals.
3. Give customer the "Your Responsibilities as a Private Property Owner" pages from this Workbook (F-6).
4. Recommend to customer they hire a contractor to clear their line.
5. If customer is not home:
   - Complete Door Hanger and leave on customer's door.
   - Leave a message on the customer's voicemail.
6. If the property owner is unable or unwilling to address the cause of the Spill, immediately contact your supervisor and discuss whether Code Enforcement, the County Department of Environmental Health or Regional Water Quality Control Board should be notified.
7. If you are directed to to break the stoppage and clean up the private spill. Be sure to document District staff time and equipment used for potential billing purposes and take pictures.

1. **Document the service call according to District procedures.**
2. **STOP. Do not continue to PAGE 2**

YES

1. Document arrival time.
2. Consider the need to call out additional staff, contractor or mutual aid assistance.
3. If it is possible that this is a Category 1 spill greater than or equal to 1,000 gallons or a Category 2 spill that is threatening to discharge to waters of the State, immediately make the 2-hour notification to Cal-OES and obtain a control number. Record this number on the following pages: A-4, B-2, and D-1 Page 1.

1. Record manhole number or cleanout location of the spill appearance point closest to the failure point, and describe each additional appearance point on the Spill Report (D-1).
2. Take photographs of all spill appearance points, the extent of the spill, and spill boundaries.

Go to PAGE 2

Spill/Backup Response Flowchart

Continue from PAGE 1

BEGIN DIVERSION AND CONTAINMENT, AS NECESSARY

1. DIVERT AWAY FROM SENSITIVE AREAS:

a. Cover unplugged storm drains w/mats, or use dirt/other material to divert sewage away from sensitive areas (e.g., schools, playgrounds, intersections, etc.)

b. ENSURE PUBLIC CONTACT DOES NOT OCCUR. Use cones/barricades to isolate area.

2. CONTAIN SPILL & RETURN TO SYSTEM, IF POSSIBLE:

a. As practical, plug or block drainage conveyance system entry locations or use rubber mats to cover basin inlet and divert flow to a downstream sanitary sewer manhole (*barricade manhole if left open and monitor after barricade)* or area suitable to capture the spill for later collection.

If any amount has already reached the drainage conveyance system, trace it downstream to a dry manhole and block it from entering surface waters. i.e., plugs, sandbags, or vacuum truck.

b. If you are confident that you can capture the spill in the drainage conveyance system, trace it downstream to a dry manhole and then divert the spill to the drainage conveyance system for later recovery and return to the sanitary sewer.

c. Use bypass pumps to pump around blockage until it can be removed.

d. Divert to low area of ground where it can be collected later.

3. PHOTOGRAPH each drainage conveyance system entry location.

ADDRESS CAUSE OF SPILL/BACKUP ASAP

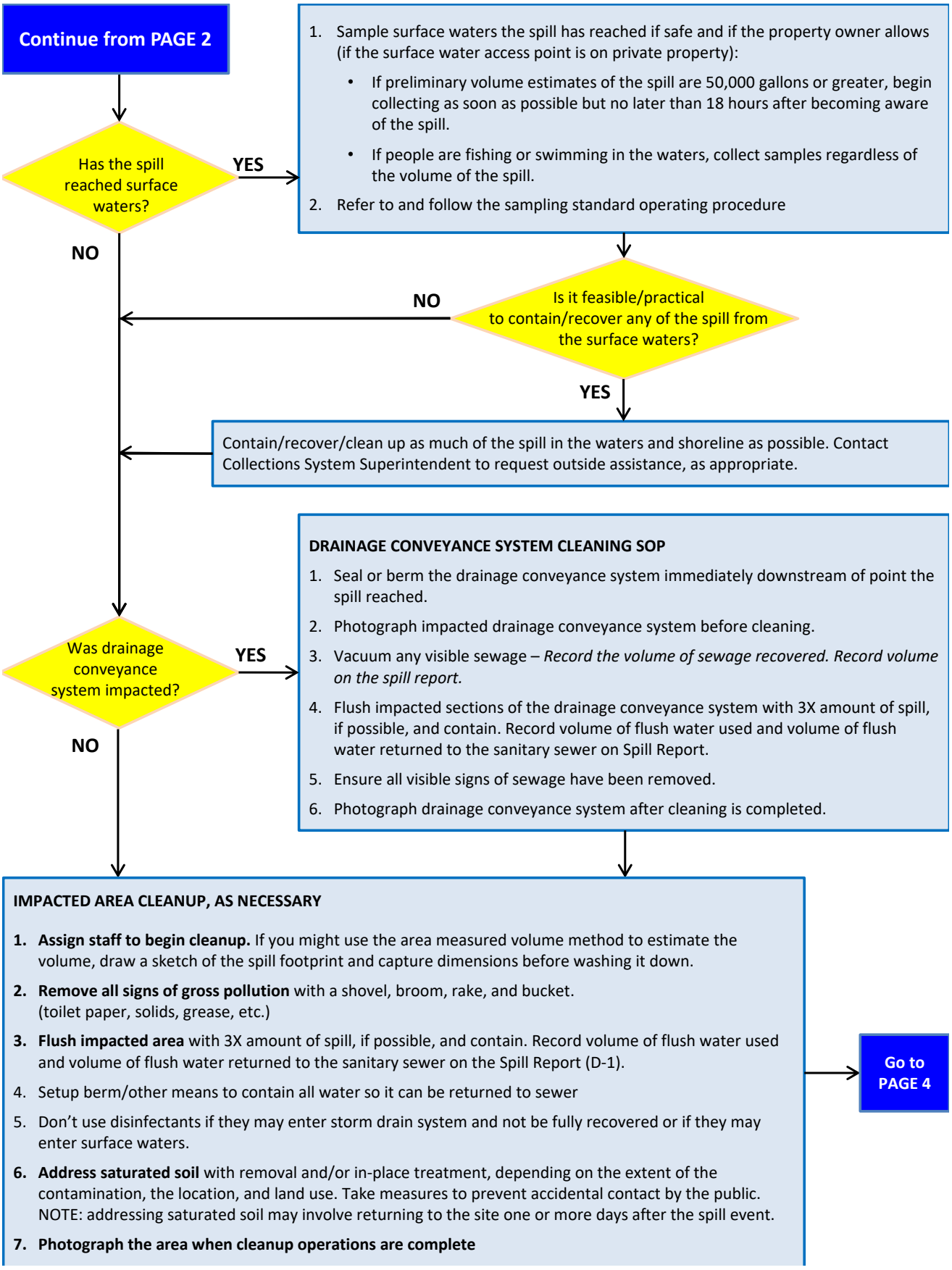
1. For spill/backups not related to a pump station, relieve the stoppage. Note the distance of the obstruction from the manhole and catch/remove debris that could cause another stoppage. After flow has returned to normal, clean the pipe thoroughly. Consider televising (CCTV) the affected line.

2. For pump station related spill/backups refer to that station's Emergency Response Plan.

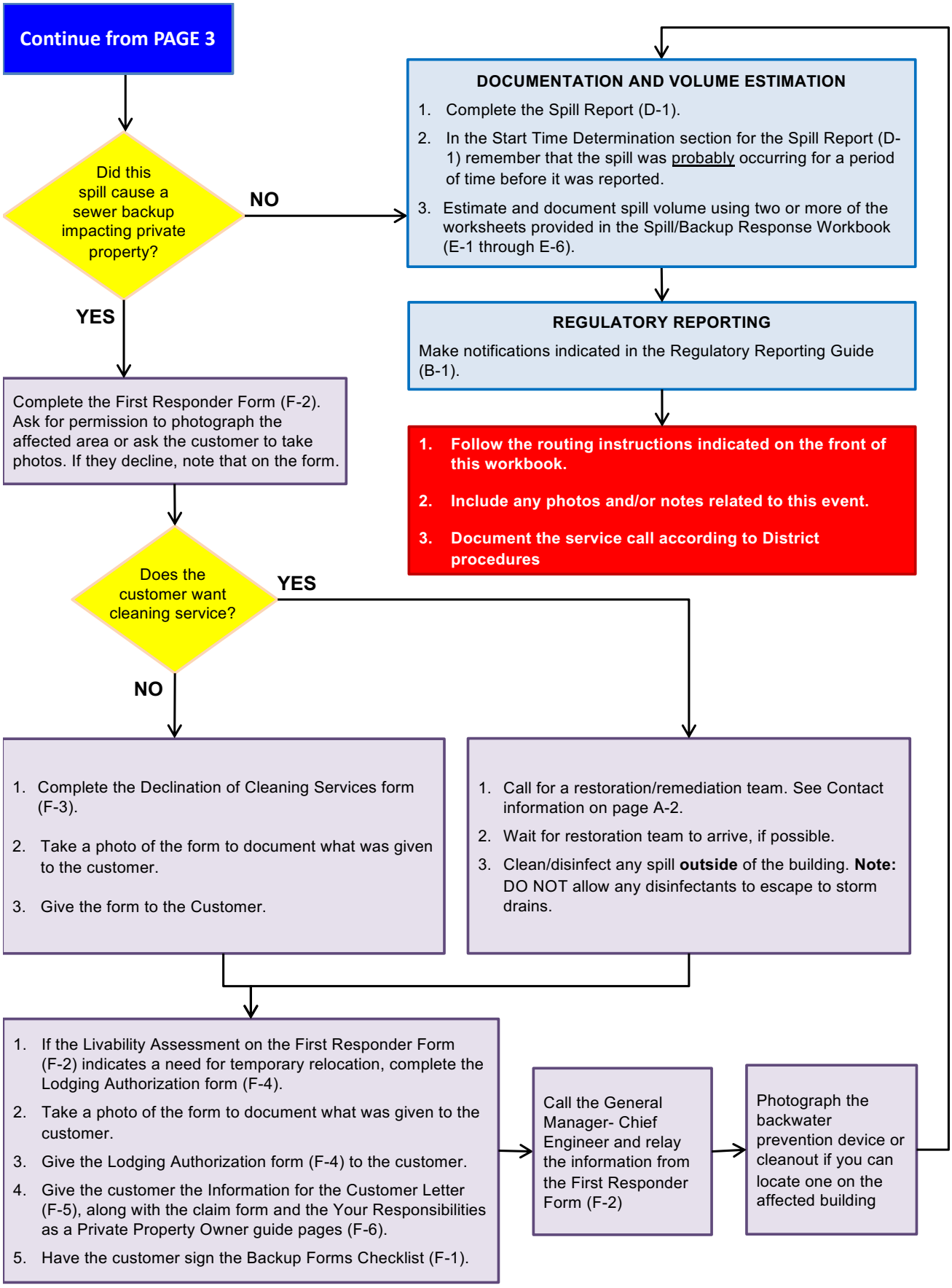
3. Photograph staff activities while clearing the blockage.

Go to PAGE 3

Spill/Backup Response Flowchart



Spill/Backup Response Flowchart



INSERT TAB:
Tab D: Spill Report

Sanitary Sewer Spill Field Report

Check spill category (see A-3 for definitions): ☐CATEGORY 1 ☐CATEGORY 2 ☐CATEGORY 3 ☐CATEGORY 4 ☐NON-CAT 1 Lat

CalOES NOTIFICATION*		
Date:	Time:	Assigned Control Number:

Names of the Persons Participating in Spill Event	Contact Information

PHYSICAL LOCATION DETAILS	
Spill location name:	
Location description:	
Address of spill:	
City: **Novato**	Cross Street:
Regional Water Quality Control Board: **San Francisco**	County: **Marin**

DATE/TIME

Date and time the District was notified of, or self-discovered, the spill: _____

Operator arrival time: _____

PHOTOGRAPHS

Photos must be taken during the spill event. At a minimum, the following photos must be taken:

- ○ Appearance point closest to the failure point
- ○ Extent of the spill and spill boundaries
- ○ Entry location of each drainage conveyance system the sewage entered
- ○ All discharge points into surface waters
- ○ Location(s) of clean up

Where are photographs stored?

* Within two (2) hours of the District's knowledge of a Category 1 or Category 2 spill of 1,000 gallons or greater, discharging or threatening to discharge to waters of the State, notify CalOES and obtain a notification control number.

Sanitary Sewer Spill Field Report

SPILL ORIGINATION	
Description and GPS coordinates of the system location where the spill originated*: *Include manhole number or cleanout location of the spill appearance point closest to the failure point as applicable.*	
Latitude:	Longitude:
Number of additional appearance points:	
Spill appearance points: (Check all that apply) ☐ Backflow Prevention Device ☐ Combined Sewer Drain Inlet (Combined Collection System Only) ☐ Force Main ☐ Gravity Mainline ☐ Inside Building/Structure ☐ Lateral Clean Out (Private) ☐ Lateral Clean Out (Public) ☐ Lower Lateral (Private) ☐ Lower Lateral (Public) ☐ Manhole ☐ Other Sewer System Structure ☐ Pump Station ☐ Upper Lateral (Private) ☐ Upper Lateral (Public) ☐ Other, describe:	
Describe each spill appearance point:	
Check to confirm photos were taken of all appearance points: ☐	

* Note: If a single spill event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the "Describe each spill appearance point" description section above. Take photos of spill appearance point(s).

SPILL DESTINATION (Check all that apply)	
Final spill destination(s): ☐ Drainage Conveyance System That Discharges to Surface Water ☐ Surface Water ☐ Building or Structure ☐ Drainage Conveyance System ☐ Groundwater Infiltration Basic or Facility ☐ Paved Surface ☐ Street/Curb and Gutter ☐ Unpaved Surface ☐ Other, describe:	
Description of the spill event destination(s) including GPS coordinates if available that represent the full spread and reach of the spill.	
Latitude:	Longitude:
Latitude (if needed):	Longitude (if needed):
Latitude (if needed):	Longitude (if needed):
Latitude (if needed):	Longitude (if needed):
Check to confirm photos were taken of spill destination/boundaries: ☐	

SPILL VOLUME

Estimated total spill volume exiting the system: _____ gallons

Method used to determine estimated spill volume exiting the system: _____

Did the spill reach a drainage conveyance system? ☐ YES ☐ NO If yes:

- Estimated time the spill reached the drainage conveyance system: _____
- Distance from drainage conveyance system to entry point to surface waters: _____ feet
- Method to determine travel time from point of entry to drainage conveyance system to receiving waters: _____
- Describe the drainage conveyance system transporting the spill: _____

Estimated spill volume fully recovered from the drainage conveyance system: _____ gallons

Method used to determine estimated spill volume recovered: _____

Estimated spill volume remaining within the drainage conveyance system: _____ gallons

Method used to determine est. spill vol. remaining in drainage conveyance system: _____

Check to confirm photos taken of entry location of drainage conveyance system the sewage entered: ☐

Did the spill reach surface water? ☐ YES ☐ NO

If yes:

- Estimated time the spill entered the surface water: _____
- Distance from spill appearance point to entry point to surface water: _____ feet
- Method to determine travel time to receiving waters: _____
- Describe all discharge points: _____

Estimated spill volume that discharged to surface waters: _____ gallons

Method used to determine estimated spill volume discharged to surface waters: _____

Estimated total spill volume recovered: _____ gallons

Method used to determine estimated total spill volume recovered: _____

Check to confirm photos were taken of the following, as applicable: all discharge points into surface waters, waterbody bank erosion, floating matter, water surface sheen, discoloration of receiving water, any notable impacts to the receiving water: ☐

Did the spill discharge to a groundwater infiltration basin or facility? ☐ YES ☐ NO

If yes, below section does not need to be completed since spill did not reach surface waters.

- Estimated time the spill entered the groundwater infiltration basin or facility: _____
- Estimated spill volume discharged to the groundwater infiltration basin or facility: _____ gallons
- Method used to determine estimated spill volume discharged: _____

SPILL VOLUME (continued)

Estimated spill volume that did NOT reach drainage conveyance system, surface water, or groundwater infiltration basin or facility: _____ gallons

Method used to determine estimated spill volume that did NOT reach drainage conveyance system, surface water, or groundwater infiltration basin or facility: _____

Estimated Total Spill Volume Recovered: _____ gallons

Method used to determine estimated total spill volume recovered: _____

Description of how the spill volume estimations were calculated, including at a minimum, the methodology, assumptions and types of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information, used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered):

SPILL START TIME and END TIME DETERMINATION	
Were there witnesses to the spill? ☐ YES ☐ NO If yes, provide Spill Witness Statements below:	
Witness 1 Name:	Witness 1 Contact Information:
Where did they see sewage spill from? ☐ Manhole ☐ Inside Building ☐ Vent/Clean Out ☐ Catch Basin ☐ Wet Well/Lift Station ☐ Other (describe):	
When did the witness notice the sewage spilling? _____ AM / PM Date _____ /_____ /_____ Witness description of spill and affected area: Is it currently spilling? ☐ YES ☐ NO When did the witness last observe **NO Spill** occurring? _____ AM / PM Date _____ /_____ /_____	
Did the witness notice if the spill had reached the storm drain or surface waters?	
Comments:	
Witness 2 Name:	Witness 2 Contact Information:
Where did they see sewage spill from? ☐ Manhole ☐ Inside Building ☐ Vent/Clean Out ☐ Catch Basin ☐ Wet Well/Lift Station ☐ Other (describe):	
When did the witness notice the sewage spilling? _____ AM / PM Date _____ /_____ /_____ Witness description of spill and affected area: Is it currently spilling? ☐ YES ☐ NO When did the witness last observe **NO Spill** occurring? _____ AM / PM Date _____ /_____ /_____	
Did the witness notice if the spill had reached the storm drain or surface waters?	
Comments:	
Witness 3 Name:	Witness 3 Contact Information:
Where did they see sewage spill from? ☐ Manhole ☐ Inside Building ☐ Vent/Clean Out ☐ Catch Basin ☐ Wet Well/Lift Station ☐ Other (describe):	
When did the witness notice the sewage spilling? _____ AM / PM Date _____ /_____ /_____ Witness description of spill and affected area: Is it currently spilling? ☐ YES ☐ NO When did the witness last observe **NO Spill** occurring? _____ AM / PM Date _____ /_____ /_____	
Did the witness notice if the spill had reached the storm drain or surface waters?	
Comments:	

SPILL START TIME and END TIME DETERMINATION (continued)

Are the volume of the spill and rate of flow known? ☐ YES ☐ NO

If yes, divide volume by rate of flow to get duration of spill event:

_____ Gallons ÷ _____ GPM = _____ Minutes
Spill Volume Flow Rate Spill Duration

Subtract the duration from the spill end date/time to establish the spill start date/time:

_____ — _____ = _____
Spill End Date/Time Duration Spill Start Time

Method to determine flow rate:

Solids Present? ☐ None or small amount (indicates recent start)
☐ Significant amount of buildup

Staining? ☐ None (indicates recent start)
☐ Minor
☐ Significant

Distance sewage has traveled from spill point:

Spill Date and Start Time:

Spill End Date and Time:

How was end time determined?
☐ Broke stoppage
☐ Turned pump station back on
☐ Other, explain:

Description of the methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time.

SPILL CAUSE (check all that apply)
☐ Air Relief Valve (ARV)/Blow Off Valve (BOV)/Backwater Valve Failure
☐ Construction Diversion Failure
☐ Collection System Maintenance Failure (Specify Below)
☐ Damage by Others Not Related to CS Construction/Maintenance (Specify Below)
☐ Debris from Construction
☐ Debris from Lateral
☐ Debris-General
☐ Debris-Rags
☐ Debris-wipes/Non-disposables
☐ Flow Exceeded Capacity (Separate CS Only)
☐ Fats, Oils and Grease (FOG)
☐ Inappropriate Discharge to CS
☐ Natural Disaster (Specify Below)
☐ Operator Error (Specify Below)
☐ Pipe Structural Problem/Failure – Installation
☐ Pipe Structural Problem/Failure – Controls
☐ Pump Station Failure – Power
☐ Pump Station Failure – Mechanical
☐ Pump Station Failure – Controls
☐ Rainfall Exceeded Design, I and I (Separate CS Only)
☐ Root Intrusion
☐ Siphon Failure
☐ Surcharged Pipe (Combines CS Only)
☐ Vandalism (Specify Below)
☐ Other, specify:

SYSTEM FAILURE LOCATION	
System failure location: ☐ Air Relief Valve (ARV)/Blow Off Valve (BOV) Failure ☐ Force Main ☐ Gravity Mainline ☐ Lower Lateral ☐ Manhole ☐ Pump Station Failure – Controls ☐ Pump Station Failure – Mechanical ☐ Pump Station Failure – Power ☐ Siphon ☐ Upper Lateral (Specify Below) ☐ Other, specify:	
Description of the pipe material at the failure location: ☐ Copper ☐ Galvanized Steel ☐ Polyvinyl Chloride (PVC) ☐ Acrylonitrile Butadiene Styrene (ABS) ☐ Cross-Linked Polyethylene (PEX) ☐ Cast Iron ☐ Vitrified Clay ☐ Concrete ☐ Ductile Iron ☐ Fiberglass ☐ Other, specify:	
Estimated age of sewer asset at the point of blockage or failure (if applicable):	years
Diameter of sewer pipe at the point of blockage or failure:	inches

SPILL IMPACT
Description of the impact of the spill:

STORM EVENT
Was spill associated with a storm event? ☐ YES ☐ NO

SPILL RESPONSE ACTIVITIES (check all that apply)
☐ Cleaned Up (Specify Below) ☐ Mitigated Effects of Spill (Specify Below) ☐ Contained All or Portion of Spill ☐ Restored Flow ☐ Returned All Spill to Sanitary Sewer System ☐ Returned Portion of Spill to Sanitary Sewer System ☐ Property Owner Notified ☐ Other Enforcement Agency Notified ☐ Other, specify:

SPILL CLEAN UP
Date and Time Spill Clean Up Began: Date: _____ Time: _____ AM / PM
Date and Time Spill Clean Up Completed: Date: _____ Time: _____ AM / PM
Clean Up Method: (select all that apply) ☐ Fresh Water Washdown ☐ Broom/Rake/Retrieve Solids ☐ Vacuum Retrieval ☐ Soil Removal ☐ Hydro-Jet/Vacuum Retrieve from Storm Conveyance System ☐ Building Restoration ☐ Disinfectants ☐ Other, specify:
Description of Clean Up Activities: Gallons of Water Washdown Used: _____ (gals)

SPILL CONTAINMENT	
Containment Location: (select all that apply) ☐ Curb and Gutter ☐ Street ☐ Open Space ☐ Storm Drain System ☐ Drainage Channel ☐ Inside Building ☐ Lawn/Landscaped Area ☐ Creek/Stream ☐ Wetland ☐ Other, specify:	Containment Method: (select all that apply) ☐ Photos of Containment in Place ☐ Inlet Mats ☐ Sandbags ☐ Naturally Contained ☐ Hand Dig Trench ☐ Dry Sweep ☐ Pneumatic Plugs ☐ Divert to Sewer System ☐ Absorbent Waddles ☐ Other, specify:

SPILL CORRECTIVE ACTION (check all that apply)
☐ Added Sewer to Preventive Maintenance Program ☐ Adjusted Schedule/Method of Preventive Maintenance ☐ Enforcement Action Against FOG Source ☐ Inspected Sewer Using CCTV to Determine Cause ☐ Plan Rehabilitation or Replacement of Sewer ☐ Repaired Facilities or Replaced Defect ☐ Other, specify:

Refer to Collection System Failure Analysis Report for details about:

- Spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps.
- Schedule of major milestones

Check to confirm completion of each report:

☐ Post-Spill Assessment
☐ Collection System Failure Analysis

Spill response completion date:

INVESTIGATION
Detailed narrative of investigation and investigation findings of cause of spill:
Is the District conducting an ongoing investigation? ☐ YES ☐ NO If yes, reasons for an ongoing investigation: If yes, expected date of completion of investigation: _____

SURFACE WATERS (Complete for Category 1 Spills Only)		
Name of receiving water body	Type of receiving water body: Stream, Ocean, Wetland, Slough, Estuary, River, Lake, Reservoir, Vernal Pool, Wash, or Other (specify)	Description of the water body(s), including but not limited to: ○ Observed impacts on aquatic life, ○ Public access impact(s): public closure, restricted public access, temporary restricted use, and/or other (specify below) ○ Responsible entity for closing/restricting use of water body, and ○ Number of days closed/restricted as a result of the spill.

MUNICIPAL INTAKE (Complete for Category 1 and 2 Spills Only)		
Was the spill located within 1,000 feet of a municipal surface water intake?	☐ YES	☐ NO
Describe:		

WATER SAMPLING
Were water quality samples collected? ☐ YES ☐ NO ☐ N/A If yes, identify sample locations:
Identify parameters the water quality samples were analyzed for: (Check all that apply) ☐ Total Coliform Bacteria ☐ Fecal coliform bacteria ☐ E-coli ☐ Ammonia ☐ Other, specify:

INSERT TAB:
Tab E: Volume Estimation

Miscellaneous Computations & Examples

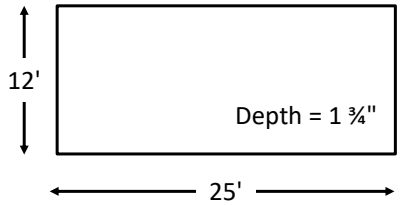
To convert inches to feet (NOTE: for the purposes of this worksheet, the unit of measurement will be in feet for formula examples)	Divide the inches by 12 or use the chart on the right. **Example 1:** 27" ÷ 12 = 2.25' **Example 2:** 1¾" = ?' 1" (0.08') + ¾" (0.06') = 0.14'
Volume of one cubic foot	7.48 gallons of liquid
Area: Two-dimensional measurement represented in square feet (SQ/FT or ft^2)	Square/rectangle: Area = Length x Width Circle: Area = $\pi \times r^2$ (where $\pi \approx 3.14$ and r = radius = ½ diameter) Triangle: Area = ½ (Base x Height)
Volume: Three-dimensional measurement represented in cubic feet (CU/FT or ft^3)	Rectangle/square footprint: Volume = Length x Width x Depth Circle footprint (cylinder): Volume = $\pi \times r^2$ x Depth (where $\pi \approx 3.14$ and r = radius = ½ diameter) Triangle footprint: Volume = ½ (Base x Height) x Depth
Depth: Wet Stain on Concrete or asphalt surface	If the depth is not measurable because it is only a wet stain, use the following estimated depths: ○ Depth of a wet stain on concrete surface: 0.0026' (1/32") ○ Depth of a wet stain on asphalt surface: 0.0013' (1/64") These were determined to be a reasonable depth to use on the respective surfaces through a process of trial and error. One gallon of water was poured onto both asphalt and concrete surfaces. Once the area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. This process was repeated several times.
Depth: Contained or "Ponded" sewage	Measure actual depth of standing sewage whenever possible. When depth varies, measure several representative sample points and determine the average. Use that number in your formula to determine volume.

Miscellaneous Computations & Examples (continued)

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

Area/Volume of a Rectangle or Square

Formula: Length x Width x Depth = Volume in **cubic feet**



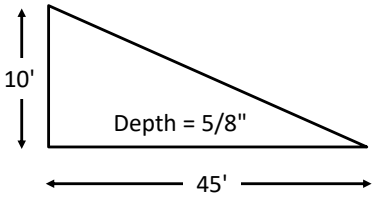
25' X 12' X 0.14' = **42 Cubic Feet**
Length Width Depth Volume

Multiply the volume by 7.48 gallons to determine the volume in **gallons**:

42 ft³ X 7.48 = **314.16 gallons**
Volume gal/ft³ Volume

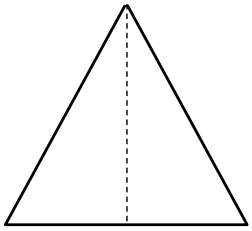
Area/Volume of a Right Triangle

Formula: Base x Height x Depth = Volume in **cubic feet**



0.5 X 45' X 10' X 0.05' x 7.48 = 84.15 gallons
Base Height Depth gal/ft³ Volume

For isosceles triangles (two sides are equal lengths), break it down into two right triangles and compute area as you would for the right triangle.

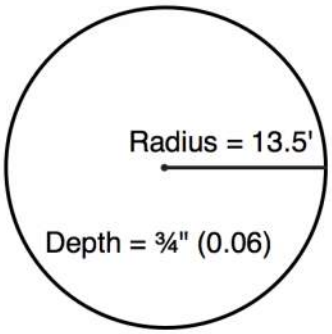


Area/Volume of a Circle

Formula: π x r² x Depth = Volume in **cubic feet**

The radius is ½ the diameter, which is a straight line passing from side to side through the center of a circle.

13.5' X 13.5' X 3.14 X 0.06' x 7.48 = 256.8 gallons
Radius Radius π Depth gal/ft³ Volume



Volume Estimation: Eyeball Estimation Method (for ≤50 gallons) E-2

Spill Date: _____ Location: _____

This method is invalid if surface conditions are wet (due to rainfall, irrigation, etc.) DO NOT use this method under these circumstances.

STEP 1: Position yourself so that you have a vantage point where you can see the entire spill.

STEP 2: Imagine one or more buckets or barrels of water tipped over. Depending on the size of the spill, select a bucket or barrel size as a frame of reference. It may be necessary to use more than one bucket/barrel size.

STEP 3: Estimate how many of each size bucket or barrel it would take to make an equivalent spill. Enter those numbers in Column A of the row in the table below that corresponds to the bucket/barrel sizes you are using as a frame of reference.

STEP 4: Multiply the number in Column A by the multiplier in Column B. Enter the result in Column C.

	A	B	C
Size of bucket(s)/barrel(s)	How many of this size?	Multiplier	Estimated Spill Volume
		x 1 gallon	
		x 5 gallons	
		x 32 gallons	
		x 55 gallons	
		x ___ gallons	
		Estimated Total Spill Volume:	

STEP 5: List assumptions made to arrive at the total estimated spill volume:

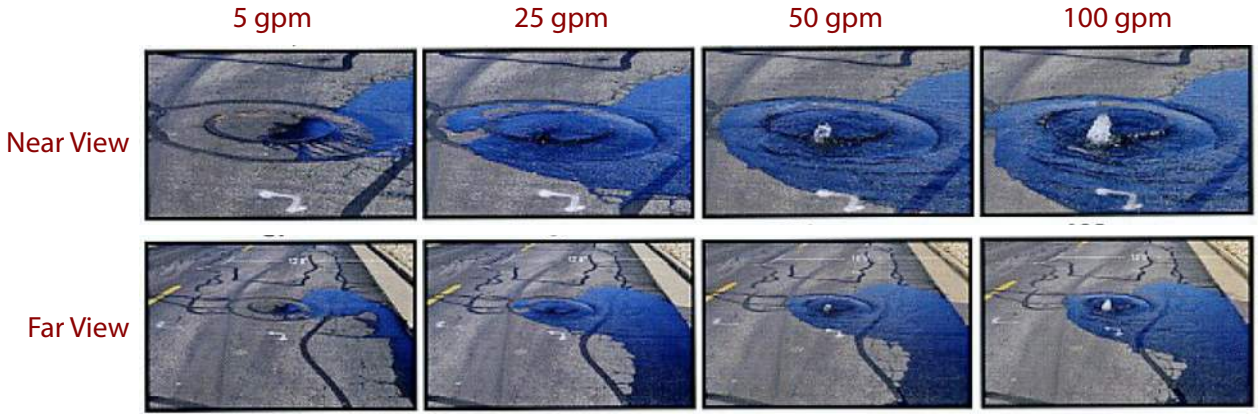
STEP 6: Take photographs. Where are photographs stored?

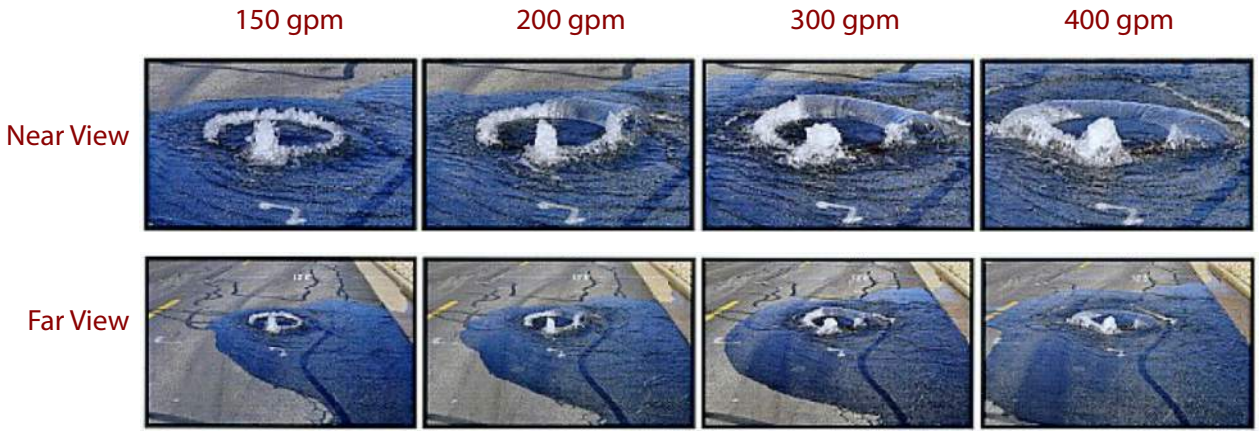
The following photos must be taken: appearance point closest to the failure point, extent of the spill and spill boundaries, the entry location of each drainage conveyance system the sewage entered, all discharge points into surface waters (Category 1 spill only), and location(s) of clean up.

Volume Estimation: Duration and Flow Rate Comparison Method

Spill Date: _____ Location: _____

Compare the spill to reference images below to estimate flow rate of the current spill. **NOTE: If the manhole cover in your picture has vent holes or more than one pry hole, do not use these pictures for comparison.**





SSCSC Manhole Spill Gauge: CWEA Southern Section Collections Systems Committee. Spill Simulation courtesy of Eastern Municipal Water District.

Describe which reference photo(s) were used and any additional factors that influenced applying the reference photo data to the actual spill:

Flow Rate Based on Photo Comparison: _____ gallons per minute (gpm)

(Continued on next page)

Volume Estimation: Duration and Flow Rate Comparison Method

Start Date and Time	1.
End Date and Time	2.
Spill Event Total Time Elapsed (subtract Line 1 from Line 2. Show in minutes.)	3.
Average Flow Rate GPM (Account for diurnal flow pattern)	4.
Total Volume Estimated Using Duration and Flow Method (Line 3 x Line 4)	5.

List assumptions made to arrive at the total estimated spill volume:

Take photographs. Where are photographs stored?

The following photos must be taken: appearance point closest to the failure point, extent of the spill and spill boundaries, the entry location of each drainage conveyance system the sewage entered, all discharge points into surface waters (Category 1 spill only), and location(s) of clean up.

Volume Estimation: Area/Volume Method

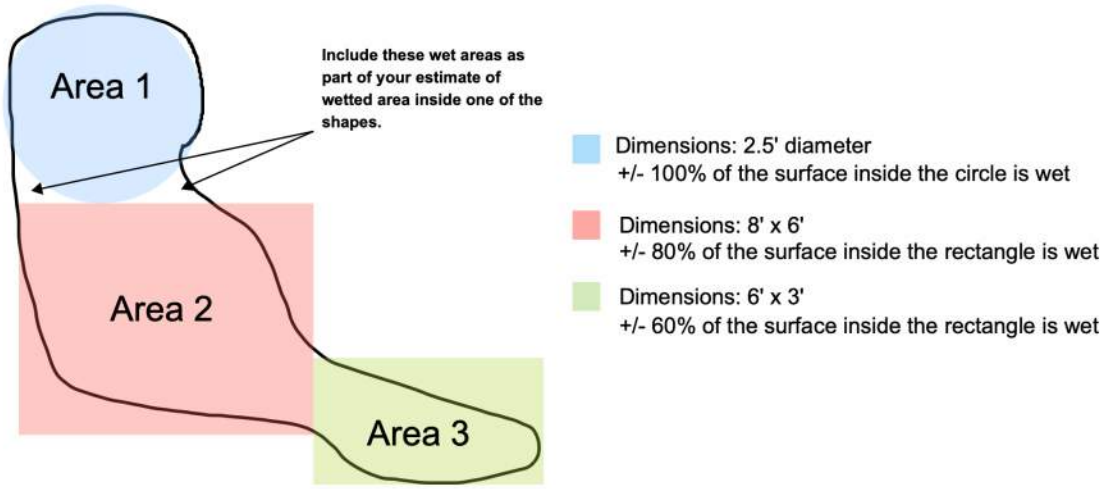
Spill Date: _____ Location: _____

STEP 1: Describe spill area surface: ☐ Asphalt ☐ Concrete ☐ Dirt ☐ Landscape ☐ Inside Building

☐ Other: _____

STEP 2: Draw/sketch the outline (footprint) of the spill. Then break the footprint down into recognizable shapes. Label/identify each sketch outline area (Area 1, Area 2, etc.) See example below.

EXAMPLE:



STEP 3: Calculate the area of the footprint by completing the table below for each area in Step 2. Measure actual depth of standing sewage whenever possible. When depth varies, measure several representative sample points and determine the average. If the depth is not measurable because it is only a wet stain, use the following estimated depths: Depth of a wet stain on concrete surface: 0.0026' (1/32")
Depth of a wet stain on asphalt surface: 0.0013' (1/64")

Rectangles:

Area # (from labeled drawing)		Length	X	Width	X	% Wet	=	Area	X	Depth	=	Volume
	→	ft	X	ft	X	%	=	ft^2	X	ft	=	ft^3
	→	ft	X	ft	X	%	=	ft^2	X	ft	=	ft^3
	→	ft	X	ft	X	%	=	ft^2	X	ft	=	ft^3

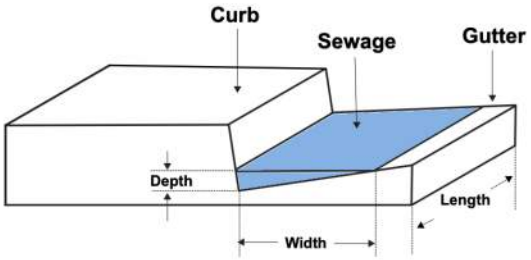
Circles:

Area # (from labeled drawing)		π	X	Radius	X	Radius	X	% Wet	=	Area	X	Depth	=	Volume
	→	3.14	X	ft	X	ft	X	%	=	ft^2	X	ft	=	ft^3
	→	3.14	X	ft	X	ft	X	%	=	ft^2	X	ft	=	ft^3
	→	3.14	X	ft	X	ft	X	%	=	ft^2	X	ft	=	ft^3

STEP 4: If part of the spill is in a gutter, use the formula below to calculate the volume:

_____ X _____ X _____ X 0.5 = _____ ft^3

Length Depth Width **Volume**



STEP 5: Calculate Total Spill Volume (sum of all of the volume calculations above): _____ ft^3

STEP 6: Convert from cubic feet to gallons by multiplying by 7.48.

_____ ft^3 x 7.48 gallons = _____ gallons

spill volume in cubic feet **Total estimated volume**

STEP 7: List assumptions made to arrive at the total estimated spill volume. Adjust estimation up for moderate to severe cracking and/or roughness of surface (General Rule 20% to 40%):

STEP 8: Take photographs. Where are photographs stored?

The following photos must be taken: appearance point closest to the failure point, extent of the spill and spill boundaries, the entry location of each drainage conveyance system the sewage entered, all discharge points into surface waters (Category 1 spill only), and location(s) of clean up.

Volume Estimation: Upstream Connections Method E-5

Spill Date: _____ Location: _____

Attach and/or reference system map and identify location of spill and buildings contributing to spill.

STEP 1: Determine the number of Equivalent Dwelling Units (EDUs) for this spill: _____ EDUs
NOTE: A single-family residential home = 1 EDU. For commercial buildings, refer to agency documentation.

STEP 2: This volume estimation method utilizes daily usage data based on flow rate studies of several jurisdictions in California. Column A shows how an average daily usage of 180 gallons per day is distributed during each 6-hour period. Adjust the table as necessary to accurately represent the actual data.

Complete Column E by entering the number of minutes the spill was active during each 6-hour time period. Multiply column D times Column E to calculate the gallons spilled during each time period. Add the numbers in Column F together for the Total Estimated spill Volume per EDU.

	Flow Rate Per EDU				**Spill**	
	A	**B**	**C**	**D**	**E**	**F**
Time Period	Gallons per Period	Hours per period	A÷B = Gallons per Hour	C÷60 = Gallons per Minute	Minutes spill was active during period	D × E = Gallons spilled per period
6am-noon	72	6	12	0.20		
noon-6pm	36	6	6	0.10		
6pm-midnight	54	6	9	0.15		
midnight-6am	18	6	3	0.05		
				Total Estimated Spill Volume per EDU:		

STEP 3: Multiply the Estimated spill Volume per EDU from Step 2 by the number of EDUs from Step 1.

_____ gallons X _____ = _____ gallons
Volume per EDU # of EDUs Estimated spill Volume

STEP 4: Adjust spill volume as necessary considering other factors, such as activity that would cause a fluctuating flow rate (doing laundry, taking showers, etc.). Explain rationale below and indicate adjusted spill estimate (attach a separate page if necessary).

Total Estimated spill Volume: _____ gallons

STEP 7: List assumptions made to arrive at the total estimated spill volume:

STEP 8: Take photographs. Where are photographs stored?

The following photos must be taken: appearance point closest to the failure point, extent of the spill and spill boundaries, the entry location of each drainage conveyance system the sewage entered, all discharge points into surface waters (Category 1 spill only), and location(s) of clean up.

Drawing Worksheet

INSERT TAB:
Tab F: Backup Forms

Backup Forms Checklist (Backup Only) F-1

Complete this form only if there is a backup into a residence or business.

Instructions to Collections Crew:

1. Take photo of each form before giving it to the customer for documentation.
2. Tear forms listed below out of this workbook and hand to customer. *Leave the First Responder Form in this workbook, do not give to Customer.*
3. Check each item that was provided to the customer.
4. Have customer sign below.

Forms/Documents:

- ☐ Form F-3: Declination of Cleaning Services
- ☐ Form F-4: Lodging Authorization
- ☐ Form F-5: Customer Information Letter
- ☐ Form F-6: Your Responsibilities as a Private Property Owner
- ☐ Form F-7: Claim Form

Forms Provided to:

_____
Customer Name

_____
Customer Signature

_____
Date

Check here if customer declines to sign: ☐

Formularios / Documentos:

- ☐ F-3: Declinación de los Servicios de Limpieza
- ☐ F-4: Autorización de Alojamiento
- ☐ F-5: Carta de Información del Cliente
- ☐ F-6: Sus Responsabilidades Como Propietario de Una Propiedad Privad
- ☐ F-7: Formulario de Reclamación

Formularios Proporcionados a:

_____
Nombre del cliente

_____
Firma del cliente

_____
Fecha

Marque aquí si el cliente se niega a firmar: ☐

Forms Provided by: _____ Employee Name _____ Initial _____ Date

Instructions to Collections System Superintendent:

Send photos, including the photos of the documents given to the customer, and a copy of the First Responder form to the General Manager- Chief Engineer.

First Responder Form (Backup Only)

Complete this form only if there is a backup into a residence or business.

Fill out this form as completely as possible.
Ask customer if you may enter the home. If so, take photos of all damaged and undamaged areas.

PERSON COMPLETING THIS FORM: Name: _____ Title: _____	PHONE: DATE: TIME:
TIME STAFF ARRIVED ON-SITE:	
DOES THE CUSTOMER WANT THE District TO CALL FOR CLEANING SERVICE? ☐ Yes ☐ No If no, give the customer the Cleaning Declination Form and have them sign here: _____ If customer called a cleaning contractor, provide name and contact number:	
RESIDENT NAME: ☐ Owner ☐ Renter ADDRESS: PHONE:	IF RENT, PROPERTY MANAGER(S): OWNER: ADDRESS: PHONE:
# OF PEOPLE LIVING AT RESIDENCE:	

Approximate Age of Home:	# of Bathrooms:	# of Rooms Affected:

Numbers of Photographs or Videos Taken: ☐ Photographs _____ ☐ Video _____ ☐ Customer did not provide or allow photographs	Where are photos/video stored?

Is nearest upstream manhole visibly higher than the drain/fixture that spilled? ☐ Yes ☐ No
Does property have a Property Line Cleanout or BPD? ☐ Cleanout ☐ BPD ☐ Neither ☐ Unknown
If yes, was the Property Line Cleanout/BPD operational at the time of the spill? ☐ Yes ☐ No ☐ Unknown
Have there ever been any previous spills at this location? ☐ Yes ☐ No ☐ Unknown
Has the resident had any plumbing work done recently? ☐ Yes ☐ No ☐ Unknown *If YES, please describe:*

GO TO PAGE 2

LIVABILITY ASESSMENT

- Is there insufficient non-contaminated living space for residents to stay during cleaning including a functioning and non-contaminated bathroom? ☐ Yes ☐ No
- Are there any residents that are pregnant, are children, have severe allergies/asthma, have respiratory problems, and/or have a compromised immune system? ☐ Yes ☐ No
- Is the area a childcare or extended care facility? ☐ Yes ☐ No
- Is the food preparation area contaminated? ☐ Yes ☐ No
- Is it after 8pm or will the cleaning and disinfection be completed after 10pm? ☐ Yes ☐ No

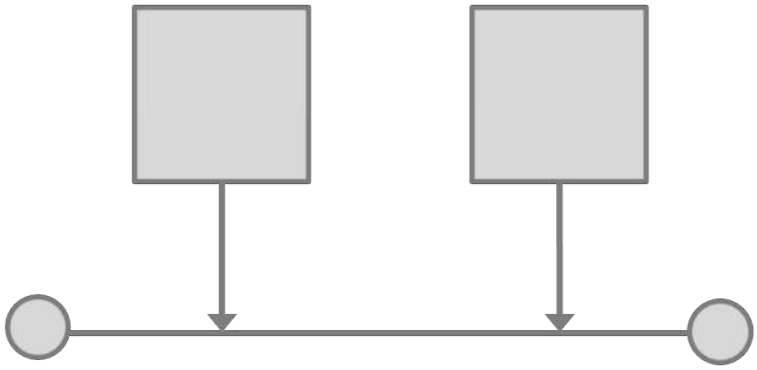
If the answer to any of the questions above is YES, complete the Lodging Authorization form.

If temporary lodging was offered by the District check one: ☐ Accepted ☐ Rejected

SANITARY SEWER LINE BLOCKAGE LOCATION

PLEASE CHECK THE BOXES THAT DESCRIBE YOUR OBSERVATIONS:	
Building Cleanout Was: ☐ Non-Existent ☐ Full ☐ Empty	Property Line Cleanout was ☐ Non-Existent ☐ Full ☐ Empty

On the diagram below, place an X where in the mainline or lateral you believe the problem occurred.



Did sewage go under buildings? ☐ Yes ☐ No ☐ Unsure

Recommended Follow-Up Action(s):

Declination of Cleaning Services (Backup Only) F-3

Customer Information		
NAME:	ADDRESS:	TELEPHONE:

ON (date)	AT (time)	Approximately (quantity)	GALLONS OF: ☐ Sewage ☐ Grey Water ☐ Toilet Bowl Water ☐ Odor ☐ Other (describe):

Spilled from (or odor emanating from)
☐ Toilet ☐ Shower/Tub ☐ Washer ☐ Other (describe):

The spill affected the following areas *(check one):*
☐ Bathroom ☐ Bedroom ☐ Hallway ☐ Garage
☐ Kitchen ☐ Crawlspace ☐ Other (specify):

The spill affected the following flooring:
☐ Tile ☐ Wood Flooring
☐ Linoleum ☐ Carpet
☐ Other (specify):

and/or additional materials:
☐ Area Rugs ☐ Towels
☐ Clothing ☐ Other (specify):

This Form Completed By: Name: _____ **Date:** _____
(Write legibly) Title: **Time:**

CUSTOMER, please read the following and sign below. I/We acknowledge that Novato Sanitary District (District) has offered to provide professional cleaning and decontamination services to remediate the sewage backup and/or spill described above and that we declined the offer. We further understand and acknowledge that because we have declined, any necessary remediation activities will be conducted without District assistance, and that the District will not accept responsibility for work performed by persons other than those engaged by the District. The District will also not accept responsibility for any charges related to this incident that are not usual and customary. Refer to "Your Responsibilities as a Private Property Owner" (Page F-6) for recommendations regarding spill cleanup.

CLIENTE, por favor lea lo siguiente y firme a continuación. Yo/Nosotros reconocemos que Novato Sanitary District (distrito) se ha ofrecido a proporcionar servicios profesionales de limpieza y descontaminación para remediar la reserva de aguas residuales y/o derrame descrita anteriormente y que rechazamos la oferta. Además, entendemos y reconocemos que debido a que hemos rechazado, cualquier actividad de remediación necesaria se llevará a cabo sin la asistencia de distrito, y que distrito no aceptará responsabilidad por el trabajo realizado por personas que no sean las contratadas por distrito. La distrito tampoco aceptará responsabilidad por ningún cargo relacionado con este incidente que no sea habitual y habitual. Consulte "Sus Responsabilidades Como Propietario De Una Propiedad Privada" (Página F-6) para obtener recomendaciones sobre la limpieza de derrames.

Customer Signature / Firma del cliente *:		**Date:**
The information above was explained to the customer by the following employee:	**Name:**	**Title:**
	Signature:	**Date:**

**Note to responders: if customer declines to sign this form, then have a co-worker sign here as a witness:*

Name: _____ *Signature:* _____ *Date:* _____

Lodging Authorization (Backup Only) F-4

INSTRUCTIONS TO EMPLOYEE:

1. Complete this form if the Livability Assessment on the First Responder Form indicates a need for temporary relocation and the customer accepts the offer.
2. Notify the Collections System Superintendent who will make arrangements via telephone and pay for the hotel with a credit card.
3. Complete the voucher as instructed by the Collections System Superintendent.
4. Take a photo of the form for records and then give it to the customer.
5. Indicate if they accept or reject the offer of temporary relocation on the First Responder Form (F-2).

INSTRUCTIONS TO RESIDENT:

Novato Sanitary District recommends that you temporarily relocate to one of the hotels listed below for your safety and convenience while your residence is being cleaned. Please note that this emergency authorization is granted under the following conditions:

1. This authorization provides for one (1) night's lodging at one of the hotels listed below.
2. The authorization is good for **room and tax ONLY**. Phone, food, mini-bar and other incidental charges will be your responsibility.
3. Contact the Deputy General Manager at (415) 892-1694 Ext. 111 or the General Manager-Chief Engineer (415) 892-1694 Ext. 106 to make alternative lodging arrangements.

INSTRUCCIONES PARA EL RESIDENTE:

Novato Sanitary District recomienda que se traslade temporalmente a uno de los hoteles enumerados a continuación por su seguridad y comodidad mientras se limpia su residencia. Tenga en cuenta que esta autorización de emergencia se concede bajo las siguientes condiciones:

1. Esta autorización prevé una (1) noche de alojamiento en uno de los hoteles que se enumeran a continuación.
2. La autorización es válida para habitación e impuestos SOLAMENTE. Teléfono, comida, minibar y otros cargos incidentales serán su responsabilidad.
3. Comuníquese con el Gerente General Adjunto al (415) 892-1694 Ext. 111 o el Gerente General-Ingeniero Jefe (415) 892-1694 Ext. 106 para hacer arreglos de alojamiento alternativo.

VOUCHER

Good for one (1) night's stay on (date): _____ Number of Affected Residents: _____

Customer's Name: _____

Field Supervisor's Name: _____ Phone Number: _____

Customer Information Letter (Backup Only) F-5 (English)

Dear Property Owner:

We recognize that sewer backup incidents can be stressful and require immediate response while all facts concerning how an incident occurred are still unknown. Rest assured that we do all we can to prevent this type of event from occurring in the first place. Nevertheless, occasionally tree roots or other debris in the sewer lines causes a backup into homes immediately upstream of the blockage. At this time the District is investigating the cause of this incident.

If the District is found to be responsible for the incident, we are committed to cleaning and restoring your property, and to protecting the health of those affected during the remediation process.

The cleaning contractor provided by the District has been selected because of their adherence to established protocols that are designed to assure to all parties thorough, cost-effective and expeditious cleaning services. You also have the right to select your own cleaning contractor, but the District does not guarantee payment of fees/expenses incurred and reserves the right to dispute fees/expenses deemed not usual and customary.

Depending on the extent of the backup our Collections Crew may advise you to consider relocating temporarily while the living area is cleaned. In that case, the District will arrange for lodging for you for one night. Please see the Lodging Authorization form for details.

To discuss this matter, or to submit a claim for damages, contact the General Manager-Chief Engineer (415) 892-1694 Ext. 106.

Sincerely,
Novato Sanitary District

Customer Information Letter (Backup Only) F-5 (Spanish)

Estimado Propietario:

Reconocemos que los incidentes de la red de alcantarillado pueden ser estresantes y requieren una respuesta inmediata, mientras que todos los hechos relacionados con la forma en que ocurrió el incidente aún son desconocidos. Tenga la seguridad de que haremos todo lo posible para evitar que este tipo de evento ocurra en primer lugar. Sin embargo, ocasionalmente las raíces de los árboles u otros residuos en las líneas de alcantarillado causan una copia de seguridad en los hogares inmediatamente antes del bloqueo. En este momento el distrito está investigando la causa de este incidente.

Si se determina que el distrito es responsable del incidente, nos comprometemos a limpiar y restaurar su propiedad, ya proteger la salud de las personas afectadas durante el proceso de remediación.

El contratista de limpieza proporcionado por el Distrito ha sido seleccionado debido a su adhesión a los protocolos establecidos que están diseñados para garantizar a todas las partes servicios de limpieza exhaustivos, rentables y rápidos. También tiene derecho a seleccionar su propio contratista de limpieza, pero el distrito no garantiza el pago de los honorarios / gastos incurridos y se reserva el derecho de disputar los honorarios / gastos que se consideren no habituales y habituales.

Dependiendo de la extensión de la copia de seguridad, nuestro Collections Crew puede aconsejarle que considere reubicarse temporalmente mientras se limpia la sala de estar. En ese caso, el District organizará el alojamiento para usted por una noche. Consulte el formulario de autorización de alojamiento para obtener más detalles.

Para discutir este asunto, o para presentar un reclamo por daños y perjuicios, comuníquese con el Gerente General-Ingeniero Jefe (415) 892-1694 Ext. 106.

Sinceramente,
Novato Sanitary District

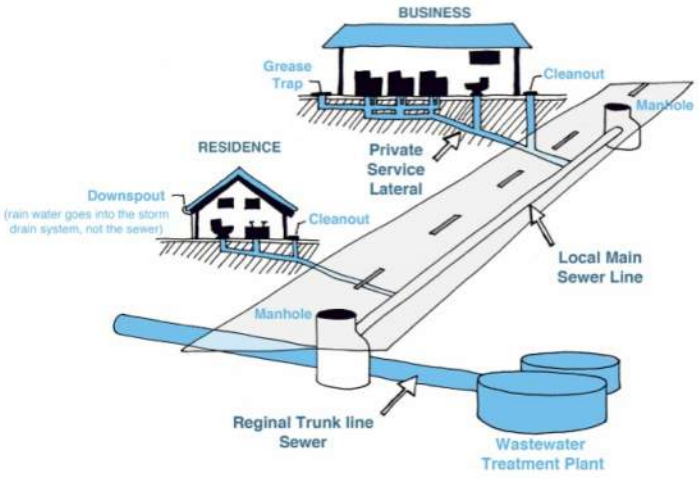
Your Responsibilities as a Private Property Owner (Backup Only) F-6: Page 1

How a Sewer System Works

A property owner's sewer pipes are called ***service laterals*** and are connected to larger local main and regional trunk lines. Service laterals run from the connection at the home to the connection with the public sewer. Depending on your location, a portion of the lateral is the responsibility of the property owner and must be maintained by the property owner.

How do sewage spills happen?

Sewage spills occur when the wastewater in underground pipes spills through a manhole, cleanout, or broken pipe. Most spills are relatively small and can be stopped and cleaned up quickly, but left unattended they can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and beaches. Common causes of sewage spills include grease build-up, tree roots, broken/cracked pipes, missing or broken cleanout caps, undersized sewers, and groundwater/rainwater entering the sewer system through pipe defects and illegal connections.



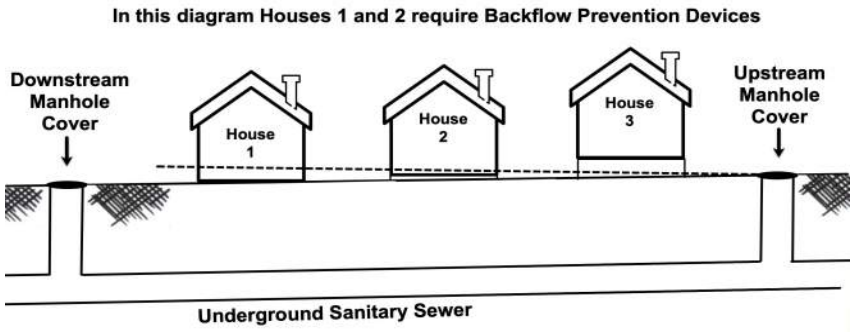
Prevent most sewage backups with a Backflow Prevention Device

This type of device can help prevent sewage backups into homes and businesses. If you don't already have a Backflow Prevention Device, contact a professional plumber or contractor to install one as soon as possible.

Is my home required to have a backflow prevention device?

Section 710.1 of the Uniform Plumbing Code (U.P.C.) states: *"Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover or private sewer serving such drainage piping **shall** be protected from backflow of sewage by installing an approved type of backwater valve."* The intent of Section 710.1 is to protect the building interior from mainline sewer spills or surcharges.

Additionally, U.P.C. 710.6 states: *"Backwater valves **shall** be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover."*



Spill cleanup inside the home:

For large clean ups, a professional cleaning firm should be contacted to clean up impacted areas, If you hire a contractor, it is recommended to get estimates from more than one company. Sometimes, homeowner's insurance will pay for the necessary cleaning due to sewer backups. Not all policies have this coverage, so check with your agent.

If you decide to clean up a small spill inside your home, protect yourself from contamination by observing the following safety measures. Those persons whose resistance to infection is compromised should not attempt this type of clean up.

Other Tips:

Seek immediate attention if you become injured or ill during or after the cleanup process.

- Keep children and pets out of the affected area.
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup.
- Discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water & detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.

Spill cleanup outside the home:

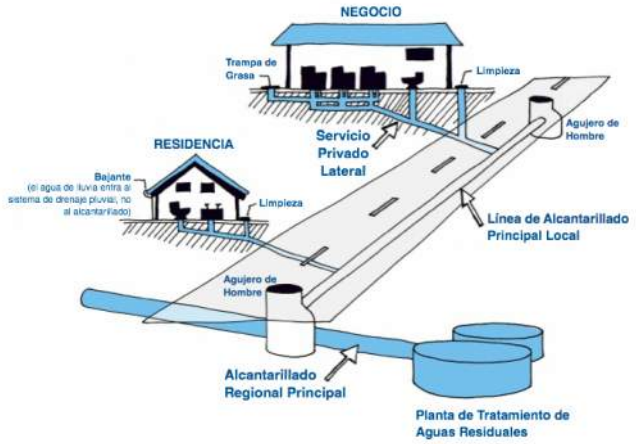
- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Clean up sewage solids (fecal material) and place in properly functioning toilet or double bag and place in garbage container.
- On hard surfaces areas such as asphalt or concrete, it is safe to use a 2% bleach solution, or ½ cup of bleach to 5 gallons of water, but don't allow it to reach a storm drain as the bleach can harm the environment.
- After cleanup, wash hands with soap and water. Use water that has been boiled for 1 minute (allow to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a laundromat until your onsite wastewater system has been professionally inspected and serviced.

Cómo funciona un sistema de alcantarillado

Las tuberías de alcantarillado de un propietario se denominan servicios laterales y están conectadas a líneas troncales principales y regionales locales más grandes. Los servicios laterales se ejecutan desde la conexión en el hogar hasta la conexión con el sistema de alcantarillado del Distrito. Estos laterales son responsabilidad del propietario y deben ser mantenidos por el propietario.

¿Cómo ocurren los derrames de aguas residuales?

Los derrames de aguas residuales ocurren cuando las aguas residuales en las tuberías subterráneas se desbordan a través de un pozo de acceso, limpieza o tubería rota. La mayoría de los derrames son relativamente pequeños y se pueden detener y limpiar rápidamente, pero si se los deja desatendidos, pueden causar riesgos para la salud, dañar viviendas y negocios y amenazar el medio ambiente, las vías fluviales locales y las playas. Las causas comunes de derrames de aguas residuales incluyen acumulación de grasa, raíces de árboles, tuberías rotas / agrietadas, tapas de limpieza faltantes o rotas, alcantarillas de tamaño insuficiente y aguas subterráneas / pluviales que ingresan al sistema de alcantarillado a través de defectos en las tuberías y conexiones ilegales.



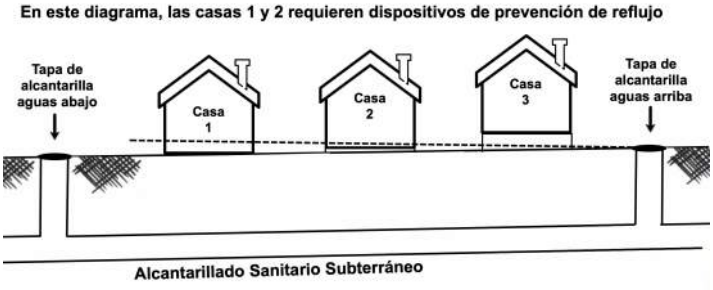
Prevenga la mayoría de las copias de seguridad de aguas residuales con un dispositivo de prevención de reflujo

Este tipo de dispositivo puede ayudar a prevenir las copias de seguridad de aguas residuales en hogares y empresas. Si aún no tiene un dispositivo de prevención de reflujo, comuníquese con un plomero o contratista profesional para instalar uno lo antes posible.

¿Se requiere que mi hogar tenga un dispositivo de prevención de reflujo?

La Sección 710.1 del Código Uniforme de Plomería (UPC) establece: “Los accesorios de tuberías de drenaje que tienen llantas de nivel de inundación ubicadas debajo de la elevación de la siguiente boca de alcantarilla corriente arriba o la alcantarilla privada que atiende dicha tubería de drenaje deben protegerse contra el reflujo de aguas residuales al instalar un tipo de válvula de evacuación ”. La intención de la Sección 710.1 es proteger el interior del edificio de los desagües o sobrecargas de alcantarillado de la línea principal.

Adicionalmente, U.P.C. 710.6 dice: Las válvulas de aguas residuales deben ubicarse donde puedan ser inspeccionadas y reparadas en todo momento y, a menos que estén continuamente expuestas, deben estar encerradas en un pozo de mampostería equipado con una cubierta removible del tamaño adecuado.



Limpieza de derrames dentro de la casa:

Para grandes limpiezas, se debe contactar a una empresa de limpieza profesional para limpiar las áreas afectadas. Si contrata a un contratista, se recomienda obtener estimaciones de más de una compañía. A veces, el seguro del propietario de vivienda pagará la limpieza necesaria debido a las reservas de alcantarillado. No todas las pólizas tienen esta cobertura, así que consulte con su agente.

Si decide limpiar un pequeño derrame dentro de su casa, protéjase de la contaminación observando las siguientes medidas de seguridad. Aquellas personas cuya resistencia a la infección esté comprometida no deben intentar este tipo de limpieza.

Otros consejos:

Busque atención inmediata si se lesiona o se enferma durante o después del proceso de limpieza.

- Mantenga a los niños y mascotas fuera del área afectada.
- Apague los sistemas de calefacción / aire acondicionado
- Use botas de goma, guantes de goma y gafas durante la limpieza.
- Deseche los artículos que no se puedan lavar y desinfectar (como: colchones, alfombras, cosméticos, juguetes, etc.)
- Retire y deseche los paneles de yeso y el aislamiento contaminado con aguas residuales o aguas de inundación.
- Limpie a fondo todas las superficies duras (como pisos, concreto, molduras, muebles de madera y metal, mostradores, electrodomésticos, fregaderos y otros accesorios de plomería) con agua caliente y ropa o detergente para platos.
- Ayude al proceso de secado con ventiladores, unidades de aire acondicionado y deshumidificadores.
- Después de completar la limpieza, lávese las manos con agua y jabón. Use agua que haya sido hervida por 1 minuto (deje que el agua se enfríe antes de lavarse las manos) O use agua que haya sido desinfectada (solución de 1/8 cucharadita de lejía doméstica por 1 galón de agua). Dejar reposar durante 30 min. Si el agua está turbia, use ¼ cucharadita de lejía de uso doméstico por 1 galón de agua.
- Lave la ropa usada durante la limpieza con agua caliente y detergente (lave aparte de la ropa no contaminada).
- Lavar la ropa contaminada con aguas residuales en agua caliente y detergente. Considere usar una lavandería hasta que su sistema de aguas residuales en el sitio haya sido inspeccionado y reparado profesionalmente.

Limpieza de derrames fuera de la casa:

- Mantenga a los niños y las mascotas fuera del área afectada hasta que se haya completado la limpieza.
- Use botas de goma, guantes de goma y gafas protectoras durante la limpieza del área afectada.
- Limpie los sólidos de alcantarillado (material fecal) y colóquelos en un inodoro o bolsa doble que funcione correctamente y colóquelos en un contenedor de basura.
- En áreas de superficies duras como el asfalto o el concreto, es seguro usar una solución de lejía al 2%, o ½ taza de lejía a 5 galones de agua, pero no permita que llegue a un drenaje de tormenta ya que la lejía puede dañar la ambiente.
- Después de la limpieza, lávese las manos con agua y jabón. Use agua que haya sido hervida por 1 minuto (deje enfriar antes de lavarse las manos) O use agua que haya sido desinfectada (solución de 1/8 cucharadita de cloro por 1 galón de agua). Dejar reposar durante 30 min. Si el agua está turbia, use ¼ cucharadita de lejía de uso doméstico por 1 galón de agua.
- Lave la ropa usada durante la limpieza con agua caliente y detergente (lave aparte de la ropa no contaminada).
- Lavar la ropa contaminada con aguas residuales en agua caliente y detergente. Considere usar una lavandería hasta que su sistema de aguas residuales en el sitio haya sido inspeccionado y reparado profesionalmente.

Claim Form (Backup Only) F-7

Name: _____ Date of Incident: _____

Address: _____

Telephone: _____ Date Reported: _____

Property Owner: ☐ Yes ☐ No

Briefly describe what occurred:

_____

_____

_____

_____

Describe Damage: (if any)

_____

_____

_____

_____

Insurance Contacted? ☐ Yes ☐ No

Clean up Agency contacted? ☐ Yes ☐ No

I certify the above information is true and correct to the best of my knowledge. I may be contacted at the telephone number listed above.

_____

Signature Date

Return completed form to: Novato Sanitary District
ATTN: General Manager-Chief Engineer
500 Davidson Street
Novato, CA 94945

INSERT TAB:
Tab G: SAMPLING SOP

Process:	***Surface Water Sampling***
Personnel Required:	• 1
Personal Protective Equipment:	• Safety Glasses • Rubber Gloves
License Required:	• None required
Common Hazards:	• Drowning or submersion • Slip, trip, and fall • Exposure • Insect/Wildlife • Weather • Boat/Watercraft • Physical Strain or Injury
Safe Operation Guidelines:	• Wear proper PPE • Be aware of currents, depth, and unstable banks • Do not eat, drink or smoke while sampling • Avoid cross-contamination • Label all samples clearly

Lab Contact Information	District lab or contract lab depending on worked and sample analyses needed

Surface water sampling helps to ensure water quality by identifying areas of concern and potential failure mechanisms that may impact surface waters or stormwater infrastructure in the service area.

Minimize Impacts

Surface water sampling allows for the proper evaluation of potential contamination following a sanitary sewer spill.

Having a thorough understanding of the service area and its various challenges can help responders be better prepared to minimize the impacts of a spill on local surface waters and stormwater infrastructure.

Before beginning the sampling process there are several important steps that must be taken to ensure that the samples collected are representative of the water quality in the area being monitored.

These steps include:

1. **Gathering the necessary equipment:**
    - The surface water sampling worksheet, chain of custody, sampling pole, sample containers, and PPE are essential tools that must be prepared and organized before sampling can begin.
2. **Donning appropriate personal protective equipment:**
    - To protect against exposure to potentially harmful contaminants and the sulfuric acid preservative in the Ammonia sample bottles, workers must wear gloves, eye protection, and other personal protective equipment, as needed.
3. **Determining the point of spill entry into the waterway:**
    - It's important to locate the point at which any spill entered the waterway in order to collect the required samples: point of entry into the surface water, downstream, and upstream.

The approximate stream velocity and time since the spill flow to the surface water stopped should be determined to calculate the appropriate distance to move downstream to collect:

1. **The downstream sample,**
2. **Move upstream to collect the spill entry point sample,**
3. **And move further upstream to collect the upstream or reference sample.**

Personal Protective Equipment

Personal Protective Equipment (PPE) should be used when conducting surface water sampling. The PPE that is required includes:

- Gloves
- Eye Protection

Sampling Equipment

In addition to PPE, other sampling equipment is necessary:

- Sample Bottles & Containers
- Cooler with Ice, or Ice packs
- Sampling Pole, or
- Rope & Bucket

The use of PPE and proper sampling equipment is important for the safety of the sampler and for ensuring accurate and reliable sampling results.

Test Type	Sample Locations			
	Spill Area	Downstream of Spill	Upstream of Spill	Drainage Conveyance System (as applicable)
Ammonia/ Nitrogen	1 pint with H2SO4	1 pint with H2SO4	1 pint with H2SO4	1 pint with H2SO4
Enterococcus	1 bacti bottle	1 bacti bottle	1 bacti bottle	1 bacti bottle
Fecal Coliforms	1 bacti bottle	1 bacti bottle	1 bacti bottle	1 bacti bottle
e. Coli	1 bacti bottle	1 bacti bottle	1 bacti bottle	1 bacti bottle

Water samples must be collected in different bottles for various tests and then transported in a cooler with ice packs.

For each of the three sampling sites (plus drainage conveyance system as applicable), one bottle is needed for ammonia/nitrogen testing, and one bacti bottle is required for each type of bacteria being tested.

Additionally, one field blank sample is required for each constituent. Field blank sample bottles are filled with sterilized water during sampling to serve as quality control on the sampler's sampling methods.

Since the sample bottles contain sterilized water, bacteria and ammonia should not be present in the water. If the lab analysis shows the presence of bacteria or ammonia, it indicates that the sampler's method may not have been correct, and the other bacti samples may have been contaminated.

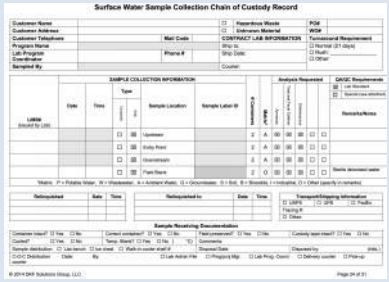
Surface Water Sampling – Preparation

Step 1 of 4

Prepare the cooler for sample storage by adding an instant ice pack, ice pack, or ice to keep the samples cold during transport to the lab.

Step 2 of 4

Identify the point of the spill where the wastewater entered the waterway and take a photograph of this location with a reference point in the picture.


Surface Water Sample Collection Chain of Custody Record

Step 3 of 4

Begin completing the ***Surface Water Sampling Worksheet*** to record the relevant information about the sampling location and collected samples.

Step 4 of 4

To determine which direction is upstream and downstream for sample collection, you should observe the direction of water movement from the point of discharge.

The purpose of this procedure is to provide a standard for collecting surface water samples to assess water quality, avoid contamination, and ensure that samples can be accurately labeled and transported to the lab for processing.

Notes:

Start by collecting downstream samples first.

In order to determine where the downstream sample is located in a stream, creek, or river, you will need to determine the velocity of the surface water. This can be accomplished through the use of a stream velocity meter or by measuring off a distance along the bank and timing how long it takes for a floating object to travel that distance.

Use the formula on the *Surface Water Sampling Worksheet* to calculate the stream velocity. Once known, determine the time that the spill **has not been** entering the surface water.

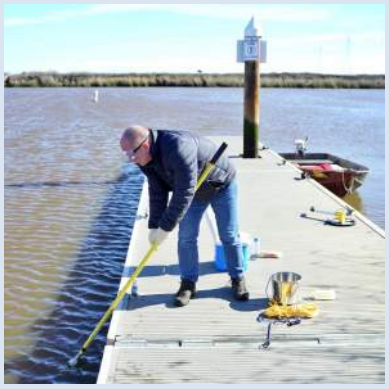
This, along with the stream velocity, will inform you how far downstream you need to travel to collect the downstream sample.

Step 1 of 9

Don the appropriate PPE from your sampling kit. This should include latex or rubber gloves and safety glasses.

Step 2 of 9

Label all samples with their location (refer to table on G-8), your name, and the date and time they are collected. Record this information on the surface water sampling worksheet.



Step 3 of 9

Take photos of each sample location and ensure a reference point is visible in each photo. In the photo (left), the dock and sign serve as excellent reference points.

Step 4 of 9

Remove the seal from the Ammonia sample container just prior to collecting your sample, as applicable.

To reduce the likelihood of contamination, remove the cap immediately before collecting each sample.

Step 5 of 9

To prevent sample contamination, do not allow the inside of the cap to touch anything while you are obtaining the sample.

Step 6 of 9

When filling the ammonia nitrogen sample bottle, don't overfill it because it contains sulfuric acid. Sweep the bottle or dipper upstream and out of the water without disturbing the bottom sediment. Remember to leave the sulfuric acid in the bottle and avoid skin contact.

Step 7 of 9

Fill the Ammonia sample bottle to the fill line, and immediately replace the cap. If there is no clear fill line, fill it to the "neck" of the bottle.

Step 8 of 9

Open the Bacteria sample container and allow water to gently flow into the bottle just to the fill line.

Repeat the sampling process for all sample points, and **provide a "field blank"** sample using sterile water, which verifies the quality of the samples.

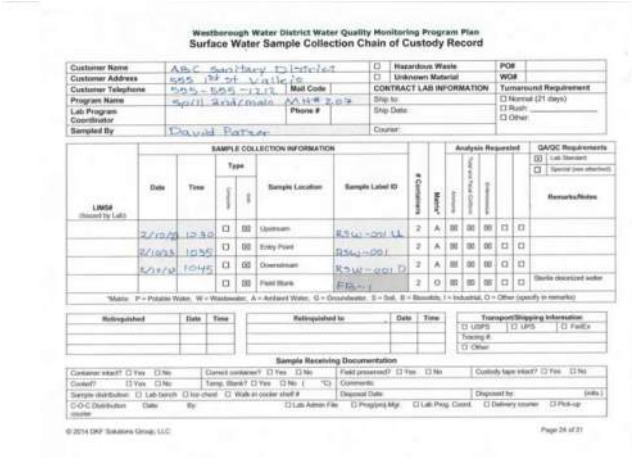
Step 9 of 9

Place all samples in the cooler on the ice pack. To ensure accurate analysis, the Bacti samples must be transported to the lab within 6 hours of the time of collection.

Step 1 of 4: Documentation

All samples must be labeled with their location, your name, and the date and time they were collected. Refer to the state requirements found on the last page of this document. Record this information on the chain of custody form and the surface water sampling worksheet.

Chain of Custody Record



Surface Water Sampling Worksheet

Step 2 of 4: Contact the Lab

Inform the lab that the following samples require processing: ammonia-nitrogen, total/fecal coliform, e. Coli, and/or enterococcus. Provide any additional information the lab may require.

Step 3 of 4: Transport Samples

Place the samples in the cooler on the ice pack and transport them to the lab within 6 hours of collection time. Complete the chain of custody form and ensure all samples are properly secured during transport.

Step 4 of 4: Post Warning Signs

If directed by your supervisor or the county environmental health division, post warning signs in the affected area. Keep track of sign locations and remove warning signs and lift restrictions only when authorized to do so.

The Enrollee shall collect receiving water samples at the following locations:

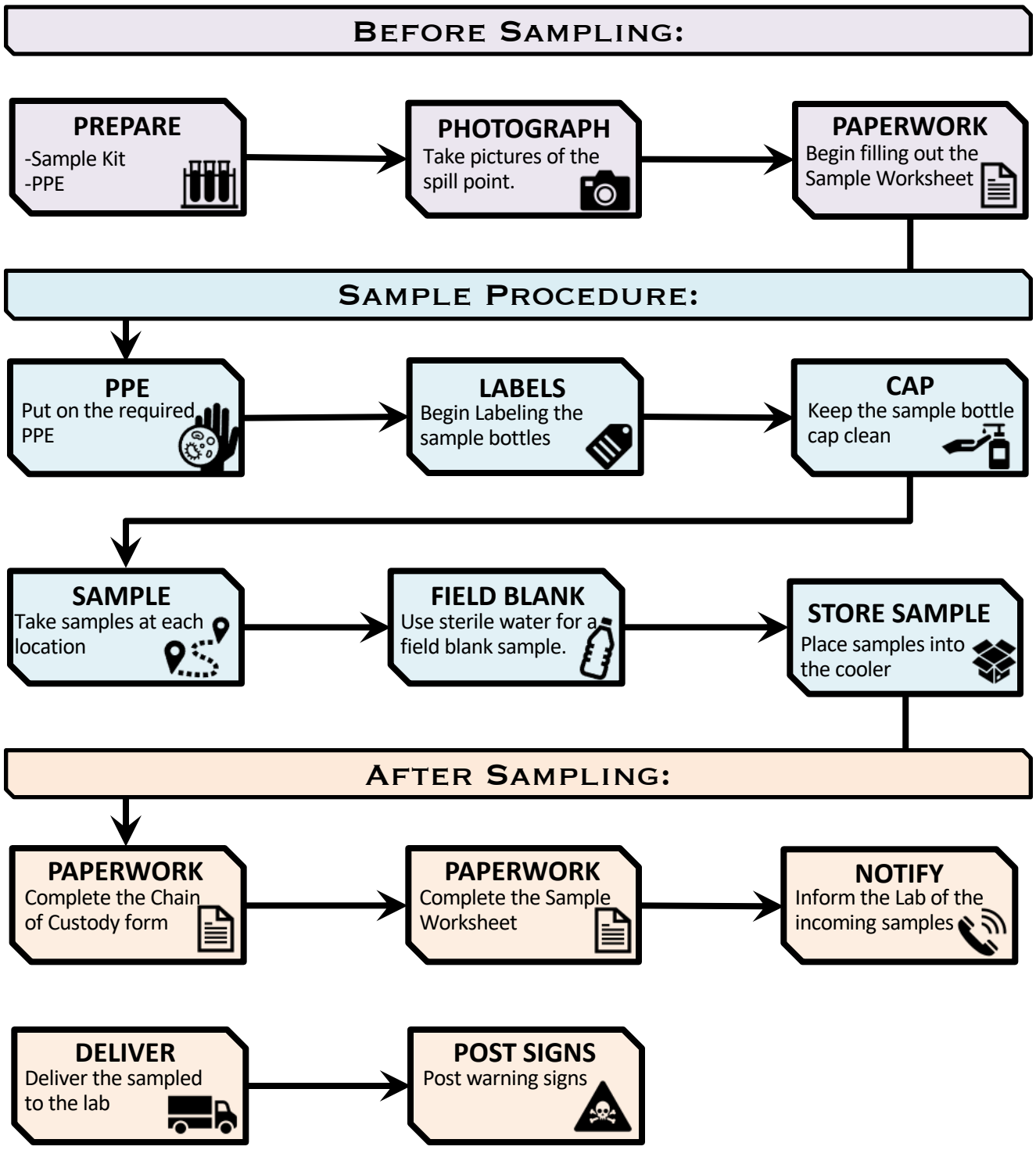
Sampling of Flow in Drainage Conveyance System (DCS) Prior to Discharge

Sampling Location	Sampling Location Description
DCS-001	A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.

Receiving Surface Water Sampling (RSW[1])

Sampling Location	Sampling Location Description
RSW-001 Point of Discharge	A point in the receiving water where sewage initially enters the receiving water.
RSW-001U Upstream of Point of Discharge	A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.
RSW-001D Downstream of Point of Discharge	A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

[1]The Enrollee must use its best professional judgment to determine the upstream and downstream distances based on receiving water flow, accessibility to upstream/downstream waterbody banks, and size of visible sewage plume.



Surface Water Sampling Worksheet

Sample Date:	Sample Time: ☐AM ☐PM	Sample Location:
Sampler(s)' Name(s):		
Sampler(s)' Signature(s):		

What is being sampled?

☐Stream ☐Pond ☐Lake ☐River ☐Other:

Weather at time of sampling:

☐Sunny ☐Overcast ☐Sprinkling ☐Raining

Was the spill actively entering the surface water during Sampling?

☐YES ☐NO If no, complete A-D in the gray box to the right.

If the spill was not actively entering the surface water during sampling:

A. Stream Velocity: _____CFS

B. How Long Has the spill ***NOT*** Been Entering the Surface Water?

_____ minutes X 60sec/min = _ seconds

C. How Far Downstream Did You Travel To Collect The SOURCE Sample?

(A X C = Feet): _____ feet

D. Explain why you travelled a different distance, if you did, to collect the source sample:

Sample Location	Sample Label	# of Samples*	Photo ID# of Sample Location	Visual Observations and/or Interferences
Drainage Conveyance	DCS-001	4		
Source*	RSW-001	4		
Upstream*	RSW-001U	4		
Downstream*	RSW-001D	4		
Field Blank*	Field Blank	4		

* Collect duplicate bacteria samples at each location

FINISH CHECKLIST	NOTES / OBSERVATIONS
☐ **All Samples Labeled with:** ☐ Date: a six-digit number indicating the year, month, day of collection ☐ Time: a four-digit number indicating military time of collection. e.g. 0954 ☐ Sample Location: Drainage Conveyance, Source, Upstream, or Downstream ☐ Samplers: each sampler is identified ☐ Parameter/preservative: analysis to be conducted for sample/sample preservation ☐ **Chain of Custody Completed** ☐ **Samples on Ice in Cooler** ☐ **Pictures Taken of Each Sample Location and the Photo ID/# Noted Above** ☐ **All Sampling Equipment Collected**	

Surface Water Sample Chain of Custody Record

G-11

Customer Name	Novato Sanitary District	☐	**Hazardous Waste**	**PO#**	
Customer Address		☐	**Unknown Material**	**WO#**	
Customer Telephone	**Zip Code**	**CONTRACT LAB INFORMATION**		**Turnaround Requirement**	
Program Name		Ship to:		☐ Normal (21 days)	
Lab Program Coordinator	**Phone #**	Ship Date:		☐ Rush: _____	
Sampled By		Courier:		☐ Other:	

LIMS# (Issued by Lab)	SAMPLE COLLECTION INFORMATION						# Containers	Matrix*	Analysis Requested					QA/QC Requirements	
	Date	Time	Type: Composite	Type: Grab	Sample Location	Sample Label ID			Ammonia	Total and Fecal Coliform	Enterococcus	E. coli		☒	Lab Standard
														☐	Special (see attached)
															Remarks/Notes
			☐	☒	Drainage Conveyance	DCS-001	4	A	☒	☒	☒	☒	☐		
			☐	☒	Entry Point	RSW-001	4	A	☒	☒	☒	☒	☐		
			☐	☒	Upstream	RSW-001U	4	A	☒	☒	☒	☒	☐		
			☐	☒	Downstream	RSW-001D	4	A	☒	☒	☒	☒	☐		
			☐	☒	Field Blank	Field Blank	4	O	☒	☒	☒	☒	☐		Sterile deionized water

*Matrix: P = Potable Water, W = Wastewater, A = Ambient Water, G = Groundwater, S = Soil, B = Biosolids, I = Industrial, O = Other (specify in remarks)

Relinquished	Date	Time

Relinquished to	Date	Time

Transport/Shipping Information		
☐ USPS	☐ UPS	☐ FedEx
Tracing #:		
☐ Other:		

Sample Receiving Documentation

Container intact? ☐ Yes ☐ No	Correct container? ☐ Yes ☐ No	Field preserved? ☐ Yes ☐ No	Custody tape intact? ☐ Yes ☐ No
Cooled? ☐ Yes ☐ No	Temp. Blank? ☐ Yes ☐ No (°C)	Comments:	
Sample distribution: ☐ Lab bench ☐ Ice chest ☐ Walk-in cooler shelf #		Disposal Date:	Disposed by: (inits.)
C-O-C Distribution Date: By: ☐ Lab Admin File ☐ Prog/Proj Mgr. ☐ Lab Prog. Coord. ☐ Delivery courier ☐ Pick-up courier			

INSERT TAB:
Tab H: POST-SPILL

Post-Spill Assessment

SPILL LOCATION
Spill location name:
Address of spill:

NOTIFICATION AND COMMUNICATION PROCEDURES	
Were notification procedures adhered to?	☐ Yes ☐ No
Were notification procedures effective?	☐ Yes ☐ No
RESPONSE PROCEDURES	
Were response time goals met?	☐ Yes ☐ No
Were safety procedures adhered to?	☐ Yes ☐ No
Were safety procedures effective?	☐ Yes ☐ No
Were initial response procedures adhered to?	☐ Yes ☐ No
Were initial response procedures effective?	☐ Yes ☐ No
Were containment procedures adhered to?	☐ Yes ☐ No

RESPONSE PROCEDURES (continued)	
Were containment procedures effective?	☐ Yes ☐ No
Were clean up and recovery procedures adhered to?	☐ Yes ☐ No
Were clean up and recovery procedures effective?	☐ Yes ☐ No
Were sewer back up procedures adhered to?	☐ Yes ☐ No
Were sewer back up procedures effective?	☐ Yes ☐ No
Were chain of custody procedures adhered to?	☐ Yes ☐ No
Was failure analysis investigation performed and documented?	☐ Yes ☐ No
REPORTING AND NOTIFICATION PROCEDURES	
Were reporting and notification timeline requirements met?	☐ Yes ☐ No

DOCUMENTATION	
Was spill file created?	☐ Yes ☐ No
Was QA/QC performed to ensure field data matched CIWQS data?	☐ Yes ☐ No

RECOMMENDED CHANGES
☐ N/A

ATTENDEES	

FACILITATED BY	
	Date:

OFFICE USE ONLY

Incident Report #		Prepared By	
Spill/Backup Information			
Cause			
Summary of Historical Spills/Backups/Service Calls/Other Problems			
Date	Cause	Date Last Cleaned	Crew
Records Reviewed By:		Record Review Date:	
Summary of CCTV Information			
CCTV Inspection Date		File Name/Number	
CCTV File Reviewed By		CCTV Review Date	
Observations			

Go to Page 2

Recommendations					
✓	Type	Specific Actions	Who is Responsible?	Completion Deadline	Who Will Verify Completion?
	No Changes or Repairs Required	n/a	n/a	n/a	n/a
	Added sewer to preventive maintenance program				
	Adjusted schedule/method of preventive maintenance				
	Enforcement action against FOG source				
	Plan rehabilitation or replacement of sewer				
	Repaired facilities or replaced defect				
	Change(s) to Spill Response Procedures				
	Training				
	Misc.				
Comments/Notes:					
Reviewed By:				Review Date:	

APPENDIX E Grease Hauler Service Provider/Vendor List

Appendix E
Grease Removal Company Information
Novato Sanitary District

-This list in NOT inclusive. Other companies may service Novato and Marin County.
-The listing of a business does not constitute a recommendation or endorsement by Novato Sanitary District.

Websites	Company	Phone Number	Services Offered				
			Grease Trap Cleaning	Grease Interceptor Cleaning	Used Cooking Oil Recycling	Provides Grease Trap Waste Container & Pick-Up (for restaurants that self-clean)	Steam Cleaning/ Pressure washing of Waste Container & Garbage Areas
	KB Grease	(650) 670-5144	YES	YES	YES	YES	YES (cold water)
http://www.northbayrestaurantservices.com/	North Bay Restaurant Services	(707) 824-9737	YES	YES	YES	YES	YES
https://clarkservices1.com/	Clark Services (Jeremy Clark)	(510) 970-7910					
http://www.bayarearestaurantsvcs.com/	Bay Area Restaurant Services	(888) 994-0753					
https://www.epsseptic.com/	Environmental Pump Service	(707) 775-5443	YES	YES	YES	YES	YES
https://choosesq.com/	Sequential (Mahony Enviromental)	(800) 447-3794	YES	YES	YES	YES	YES
http://www.darlingii.com/	Darling International Inc.	(415) 647-4890	NO	NO	YES	NO	NO
	Pioneer Liquid Transport	(800) 366-6808	YES	YES	NO	YES	NO
https://www.qualitysepticservice.net/	Quality Septic Service	(707) 585-9000					
http://www.rdgreasetrap.com/	R &D Grease Trap Cleaning	(707) 632-5827	YES	NO	NO	NO	NO
http://srccompanies.com/	SRC (Sacramento Rendering Company)	(800) 339-6493, (916) 363-1342	YES	YES	YES	YES	NO
http://allvalleyenv.com/	All Valley Environmental, Inc.	(559) 498-8378	NO	NO	NO	NO	NO
https://coastsanitary.com/	Coast Sanitary Services	(415) 868-2720	NO	NO	NO	NO	NO
https://joesfarmersinc.com/	Joe's Farmers Septic & Grease Service	(707) 546-3236	YES	YES	YES	NO	NO
	California Wastewater Management	(800) 987-4541					
https://www.ars.com/	ARS Rescue Rooter	(510) 210-0779					
https://www.rotorooter.com/	Roto-Rooter	(415) 898-2700 or (415) 388-2740	NO	NO	NO	NO	NO
https://www.vineyardseptic.com/	Vineyard Septic	(707) 795-5780	NO	YES	NO	NO	NO
https://citysewerpumping.net/	City Sewer Pumping Inc	(415) 663-1926	YES	YES	NO	NO	NO
	United Site Services	(800) 864-5387	YES	YES	YES	YES	YES
http://www.patriotenvironmental.com/	Patriot Environmental	(500) 488-3985, (800) 624-9136					
https://www.interstateoil.com/	Interstate Oil	(916) 457-6572, (916) 200-5635					
https://www.safety-kleen.com/	SafetyKleen	(707) 584-0415	YES	NO	NO	NO	NO
	West Coast Trap Recycling	(510) 672-7541 Paul Rivas	YES	YES	YES	YES	YES
https://www.sanfranciscofloodrepair.com/	Allied Restoration Company	(415) 529-5637	NO	NO	NO	NO	NO

APPENDIX F FOG BMP Factsheet

NOVATO SANITARY DISTRICT
500 DAVIDSON STREET • NOVATO • CALIFORNIA 94945 • PHONE (415) 892-1694 • FAX (415) 898-2279
www.novatosan.com

A FACT SHEET FOR

Best Management Practices for Fats, Oils and Grease

Residual fats, oils and grease (FOG) are by-products that food service establishments must constantly manage. Typically, FOG enter a facility's plumbing system from ware washing, floor cleaning, and equipment sanitation. Sanitary sewer systems are neither designed nor equipped to handle the FOG that accumulates on the interior of the sewer collection system pipes. The best way to manage FOG is to keep the material out of the plumbing systems. The following are suggestions for proper FOG management.

Dry Clean-Up

Practice dry cleanup. Remove food waste with "dry" methods such as scraping, wiping, or sweeping before using "wet" methods that use water. Wet methods typically wash the water and waste materials into the drains where it eventually collects on the interior walls of the drainage pipes. Do not pour grease, fats or oils from cooking down the drain and do not use the sinks to dispose of food scraps. Likewise it is important to educate kitchen staff not to remove drain screens as they may allow paper or plastic cups, straws, and other utensils to enter the plumbing system during clean up. The success of dry clean up is dependent upon the behavior of the employee and availability of the tools for removal of food waste before washing. To practice dry clean up:

- Use scrapers to remove fats, oils and grease from cookware, utensils, chafing dishes, and serving ware.
- Use food grade paper to soak up oil and grease under fryer baskets.
- Use paper towels to wipe down work areas. Cloth towels will accumulate grease that will eventually end up in your drains from towel washing/rinsing.

Spill Prevention

Preventing spills reduces the amounts of waste on food preparation and serving areas that will require clean up. A dry workplace is safer for employees in avoiding slip, trips, and falls. For spill prevention:

- Empty containers before they are full to avoid spills.
- Use a cover to transport interceptor contents to rendering barrel.
- Provide employees with the proper tools (ladles, ample containers, etc.) to transport materials without spilling.

Maintenance

Maintenance is key to avoiding FOG blockages. For whatever method or technology is used to collect, filter and store FOG, ensure that equipment is regularly maintained. All staff should be aware of and trained to perform correct cleaning procedures, particularly for under-sink interceptors that are prone to break down due to improper maintenance. A daily and weekly maintenance schedule is highly recommended.

- Contract with a company to professionally clean large hood filters. Small hoods can be hand-cleaned with spray detergents and wiped down with cloths for cleaning. Hood filters can be effectively cleaned by routinely spraying with hot water with little or no detergents over the mop sink that should be connected to a grease trap. After hot water rinse (separately trapped), filter panels can go into the dishwasher. For hoods to operate properly in the removal of grease-laden vapors, the ventilation system will also need to be balanced with sufficient make-up air.

- Skim/filter fryer grease daily and change oil when necessary. Use a test kit provided by your grocery distributor rather than simply a “guess” to determine when to change oil. This extends the life of both the fryer and the oil. Build-up of carbon deposits on the bottom of the fryer act as an insulator that forces the fryer to heat longer, thus causing the oil to break down sooner.
- Collect fryer oil in an oil rendering tank for disposal or transport the oil to a bulk oil rendering tank instead of discharging it into a grease interceptor or waste drain.
- Cleaning intervals depend upon the type of food establishment involved. Some facilities require monthly or once every two months cleaning. Establishments that operate a large number of fryers or handle a large amount of fried foods such as chicken, along with ethnic food establishments may need at least monthly cleanings. Full-cleaning of grease traps/interceptors (removing all liquids and solids and scraping the walls) is a worthwhile investment. Remember, sugars, starches and other organics accumulate from the bottom up. If sediment is allowed to accumulate in the trap/interceptor, it will need to be pumped more frequently.
- Develop a rotation system if multiple fryers are in use. Designate a single fryer for products that are particularly high in deposits, and change that one more often.

Oil & Grease Collection/Recycling & Food Donations

FOG are commodities that if handled properly can be treated as a valuable resource.

- Begin thinking of oil and grease as a valuable commodity. Some rendering companies will offer services free-of-charge and others will give a rebate on the materials collected. Note that these companies must be properly permitted.
- Use rendering barrels with covers for onsite collection of oil and grease other than from fryers. Educate kitchen staff on the importance of keeping outside barrels covered at all times. During storms, uncovered or partially covered barrels allow storm water to enter the barrel resulting in oil running onto the ground and possibly into storm drains, and can “contaminate” an otherwise useful by-product.
- Use a 3-compartment sink for ware washing. Begin with a hot pre-wash, then a scouring sink with detergent, then a rise sink.
- Make sure all drain screens are installed.
- Prior to washing and rinsing use a hot water ONLY (no detergent) pre-rinse that is separately trapped to remove non-emulsified oils and greases from ware washing. Wash and rinse steps should also be trapped.
- Empty grill top scrap baskets or scrap boxes and hoods into the rendering barrel.
- Easy does it! Instruct staff to be conservative about their use of fats, oils and grease in food preparation and serving.
- Ensure that edible food is not flushed down your drains. Put into the trash or compost.

Grease Traps/Interceptors

- For grease traps/interceptors to be effective, the units must be properly sized, constructed, and installed in a location to provide an adequate retention time for settling and accumulation of the FOG. If the units are too close to the FOG discharge and do not have enough volume to allow amassing of the FOG, the emulsified oils will pass through the unit without being captured.
- Ensure all grease-bearing drains discharge to the grease trap/interceptor. These include mop sinks, woks, wash sinks, prep sinks, utility sinks, pulpers, dishwashers, prerinse sinks, can washes, and floor drains in food preparation areas such as those near a fryer or tilt/steam kettle. No toilet wastes should be plumbed to the grease trap/interceptor.

Consumer Tip

<u>Buyer beware</u>! When choosing a method of managing your oil and grease, ensure that it does what the vendor says it will do. Some technologies or “miracle cures” don’t eliminate the problem but result in grease accumulations further down the sewer line. “Out of sight” is not “out of mind.” Check the vendor’s references.

APPENDIX G FOG Educational/Outreach Brochures

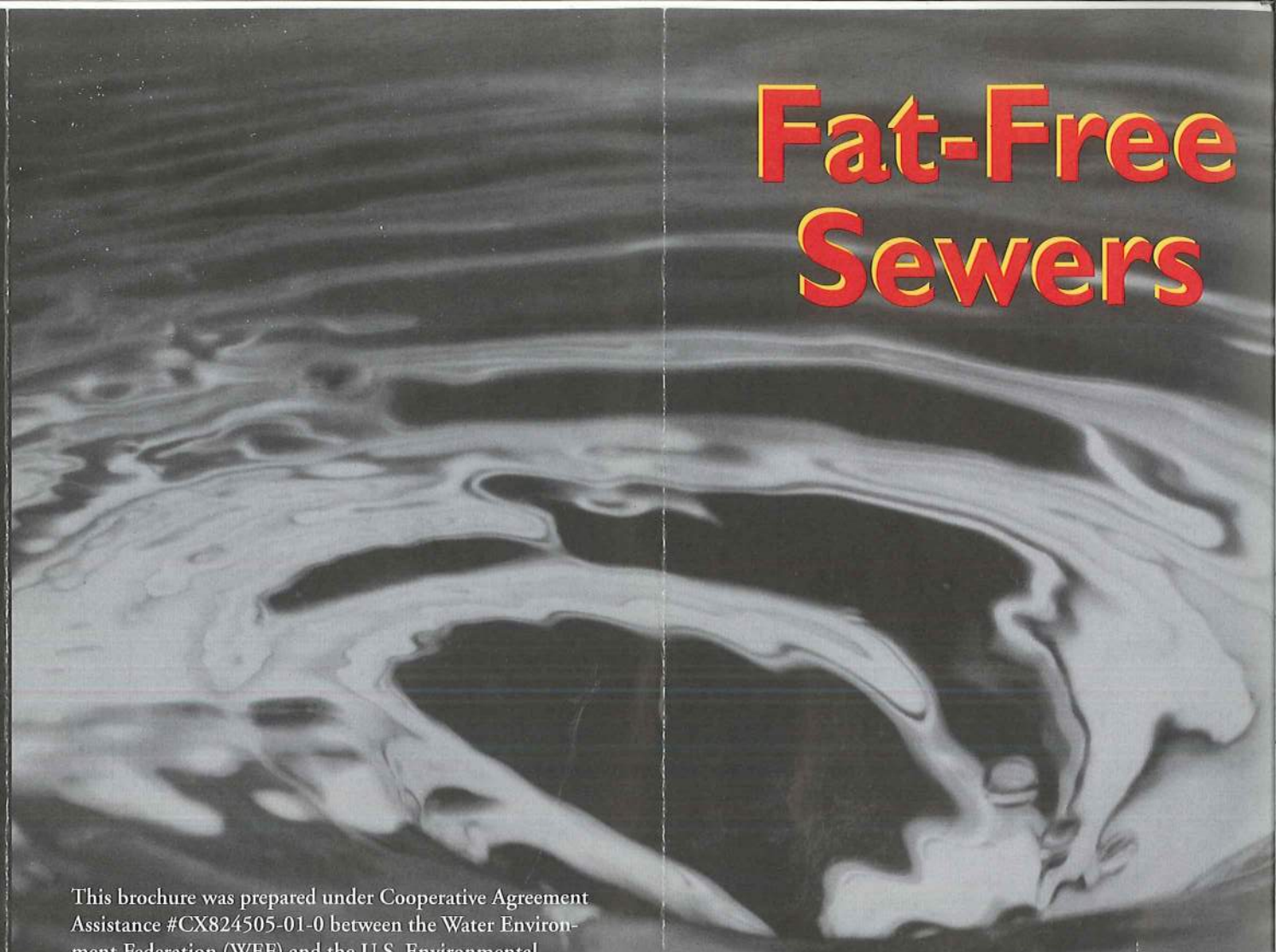
What Restaurant and Building Owners Need to Know About Grease Traps or Interceptors

Restaurants, large buildings, such as apartment complexes; and other commercial establishments may have grease traps or interceptors that keep grease out of the sewer system. For a grease trap or interceptor to work correctly, it must be properly

1. **Designed (sized and manufactured to handle the amount that is expected),**
2. **Installed (level, vented, etc.), and**
3. **Maintained (cleaned and serviced on a frequent basis).**

Solids should never be put into grease traps or interceptors. Routine, often daily, maintenance of grease traps and interceptors is needed to ensure that they properly reduce or prevent blockages.

Be cautious of chemicals and additives (including soaps and detergents) that claim to dissolve grease. Some of these additives simply pass grease down pipes where it can clog the sewer lines in another area.



This brochure was prepared under Cooperative Agreement Assistance #CX824505-01-0 between the Water Environment Federation (WEF) and the U.S. Environmental Protection Agency. For more information, contact your local sewer system authority or the

Water Environment Federation
601 Wythe Street
Alexandria, VA 22314-1004
Phone: 703/684-2400
Fax: 703/684-2492
Web site: http://www.wef.org

For additional copies of this brochure, contact WEF at 1-800-666-0206, 1-703-684-2452 or http://www.wef.org

Water Environment Federation®

Fat-Free Sewers

How to Prevent Fats, Oils, and Greases from Damaging Your Home and

Fats, Oils, and Greases aren't just bad for your arteries and your waistline; they're bad for sewers, too.

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. An increasingly common cause of overflows is sewer pipes blocked by grease. Grease gets into the sewer from household drains as well as from poorly maintained grease traps in restaurants and other businesses.

Where does the grease come from?

Most of us know grease as the byproduct of cooking. Grease is found in such things as:

- Meat fats
- Lard
- Cooking oil
- Shortening
- Butter and margarine
- Food scraps
- Baking goods
- Sauces
- Dairy products

Too often, grease is washed into the plumbing system, usually through the kitchen sink. Grease sticks to the insides of sewer pipes (both on your property and in the streets). Over time, the grease can build up and block the entire pipe.

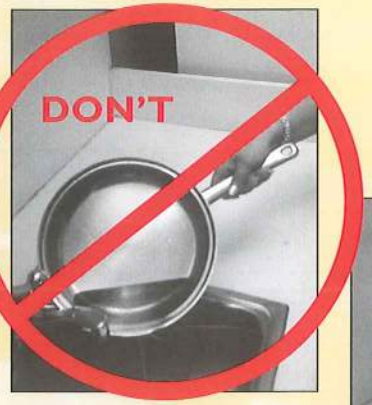
Home garbage disposals do not keep grease out of the plumbing system. These units only shred solid material into smaller pieces and do not prevent grease from going down the drain.

Commercial additives, including detergents, that claim to dissolve grease may pass grease down the line and cause problems in other areas.

© James L. Graham, Jr. P.E.

The results can be:

- Raw sewage overflowing in your home or your neighbor's home;
- An expensive and unpleasant cleanup that often must be paid for by **you, the homeowner;**
- Raw sewage overflowing into parks, yards, and streets;
- Potential contact with disease-causing organisms; and
- An increase in operation and maintenance costs for local sewer departments, which causes higher sewer bills for customers.



© NYCDEP

What we can do to help

The easiest way to solve the grease problem and help prevent overflows of raw sewage is to keep this material out of the sewer system in the first place.

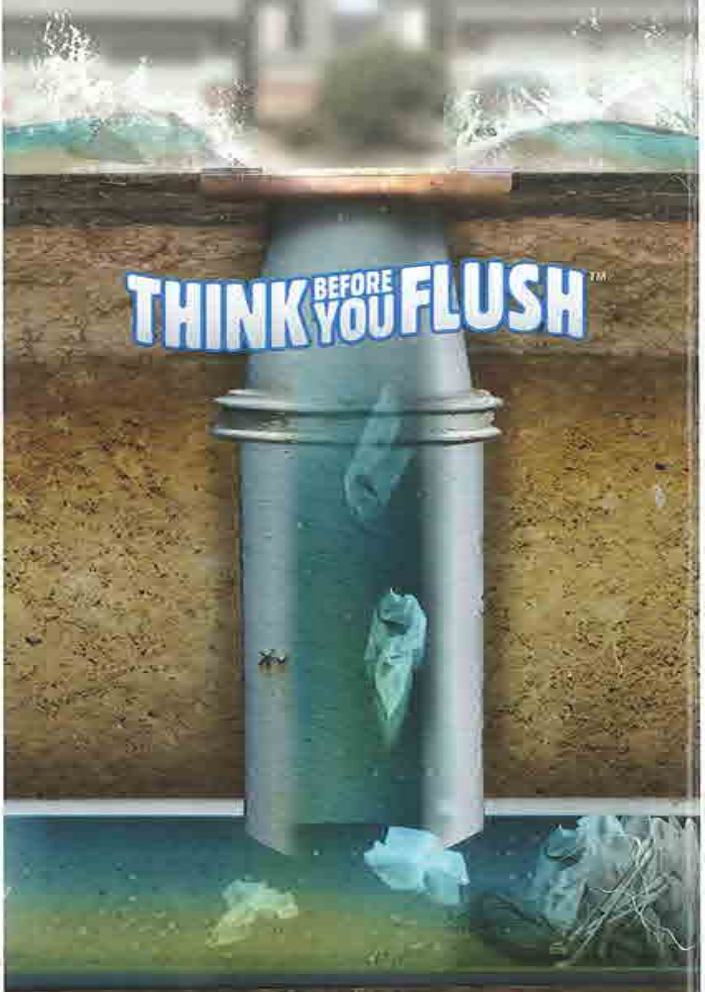
There are several ways to do this.

1) Never pour grease down sink drains or into toilets.
2) Scrape grease and food scraps from trays, plates, pots, pans, utensils, and grills and cooking surfaces into a can or the trash for disposal (or recycling where available).
3) Do not put grease down garbage disposals. Put baskets/strainers in sink drains to catch food scraps and other solids, and empty the drain baskets/strainers into the trash for disposal.
4) Speak with your friends and neighbors about the problem of grease in the sewer system and how to keep it out. Call your local sewer system

"Flushable" does not mean "flushable".

Flushable wipes are clogging sewer pipes!

Flushable wipes do not dissolve in the sewer system. Even if you just flush one, eventually wipes will collect in sewer pipes, pumps and equipment causing clogs and blockages.



Clogs and blockages in sewer pipes lead to sewage spills and overflows. Help us avoid sewage spills and overflows and protect our local environment.

Central Marin Sanitation Agency
1301 Andersen Drive, San Rafael, CA 94901
415-459-1455 cmsa.us

Las Gallinas Valley Sanitary District
300 Smith Ranch Road, San Rafael, CA 94903
415-472-1734 lgvsd.org

Novato Sanitary District,
500 Davidson Street, Novato, CA 94945
415-892-1694 novatosan.com

Sanitary District No.5 of Marin County

Sanitary District No.5 of Marin County
Tiburon and Belvedere, 2001 Paradise Drive
Tiburon, CA 94920
415-435-1501 sani5.org

Sausalito-Marin City Sanitary District
1 Fort Baker Road, Sausalito, CA 94965
415-332-0244 sausalitomarincitysanitarydistrict.com

SASM
SEWERAGE AGENCY OF SOUTHERN MARIN

Sewerage Agency of Southern Marin
450 Sycamore Ave., Mill Valley, CA 94941
415-388-2402 cityofmillvalley.org

WIPES CLOG PIPES

FLUSH ONLY TOILET PAPER

Protect Your Family, Community and Waterways from Sewer Backups and Overflows

Wipes clog pipes. Flush ONLY toilet paper.

An overflowing toilet can ruin your home in an instant!

Wipes do not dissolve like toilet paper. Just one wipe flushed down a toilet can collect with other wipes and materials that should not be flushed, contributing to expensive and messy sewer backups in your home or neighborhood. Do your part and put all wipes in the trash. Think Before You Flush!

Baby wipes

Cleaning wipes

Facial wipes

Flushable wipes

CLOG

APPENDIX H SSMP Audit Report

Novato Sanitary District

Sewer System Management Plan (SSMP) – 2024 AUDIT

January 2025

NOVATO SANITARY DISTRICT

2024 SSMP AUDIT

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Appendix A: December 2022, December 2023, and August 2024 District Board of Directors Wastewater Operations Committee reports (Collection System related portions only)

Appendix B: Self-Monitoring Report (October 2023 to September 2024)

List of Abbreviations

CCTV	Closed-Circuit Television Inspection
CIP	Capital Improvement Program
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
CSMP	Collection System Master Plan
CY	Calendar Year
FOG	Fats, Oil and Grease
FSE	Food Service Establishment
FY	Fiscal Year
GWDR	General Waste Discharge Requirement (Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems, Order No. 2022-0103-DWQ)
LRO	Legally Responsible Official
NSD, District	Novato Sanitary District
O&M	Operation & Maintenance
SERP	Spill Emergency Response Plan
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow (Spill)
SWRCB	State Water Resources Control Board

1. Introduction

The purpose of the Sewer System Management Plan (SSMP) Audit is to evaluate the effectiveness of the Novato Sanitary District's (NSD or District) SSMP and to identify deficiencies, if any, and steps to correct them. The audit is prepared pursuant to the requirements included in the State Water Resources Control Board (SWRCB) Order No. 2022-0103-DWQ, Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems (also referred to as the General Waste Discharge Requirements, or GWDR).

2. Regulatory Requirements for SSMP Audits

The SWRCB's SSMP requirements require that the District conduct an internal audit of its SSMP at a minimum frequency of every three years, and that an audit report be prepared and submitted by the District's Legally Responsible Official (LRO) to the online CIWQS sanitary sewer database within six months after the end of the audit period. The audit should be appropriate to the size of the District's system and the number of sanitary sewer spills, and must involve the District's sewer system operators. This audit shall focus on evaluating the implementation and effectiveness of the SSMP and the District's compliance with the GWDR requirements, including identification of any deficiencies in the SSMP and steps to correct them.

Note that the 2022 GWDR replaced the previous Order issued in 2006, which required SSMP audits on a two-year (biennial) basis.

3. 2024 SSMP Audit

The District's previous SSMP audit was completed in July 2022 and covered the calendar years 2020 and 2021. Per the audit schedule set forth in the 2022 GWDR, the District's current SSMP audit should cover the 3-year period from August 2, 2021, through August 1, 2024. Since the previous audit covered the period through the end of calendar year 2021, this 2024 SSMP audit covers CYs 2022 and 2023, and CY 2024 through August 1, 2024. However, spill statistics are provided for the full 3-year period August 2, 2021 through August 1, 2024.

The goal of the District's SSMP audit is to determine whether the SSMP complies with requirements of the current GWDR, whether the SSMP reflects current practices, and whether the SSMP is effective in controlling spills (previously referred to as sanitary sewer overflows, or SSOs).

Program effectiveness is evaluated by a review of performance indicators and discussion of SSMP and sewer system improvements. A Pre-Audit Checklist is also used as part of this evaluation to provide initial responses to audit questions, followed by interviews with District staff involved in SSMP implementation. The SSMP audit was led by the District's Deputy General Manager and facilitated by a third-party consultant, Woodard & Curran. The Pre-Audit Checklist was first completed on a preliminary basis by District staff, followed by two sets of interviews: the first with key District operations staff (Collection Systems Superintendent and Leadworker) and the second with the District's Capital Program Manager and staff engineer responsible for GIS and data management. The District's Deputy General Manager (an LRO for the District) and consultant attended both interviews and were responsible for preparation of this audit report.

4. SSMP Effectiveness

4.1 Performance

Performance indicators, collected as part of SSMP Element 9 (Monitoring, Measurement and Program Modifications) are reviewed to identify patterns and areas needing improvement. A description of the performance over the past three years is included below.

Program Effectiveness

A history of spills is shown in **Table 1**, with history of spill volume shown in **Table 2**. Spills by cause are shown in **Table 3** for CY 2020 through August 1, 2024. **Table 4**, **Table 5**, and **Table 6**, respectively, compare the District's number of spills and spill volume against State and regional averages for CYs 2022 and 2023 and for the entire audit period August 2, 2021, through August 1, 2024.

As shown in Table 1, the total number of spills has remained relatively stable. The primary causes of spills in the NSD system are blockages due to roots or debris. The overall number of spills was below regional and State averages in all years.

A portion (14 percent overall) of the volume of spills reached surface waters during the 3-year audit period August 2, 2021, through August 1, 2024. About 24 percent of spill volume was recovered. However, total spill volumes were well below regional and State averages in all years.

Response time is defined as the elapsed time between when NSD is notified about a spill and when a NSD employee or representative arrives at the spill location to assess and start to establish controls. The average response time for spills during the audit period was 23 minutes.

The data indicates that the implementation of the SSMP is largely effective at controlling spills. There was only one spill due to grease during the audit period, which demonstrates the effectiveness of the District's Fats, Oil and Grease (FOG) control program.

Productivity Comparisons

Productivity comparisons since the implementation of the SSMP in 2008 are tracked annually. NSD utilizes total feet cleaned and the rate of cleaning as indicators for productivity. The data is presented graphically in **Figure 1** and **Figure 2**. Since the inception of the program, there have been significant productivity gains and an increase in overall effectiveness. The past several years show that those gains are leveling out but remain at a high level. The data in Figure 1 shows that the District is significantly exceeding its target of cleaning all sewers in the system at least once every 4 years.

CCTV inspection productivity has varied on a year-to-year basis but has generally been increasing each year since 2016, although it dropped off somewhat in 2023. Over the 3-year calendar year period 2021 through 2023, the District averaged about 216,000 lf of CCTV per year, or about 19 percent of the gravity sewer system. This would put NSD on an approximate 5-year cycle for CCTV inspection, which is its target inspection cycle.

Table 1: Number of Spills - CY2020-CY2023, CY2024 thru 8/1/24

Size of SSO (gallons)	Number				
	2024	**2023**	**2022**	**2021**	**2020**
Greater than or equal to 1,000	2	1	1	1	0
From 100 to 999	2	2	3	3	1
From 1 to 99 (50 to 99 after 6/5/23)		2	2	1	0
Total	**4**	**5**	**6**	**5**	**1**

Table 2: Volume of Spills - CY2020-CY2023, CY2024 thru 8/1/24

	Volume (gallons)				
	2024	**2023**	**2022**	**2021**	**2020**
Total volume contained and returned to sewer system for treatment	1,466	65	8,812	648	160
Total volume reaching waters of the State	1,400	3,418	248	1,590	0
Total volume not contained but not reaching waters of State (everything else)	694	26,107	775	10	220
Total	**3,560**	**29,590**	**9,835**	**2,248**	**380**

Note: Category 4 spills (<50 gallons, not reaching surface waters) after June 5, 2023, not included in these tables.

Table 3: Causes of Spills - CY2020-CY2023, CY2024 thru 8/1/24

Spill Cause	Number				
	2024	**2023**	**2022**	**2021**	**2020**
Blockage:					
Roots	1	3	3	3	
Grease			1		1
Debris	1		1	1	
Debris from Laterals					
Pipe failure					
Vandalism		1			
Multiple Causes	1				
Subtotal for Blockage	**3**	**4**	**5**	**4**	**1**
Infrastructure Failure					
Cleaning/Maintenance Operations				1	
Contractor Error			1		
By-Pass Pump/Pump Station Failure					
Flow Capacity Deficiency	1	1			
Natural Disaster					
Excessive I&I					
Operator Error					
Construction damage					
Cause Unknown					
Total	**4**	**5**	**6**	**5**	**1**

Note: Category 4 spills (<50 gallons, not reaching surface waters) after June 5, 2023, not included in this table.

Table 4: 2022 NSD, State, and Regional Mainline Spills and Spill Volumes

Area	# of Spills/100 mi/year			Net Volume in gal/1,000 capita/year		
	Category			Category		
	1	2	3	1	2	3
Novato SD	0.85	0.42	1.27	9.36	8.95	0
State	2.84	2.6	4.87	1,468	256	59.1
Region	4.76	1.9	7.16	3,295	175	15.8

Source: CIWQS Operational Report for Novato Sanitary District (01/01/2022-12/31/2022)

Table 5: 2023 NSD, State, and Regional Mainline Spills and Spill Volumes

Area	# of Spills/100 mi/year			Net Volume in gal/1,000 capita/year		
	Category			Category		
	1	2	3	1	2	3
Novato SD	1.27	0	0.85	525	0	3.35
State	3.22	2.49	3.95	51,878	474	249
Region	5.15	1.79	3.73	6,315	375	877

Source: CIWQS Operational Report for Novato Sanitary District (01/01/2023-12/31/2023)

Table 6: Audit Period NSD, State, and Regional Mainline Spills and Spill Volumes

Area	# of Spills/100 mi/year			Net Volume in gal/1,000 capita/year		
	Category			Category		
	1	2	3	1	2	3
Novato SD	0.99	0.14	1.13	195	2.98	7.55
State	0.79	0.33	1.63	4,608	74.3	57.1
Region	2.25	0.5	3.23	2,448	144	189

Source: CIWQS Operational Report for Novato Sanitary District (08/02/2021-08/01/2024)

Figure 1: Length of Sewer Cleaned

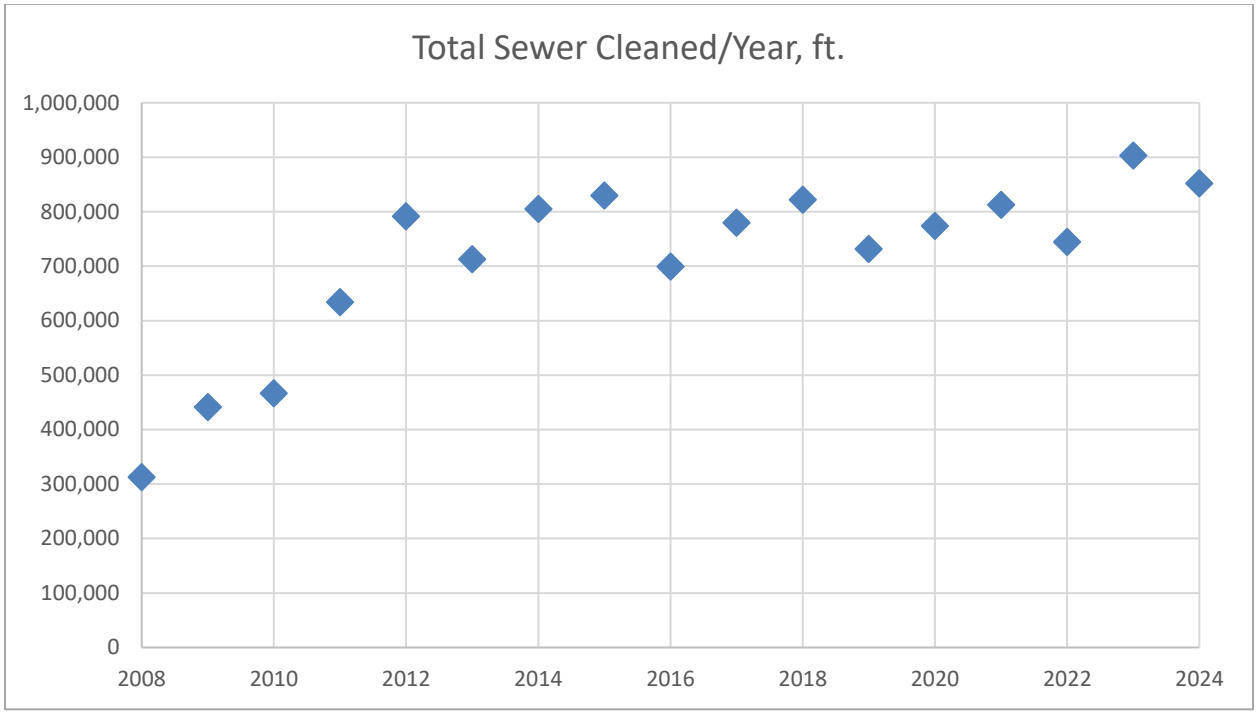
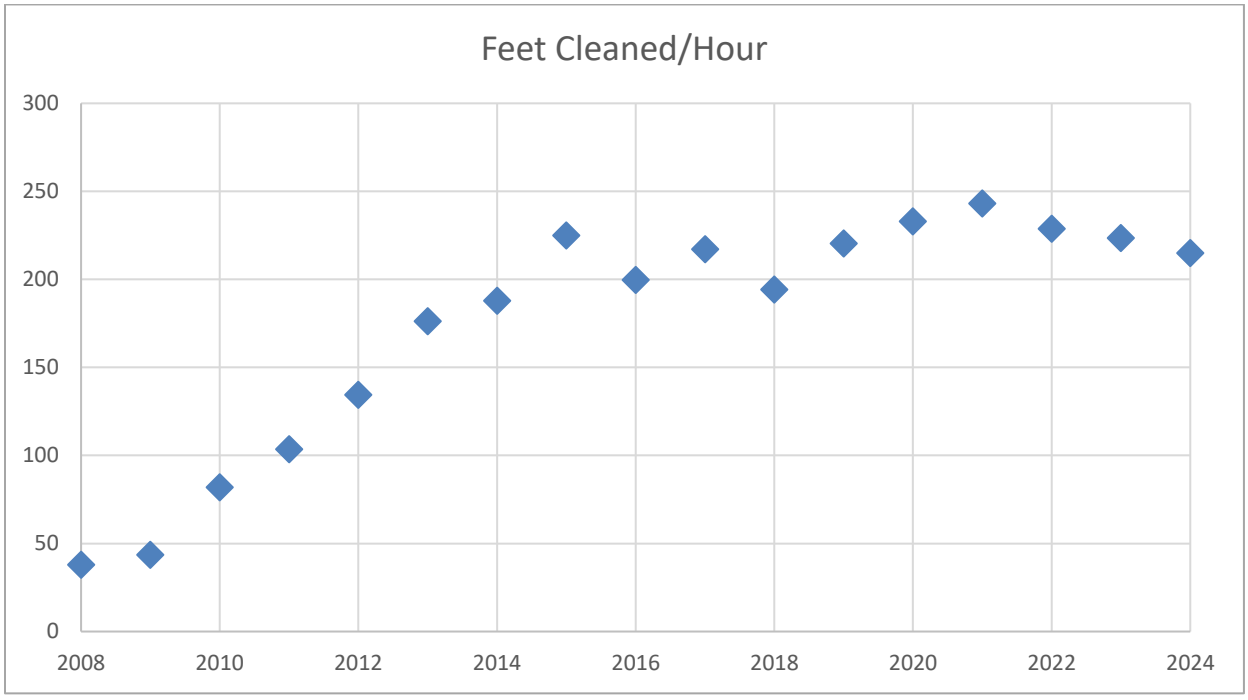


Figure 2: Rate of Sewer Cleaning



SSMP Effectiveness Reporting

Staff reports the Collection Systems department's performance to the District Board of Directors monthly at a regularly scheduled Board meeting, typically the 2nd Monday of the month.

Copies of the monthly reports for December 2022, December 2023, and August 2024 are provided in **Appendix A** for sample purposes. As can be seen from these reports, they also provide tracking information on a monthly basis for performance indicators and metrics for the entire year, as well as comparative information for these parameters against the prior year. In addition to sewer main maintenance, the reports also provide information relating to sewer pump station operations and maintenance and include similar performance indicators and metrics, and present similar effectiveness tracking.

4.2 Program and System Improvements

The District completed a comprehensive update of its Collection System Master Plan (CSMP) in 2019. The CSMP identified several sewer improvement projects needed to address potential capacity deficiencies in the system under peak wet weather flows. Following completion of the CSMP, the District prepared a detailed plan to guide implementation of the capacity improvement projects, as well as high priority sewer rehabilitation/replacement projects, over the next 20 years. The District also conducted additional flow monitoring and project validation to confirm the need for the most critical projects identified in the CSMP and refine project recommendations. The recommended capacity improvement projects identified in the CSMP have been incorporated into the District's Capital Improvement Program (CIP).

The District has a well-funded CIP that addresses identified capacity and condition related improvements to its collection system, a summary of which is available through the District's Annual Budget document on its website. As shown in **Table 7**, since FY2022 the District has completed $5.6 million in collection system and pump station improvement and repair projects and another $5.3 million are currently in the design or construction phase. These projects range from small spot repairs to major sewer main replacements.

Table 7: Collection System Capital Projects, FY22 - FY25

Year/ Status	Project Name	Project Description	Linear Feet	Construction Cost
FY2022				
Complete	Vineyard Creek Bank Stabilization	Stabilization of approx. 100 feet of streambank to protect the sewer main adjacent to Vineyard Creek	N/A	$214,740
Complete	Bel Marin Keys Sewer Rehab Part 2	Replacement of approx. 300 feet of 10" sewer main	300	$275,647
Complete	Annual Collection System Repairs (Spot Repairs)	1 Repair Contract to pipe burst 232 feet of 6-inch sewer main	232	$49,397
Complete	Annual Pump Station Repairs	4 Repair Contracts to perform electrical and mechanical repairs at various pump stations	N/A	$42,088
FY2023				
Complete	Del Mar Sewer Improvements	Replacement of approx. 1,400 feet of 8" VCP with 10" PVC and approx. 600 feet of new pipe for alignment change	2,000	$1,297,039
Complete	Annual Collection System Repairs (Spot Repairs)	3 Repair Contracts for various locations in the collection system	N/A	$91,752
FY2024				
Complete	Center Road Sewer Project	Installation of approx. 2,235 lineal feet of new 18-inch PVC sewer in Center Road from Western Drive to St. Francis Avenue	2,235	$1,933,292
Complete	James Black Circle Sewer Repair Project	Replacement of approx. 135 feet of 6-inch sewer main	135	$191,795
Complete	Annual Collection System Repairs (Spot Repairs)	1 Repair Contract for various locations in the collection system	N/A	$8,124
Complete	Annual Pump Station Repairs	5 Repair Contracts to perform electrical and mechanical repairs at various pump stations	N/A	$108,711

FY2025				
Complete	Rowland Plaza Pump Station Rehabilitation	Project to replace the existing Gorman Rupp style wet-well/dry-well underground type pump station with a new submersible pump-type station and add a new standby generator	N/A	$1,359,445
Construction	Marin Village Pump Station	Project to replace the existing wet-well/dry-pit underground type pump station with a new submersible pump-type station and replace the standby diesel generator	N/A	$3,086,943
Construction	Arthur Street Sewer Improvements	Replacement of approximately 1,200 feet of sewer main in Arthur Street with new 15-inch PVC pipe	1,200	$1,130,815
Design	Olive Pump Station	Project to replace the existing natural gas standby generator with a new diesel standby generator and upgrade electrical switchgear and related electrical equipment	N/A	$248,919
Design	Ignacio Pump Station Electrical Upgrades	Project to replace the existing standby generator with a new diesel standby generator and upgrade electrical switchgear and related electrical equipment	N/A	$98,542
Design	Force Mains Condition Assessment	Project includes performing condition assessments on the District's sewer force mains and prioritization of repairs/replacement based on the results of the assessments	N/A	$69,395
Design	Novato Blvd. Trunk Sewer Improvements	Installation of new parallel trunk sewer in Novato Blvd. from Grant Avenue to Diablo Avenue	3,160	$216,866
Design	Highway 101 Crossings	Replacement of two gravity sewer crossings under HWY 101 and abandonment of the Enfrente Pump Station to convert to gravity flow via an underground crossing to the east side of 101	1,125	$442,835
Design	Main Interceptor 2 Repair at Novato Creek	Replacement of manhole and rerouting of associated piping at the main interceptor siphon crossing Novato Creek, including slip-lining of approx. 884 feet of 36-inch sewer main	884	$50,021
	Total Completed			**$5,572,030**
	Total in Construction or Design			**$5,344,336**
	Total			**$10,916,366**

5. SSMP Compliance

The District's SSMP was last updated in July 2022; therefore not all requirements of the new GWDR may be reflected in that document. The District will complete an update of the SSMP by August 2025 for compliance with the new GWDR schedule.

A summary of key findings of the audit, organized by SSMP element, is presented below, indicating any deficiencies identified and modifications or corrective actions planned.

Element 1 - SSMP Goal and Introduction

Per the 2022 GWDR, in addition to stating the goal of the SSMP, this element should provide an overview of the regulatory context, including schedule for updates and audits, and also provide a description of system assets and reference to the sewer system map. NSD's SSMP goal is clearly stated in its SSMP. NSD plans to update this SSMP element in accordance with the schedule set forth in the GWDR, which requires that the SSMP be updated and certified by August 2025. NSD will include the additional discussion and information as required for this element in the updated SSMP, including service area and asset data and links, as needed, to service area and sewer system maps. Much of the information required for Element 1 is already contained in the District's Annual Report.

Element 2 – Organization

The Organization element of the SSMP must identify and provide contact information for the staff responsible for SSMP implementation, including the Legally Responsible Official (LRO), lines of authority, and chain of communications for reporting spills. NSD's SSMP identifies the District's LROs and positions and responsibilities of management and staff responsible for implementation of the SSMP, and includes an organization chart and chain of communications for reporting spills. Specific names and contact information are included in an appendix. Some descriptions of positions and responsibilities have changed and may need to be updated. Updates will be incorporated in the next SSMP update. Contact names and contact information will be kept up-to-date on an ongoing basis as needed.

Element 3 – Legal Authority

The Legal Authority element must demonstrate the District's ordinances and other legal agreements provide the authority to:

- Prevent illicit discharges to the sewer system;
- Collaborate with the storm sewer authorities on spill response;
- Require that facilities are properly designed and constructed;
- Ensure access for maintenance, inspection, and repair for sewer laterals owned or operated by the District (note: the District does not have responsibility for private sewer laterals);
- Enforce violations of ordinances or service agreements; and
- Obtain easement accessibility agreements as needed.

NSD's SSMP provides a link to its ordinance and describes its legal authorities that meet the SSMP requirements, other than the new requirement in the 2022 GWDR to describe agreements and/or procedures for collaboration with storm sewer agencies to coordinate emergency spill response and prevent unintentional cross connections between sanitary and storm sewer infrastructure. NSD

will update this element of the SSMP to describe its coordination procedures with the City of Novato, which manages the storm sewer system within the District's service area (also see discussions under Elements 4 and 6).

Element 4 – Operation and Maintenance Program

The Operation and Maintenance (O&M) Program element requires the following items:

- Sewer system map, including applicable stormwater facilities;
- Preventive O&M activities, including higher frequency inspection and maintenance of known problem areas and regularly visual and CCTV inspection of manholes and pipes;
- Training on GWDR and Spill Emergency Response Plan (SERP) requirements;
- Equipment inventory.

NSD's SSMP meets the overall requirements of this element.

The District maintains sewer system maps in both AutoCAD and GIS format, and a PDF mapbook based on both systems is available to staff. The AutoCAD maps have more detail (e.g., show storm drains) but the GIS maps are the primary inventory database linked to the District's Computerized Maintenance Management System (CMMS). Updates may be made to either set (e.g., construction as-built updates are usually made first in AutoCAD, whereas changes identified through CCTV inspection may be made first in GIS), but there is an informal process in place to coordinate those updates.

The District's target schedule for cleaning of gravity mains is 4 years, but in practice, most are cleaned on a 3-year schedule (in addition to those sewers known to be prone to roots, grease, or debris that are identified for more frequent cleaning), other than large diameter lines that are cleaned by contract (generally every 5 to 7 years). Most siphons are cleaned every 3 months, and all pump stations are on a regular preventive maintenance schedule. The amount of gravity sewer CCTV inspection may vary from year-to-year but is currently on a 5-year target schedule. Although there is no formal manhole inspection program, manhole conditions are visually evaluated during sewer cleaning and inspection activities and any issues are recorded on forms for follow-up action. Pump stations are inspected frequently during regular preventive maintenance activities, managed through a separate work order system than the gravity sewer system. The District is in the process of selecting and implementing a new CMMS to better track and schedule preventive maintenance and inspection activities.

The District is developing a plan for condition assessment of its force mains based on a risk assessment approach; and a 5-year program for inspection of high priority force mains will be included in its CIP.

The District conducts annual SERP training, which includes overview of WDR and SSMP requirements, as well as SERP-specific activities including volume estimation. The equipment inventory is kept up-to-date, and its mutual aid equipment list has recently been updated.

Element 5 – Design and Performance Provisions

This SSMP element addresses the need for design criteria and standards for construction, repair, testing, and inspection of new or rehabilitated sewer system facilities. The 2022 WDR also notes that standards must address component-specific design criteria specified under Element 8 for

capacity assurance. NSD's SSMP references the District's standards for design and construction of sanitary sewer facilities and for inspection and testing of new and rehabilitated facilities. The District is currently in the process reviewing and updating the standard specifications, and will review the standards to make sure they are in compliance with the SSMP provisions.

Element 6 – Spill Emergency Response Plan (SERP)

The SERP (previously called the Overflow Emergency Response Plan) requirements of the SSMP address notification, reporting, response, and mitigation of the impacts of potential sanitary sewer spills, including post-spill assessments and effectiveness review and training in SERP procedures. NSD completed an updated SERP on July 7, 2023, as required to comply with the 2022 GWDR, and complies with all requirements for spill notification, response, and reporting, as well as post-spill assessments. To minimize potential wet weather spills, the District has an annual program of activities to prepare for wet weather, including servicing generators, cleaning certain lines, making sure plugs/diversions are in place, and checking call boxes. Creek crossings are inspected each year. The District has also installed seven "SmartCovers" throughout the system to provide early warning of flow level conditions in locations known to be at risk for potential spills.

The District's Self-Monitoring Program reports document each spill in detail, including notification and response actions and timeline, spill volume calculations, and follow-up actions. An example report covering the most recent year period is included in **Appendix B**.

NSD plans to work with the City of Novato to improve and document pre-planning for coordination and collaboration for spill response, including providing access to more up-to-date and complete mapping of the storm drain system in order to facilitate spill response.

Element 7 – Blockage Control Program

SSMP Element 7 requires that the agency evaluate its service area to determine if a sewer pipe blockage control program is needed to control fats, oils and grease (FOG) or other pipe-blocking materials such as debris or rags, or provide justification if not needed. As indicated in Table 3, NSD has experienced only two spills in the past 5 years attributable to grease and only three spills attributable to debris. The District believes that its existing ordinances, public outreach materials, and close coordination with Marin County and City of Novato regarding permitting, installation and inspection of grease traps and interceptors for food service establishments (FSEs), as well as its preventive maintenance schedule for known grease hotspots, have been effective in controlling FOG in the District's sewer system. Furthermore, the District's sewer cleaning program (refer to Element 4) has been effective in minimizing blockages due to debris or other materials.

Element 8 – System Evaluation, Capacity Assurance and Capital improvements

The requirements under SSMP Element 8 have been expanded under the 2022 WDR to include not only evaluation of system capacity but also condition assessment of the system, including implementing a risk-based approach for identifying and prioritizing needed improvements, and developing a Capital Improvement Plan (CIP) that includes schedules and funding sources. The development of the CIP must include coordination between O&M and engineering staff, as well as interagency coordination with other utility agencies. Element 8 also specifically calls out the need to assess and consider the potential impacts of climate change on system facilities.

NSD's 2019 CSMP included a hydraulic evaluation of the system that addressed capacity requirements to handle peak wet weather flows due to infiltration/inflow (I/I) and capacity for future growth. The CSMP identified the required capacity of the system to convey both dry weather flows and wet weather flows that would be predicted under the District's adopted 10-year return period design storm. The CSMP also included a gravity sewer condition assessment based on CCTV data and a risk-based prioritization approach (incorporating both likelihood and consequence of failure) for identifying needed sewer repair, renewal and replacement. While the District does not have a formal I/I reduction program, I/I was included as a factor, in addition to structural and maintenance condition, for calculating likelihood of failure and overall risk. And recognizing that sewer laterals are likely a significant contributor to I/I, the District has a lateral grant program to help property owners fund improvements to their private sewer laterals. The District is also prioritizing repair/replacement of sewers with significant defects located near creeks, as required under its settlement agreement with Northern California Riverwatch.

As discussed in the previous section on Program and System Improvements, the District has developed a 10-year CIP implementation plan that incorporates the findings and recommendations of the CSMP, follow-up project validation efforts, and improvement needs identified through ongoing maintenance activities and input from operations staff. The implementation plan is updated as needed based on ongoing CCTV inspection, flow monitoring to confirm hydraulic capacity requirements, and any other issues identified through O&M activities. The District is also initiating a project to evaluate new alignments for its most critical Ignacio Transfer Pump Station force main, which conveys flow from a very large portion of the District's service area. As noted previously, the District has developed a risk-based ranking of its sewer force mains in order to identify the top ten for inspection under a 5-year inspection plan that will be incorporated into the CIP. The District also attends standing meetings with the City of Novato and other area utilities to coordinate construction projects.

The improvement projects identified through the above activities are incorporated into the District's 5-year CIP, which is funded through sewer use charges.

Although the District's capacity assurance, condition assessment, and sewer rehabilitation programs meet the overall requirements of this SSMP element, the 2022 GWDR includes additional requirements related to ensuring system resilience and adaptability to changing future conditions. Specifically, the capacity assessment must consider the potential impact of larger and/or higher intensity storm events resulting from climate change, and the need to provide redundancy in pumping and storage capacities. In future updates of its CSMP, the District plans to address these issues as more accurate climatological data and predictions become available, and incorporate the findings into an adaptive management approach to planning and implementing system capacity and condition improvements.

Element 9 – Monitoring, Measurement and Program Modifications

As shown in its Collection System Operations reports (see Appendix A), the District tracks key performance indicators related to operation, maintenance, and management of the sewer system, including sewer cleaning, inspection, and pump station maintenance (work orders generated and completed, staff productivity, etc.), service calls (both SSOs and non-SSO) and response times (during and after hours), as well as other benchmarks (e.g., total stoppages, callouts, and overflow volume per 100 miles). An Excel file is maintained with this data going back to 2007, including

graphs that show annual trends as well as graphs of cleaning, inspection, and stoppages on a monthly basis for each year compared to the previous year. This information is used to evaluate the effectiveness of the sewer program and identify modifications that may be needed to improve performance or address deficiencies, such as changes to cleaning schedules, more frequent inspection, coordination with or oversight of contractors doing work in the system, or needed repairs and capital improvements. Maintaining and regular monthly reporting of this type of information allows the District to quickly identify any spill trends or other issues in the system and update its O&M and capital programs as needed based on performance. In addition, the O&M group holds weekly meetings so that staff can report any issues from the field. Based on these discussions, the O&M program may be modified (e.g., (adjustments to cleaning schedules, work orders for repairs issued, etc.) and documented in the monthly Collection System Operations reports.

Element 10 – Internal Audits

The District conducts SSMP audits as required by the GWDR with third-party consultant assistance. As documented in this audit report, the audits evaluate the effectiveness of the SSMP and review compliance with the SSMP requirements. The audit includes interviews and participation by District operations, engineering, and management staff.

Element 11 – Communication Program

The District has a number of vehicles for communication with the public, including its website, social media, and newsletters; and provides regular updates on system operation and performance at Board of Director meetings, which are open to the public. There are three small, privately-operated collection systems that are tributary to NSD. While there is no specific communication program for these systems, communication is consistent with the approach used for the general public.

SSMP Change Log

NSD's SSMP change log was last updated in July 2022 but has not yet been updated to reflect the updated SERP. The District will update the change log as needed when changes are made to the SSMP, including those identified in this audit report.

6. Corrective Actions

Table 8 presents a summary of the corrective actions identified in this SSMP audit and proposed schedule for completion. Most of these involve updates to the SSMP document that will be completed by August 2025.

Table 8: SSMP Audit Corrective Actions

Element	Item	Target Schedule
1 – Goal & Introduction	Update to include discussion of regulatory context, SSMP schedule, and asset overview	Aug. 2025
2 - Organization	Update org chart and position descriptions as needed	Aug. 2025
	Update contact list (Appendix A)	Aug. 2025
	Update chain of communications flow chart to reflect updated spill categories 3&4	Aug. 2025
3 – Legal Authority	Update link to sewer use ordinance	Aug. 2025
	Add discussion about coordination with City	Aug. 2025
4 – O&M Program	Add discussion of force main inspection program	Aug. 2025
	Add link to boundary map	Aug. 2025
	Review need for additional WDR/SSMP training and implement as needed	Aug. 2025
5 – Design & Performance Provisions	Review/update design standards	2026
	Add link to standards in SSMP document	Aug. 2025
6 - SERP	No corrective actions needed	
7 – Blockage Control	No corrective actions needed	
8 – SECAP/CIP	Update to include 5-year CIP (projects and schedule)	Aug. 2025
	Implement force main inspection program	July 2025
	Update capacity evaluation and capacity assurance plan as needed based on updated rainfall statistics (e.g., future NOAA Atlas 15) and climate predictions	2027
9 – Monitoring & Measurement	No corrective actions needed	
10 – Internal Audits	No corrective actions needed	
11 - Communication	No corrective actions needed	
Change Log	Update with recent SSMP changes (e.g., SERP)	Feb. 2025

Appendix A: December 2022, December 2023, and August 2024 District Board of Directors Wastewater Operations Committee Reports (Collection System related portions only)

Novato Sanitary District
Wastewater Operations - Collection System Operations Report
December 2022

1.0 General:

The equivalent of about six (6) full-time employees (FTEs) worked on collection system maintenance activities during the month. The breakdown of staff time for the month in terms of equivalent FTE hours utilized, works out approximately as follows:

- 1.7 FTE field workers for Sewer Maintenance (main line cleaning)
- 1.1 FTE field workers for Pump Station Maintenance
- 0.0 FTE field workers for USAs (line locating)
- 0.2 FTE field workers for Closed Circuit Television (CCTV) work
- 1.1 FTE field workers for time spent on data input, training, service calls, overflow response, or any other activity that does not directly relate to the activities listed above, or special activities (for e.g., smoke testing of mainlines), and
- 1.9 FTE field workers for vacation, holiday, or sick leave.

2.0 Collection System Maintenance:

Performance metrics are presented in the attached graphs showing the length of line cleaned/month, footage cleaned/hour worked, overflows/month, and the CCTV footage achieved. A brief discussion is also provided below.

Line Cleaning Performance:

The sewer system ICOM3 Computerized Maintenance Management System (CMMS) generated 483 work orders for the month. Collections staff completed 325 work orders leaving one hundred fifty-eight (158) work orders outstanding. The outstanding work orders are due to staff being out for vacation, holiday, or sick leave. District staff expect to catch up on the work order backlog over the coming months. The completed work orders resulted in 69,369 feet of sewer pipelines cleaned by staff, and 756 feet were inspected by CCTV equipment in lieu of cleaning.

Closed Circuit Television (CCTV) Performance:

The District's CCTV equipment was in the field for five (5) working days and televised a total of 6,595 feet of sewer main.

CCTV Findings:

- Infrastructure-related: CCTV work did not identify any new sewer defects.
- O&M related: Condition assessment through CCTV work did not identify any area that would require a change in sewer line maintenance operations.

3.0 Pump Station (PS) Maintenance:

A buck down on the lower bank of the reclamation pond.

Collections staff conducted 144 lift station inspections this month. Of these, 38 inspections were generated through the District's JobsCal Plus CMMS system. There are zero outstanding work orders for the month. A Pump Stations' Statistics summary is attached.

4.0 Air Relief/Vacuum Valves (ARVs):

Staff completed maintenance inspections on four (4) air relief/vacuum valves this month.

5.0 Safety and Training:

General:

Collections staff attended three (3) tailgate meetings in December.

Specialized Training:

- Statewide permit, Sanitary Sewer Overflow Waste Discharge Requirements (SSO-WDR) update training.
- Wet weather response training.

Safety performance:

There were zero (0) lost time accidents in December.

The Exciter Rotor and Stator being rehabilitated for the Meadow Park Standby Generator.

6.0 Miscellaneous Projects:

- Vactor truck in for 500-hour service.
- CCTV camera head in for repairs.
- CCTV van in for repairs.
- Meadow Park PS generator-alternator remained off site for rehabilitation.
- Flow monitors installed.

7.0 Sanitary Sewer Overflows (SSOs):

There were zero (0) SSO events in December 2022. The No Spills certification ID is # 2638737

Novato Sanitary District
Wastewater Operations - Collection System Operations Report
December 2023

1.0 General:

The equivalent of about seven (7) full-time employees (FTEs) worked on collection system maintenance activities during the month. The breakdown of staff time for the month in terms of equivalent FTE hours utilized, works out approximately as follows:

- 2.2 FTE field workers for Sewer Maintenance (main line cleaning)
- 1.6 FTE field workers for Pump Station Maintenance
- 1.0 FTE field workers for Closed Circuit Television (CCTV) work
- 1.0 FTE field workers for time spent on data input, training, service calls, overflow response, or any other activity that does not directly relate to the activities listed above, or special activities (for e.g., smoke testing of mainlines), and
- 1.2 FTE field workers for vacation, holiday, or sick leave.

CSW II Eric Andersen removing rags from pump #2 at East Hamilton Pump Station

2.0 Collection System Maintenance:

Performance metrics are presented in the attached graphs showing the length of line cleaned/month, footage cleaned/hour worked, overflows/month, and the CCTV footage achieved. A brief discussion is also provided below.

Line Cleaning Performance:

The sewer system ICOM3 Computerized Maintenance Management System (CMMS) generated 467 work orders for the month. Collections' staff completed 448 work orders leaving nineteen (19) work orders outstanding. District staff anticipate closing out the outstanding work orders over the next 2 months. The completed work orders resulted in 85,584 feet of sewer pipelines being cleaned by staff with 1,702 feet done by CCTV in lieu of line cleaning.

Closed Circuit Television (CCTV) Performance:

The District's CCTV equipment was in the field for eleven (11) working days and televised a total of 21,027 feet of sewer main.

CCTV Findings:

- Infrastructure-related: CCTV work did identify one (1) new sewer defect needing to be added to the "needs-construction" list. The defect was root intrusion into a manhole between S. Redwood Blvd. and Scotia Lane.
- O&M related: Condition assessment through CCTV work did not identify any area that would require a change in sewer line maintenance operations.

3.0 Pump Station (PS) Maintenance:

Collections staff conducted 152 lift station inspections this month. Of these, 38 inspections were generated through the District's JobsCal Plus CMMS system. There are zero (0) outstanding work orders for the month. A Pump Stations' Statistics summary is attached.

4.0 Air Relief/Vacuum Valves (ARVs):

Staff completed maintenance inspections on three (3) air relief/vacuum valves this month.

5.0 Safety and Training:

General:

Collections staff attended four (3) tailgate meetings in December.

Specialized Training:

- Flygt pump training in Stockton.
- Harassment prevention (Vector Solutions)
- LCW training: Maximizing Performance Through Documentation, Evaluation and Corrective Action

Safety performance:

There were zero (0) lost time accidents in December.

New plug and check valves installed at Bahia Main Pump Station.

6.0 Miscellaneous Projects:

- CCTV camera head back from repair.
- Bahia Main PS suction valve replacement project completed.
- BMK 10 pump #2 rebuild complete.
- Screwsucker pump battery replaced.
- Block heater replaced on generator at BMK 5 Pump station.

7.0 Sanitary Sewer Overflows (SSOs):

The Novato Sanitary District Collection System had zero (0) sanitary system overflows (SSO) in December 2023. The no-spills certification confirmation number is: 2660291.

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Novato Sanitary District
Wastewater Operations - Collection System Operations Report
August 2024

1.0 General:

The equivalent of about six (6) full-time employees (FTEs) worked on collection system maintenance activities during the month. The breakdown of staff time for the month in terms of equivalent FTE hours utilized, works out approximately as follows:

- 1.4 FTE for Sewer Maintenance (main line cleaning)
- 1.7 FTE for Pump Station Maintenance
- 0.3 FTE for Closed Circuit Television (CCTV) work
- 0.0 FTE for Underground Service Alerts (USA's)
- 1.4 FTE for time spent on data input, training, service calls, overflow response, or any other activity that does not directly relate to the activities listed above, or special activities (for e.g., smoke testing of mainlines), and
- 1.4 FTE for vacation, holiday, or sick leave.

Root ball pulled from a siphon on Redwood Blvd.

2.0 Collection System Maintenance:

Performance metrics are presented in the attached graphs showing the length of line cleaned/month, footage cleaned/hour worked, overflows/month, and the CCTV footage achieved. A brief discussion is also provided below.

Line Cleaning Performance: Computer Maintenance Management System (CMMS) generated 274 work orders for the month. Collections staff completed 274 work orders leaving zero (0) work orders outstanding. Completed work orders resulted in 46,762 feet of sewer pipelines being cleaned by staff with 4,747 feet being inspected with CCTV equipment in lieu of flushing.

Closed Circuit Television (CCTV) Performance:

The District's CCTV equipment was in the field for nine (9) working days and televised a total of 7,828 feet of sewer main.

CCTV Findings:

- Infrastructure-related: CCTV work did not identify any new significant sewer defects.
- O&M related: Condition assessment through CCTV work did not identify any area that would require a change in sewer line maintenance operations.

3.0 Pump Station (PS) Maintenance:

Collections staff conducted 169 lift station inspections this month. Of these, 38 inspections were generated through the District's JobsCal Plus CMMS system. There are zero (0) outstanding work orders for the month. A Pump Stations' Statistics summary is attached.

4.0 Air Relief/Vacuum Valves (ARVs):

Staff completed maintenance inspections eleven (11) air relief/vacuum valves this month.

5.0 Safety and Training:

General:

Collections staff attended four (4) tailgate meetings in August.

Specialized Training:

- Traffic Control/Flagger training
- Joe M. and Raul M. attended the tri-state seminar in Las Vegas.

Safety performance:

There were zero (0) lost time accidents in August.

1. Contractor resurfacing and re-setting the boxes at Bahia 2 Pump Station

6.0 Miscellaneous Projects/Repairs:

- Green waste cleaned up at Olive PS
- Automart PS plug and check valve replacements finished.
- 3211 Vactor sewer cleaner hose reel spool valve replacement.
- East Hamilton pump #1back in service.
- Hamilton meadows replaced both check valves
- Vacuumed out silt at DPS7
- 3211 Vactor sewer cleaner back from parking brake repair.
- Cleaned 16” siphon on Old Redwood Blvd.

7.0 Sanitary Sewer System Spills:

The State Water Resources Control Board Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems Order WQ 2022-0103-DWQ, effective June 5, 2023, updated the terminology for sewer system spills. The previous terminology, Sanitary Sewer Overflows (SSOs) are now referred to as Sanitary Sewer System Spills.

The Novato Sanitary District Collection System had zero (0) Sanitary Sewer System Spills in August 2024. The no spills certification confirmation number is 2675170.

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Appendix B: Self-Monitoring Report (October 2023 to September 2024

NOVATO SANITARY DISTRICT
SELF-MONITORING PROGRAM

For: September 2024
SANITARY SYSTEM OVERFLOWS FOR SEPTEMBER 2024

The Novato Sanitary District Collection System had zero (0) Sanitary Sewer System Spills in September 2024. The "No-Spills" certification confirmation number is 2677588.

For: August 2024
SANITARY SYSTEM OVERFLOWS FOR AUGUST 2024

The Novato Sanitary District Collection System had zero (0) Sanitary Sewer System Spills in August 2024. The "No-Spills" certification confirmation number is 2675170.

For: July 2024
SANITARY SEWER SYSTEM SPILLS FOR JULY 2024

The Novato Sanitary District Collection System had one (1) Sanitary Sewer System Spills in June 2024. The Spill Event ID is 895946.

282 Deer Island Ln. Novato, CA, July 19, 2024: This SSO was categorized as a Category III spill due to sludge discharged to unpaved surface area and being less than1,000 gallons and not reaching waters of the state. Approximately 561 gallons (100%) of the 561-gallon discharge were recovered. The SSO was determined to be caused by Struvite.

Initial Actions

1. Initial Call: 1:09 pm, the call came to the District office from the Novato PD Dispatch.
2. Notification: Nate Adams notified Jeff Andress of the callout and called Joe Moreno for assistance. Jeff A. notified Jeff Boheim of the spill at 1:19pm.
3. Arrived on scene: Collections crew members arrived on scene at 1:59 pm.
4. Verified Spill: Nate was able to verify the spill at 1:59 pm.
5. There was not an active spill when the crew arrived, but the crew noticed sludge on the asphalt up to the side of the road. When the manhole was opened there were signs of surcharging in the line.
6. The crew set up the Vactor truck on MH (J17002) and began to flush the line upstream to MH (J17004) and did not hit any obstructions.
7. Collection crew members took photos of the affected area.
8. Collections crew members used the Vactor to vacuum up the sludge on the side of the road along with removing the exposed dirt to clean up the area along with pressure washing the asphalt.
9. Cleanup efforts were finished at approximately 5:30 pm.
10. Measurements were taken of the affected area for calculations.

11. Collections Crews left the scene at 5:45 pm.

Summary:

- Call-out received: 1:09 pm
- Stoppage broken up: The stoppage had relieved itself prior to crews arrival.
- CWIQS Report: Spill event ID # 895946
- Line segment with spill: J17004_J17003
- Cause of spill: Struvite blocking the line
- Cleanup complete: 5:30 pm.

Spill Calculations: It was determined that the sludge spill area was 25' x 12' x 3(.25)" = 75cft x 7.48gal = 561 gallons.

Follow up Actions: The line segments were surveyed with the CCTV camera the following day, verifying the line was clear of obstructions and there were no faults in the line segments. The segment of pipe causing the blockage was last cleaned in May of 2023. It was determined that the struvite was residual from a cleaning of the decant line from approximately 3 weeks prior to the spill. There were no adjustments to the cleaning schedule made due to this incident.

For: June 2024

SANITARY SYSTEM OVERFLOWS FOR JUNE 2024

The Novato Sanitary District Collection System had zero (0) Sanitary Sewer System Spills in June 2024. The "No-Spills" certification confirmation number is 2671522.

For: May 2024

COLLECTION SYSTEM OVERFLOWS FOR MAY 2024

A. **2528 Laguna Vista Dr. SSO May 23, 2024:** This SSO was categorized as a Category 4 spill as it was less than 50 gallons and did not reach waters of the State. Staff were unable to recover any of the 4.5-gallon discharge as it was not actively flowing as they arrived, and the rest had evaporated from the asphalt. The SSO was determined to be caused by grit in the 6" mainline.

Initial Actions:

1. Notification: 10:22am, CSS Jeff A. was called and notified of the possible SSO at 10:25am from the NSD district office who was notified by the homeowner at 2528 Laguna Vista Dr.
2. Jeff A. called Joe Moreno (CSWII) and Raul Macias to respond to the callout at 10:27am.

3. Arrival on Scene: 10:46am, Jeff A., Joe, and Raul arrived and verified that there was evidence of a very small SSO but was not currently active at that time.
4. After pulling the manhole lid and seeing the system surcharged, Joe and Raul began setting up the vacuum to alleviate the surcharge.
5. Jeff A. began photographing the area.
6. Jeff A. and Joe began following the easement downstream to open the next manhole structure finding it was not surcharged.
7. Raul started flushing the mainline once the surcharge was pumped down enough to do. He hit an obstruction approximately 150' downstream. After a few attempts, it broke the blockage open at 11:15am.
8. After the flow was restored, Raul ran the line again with a root saw. No roots were caught at the downstream MH.
9. At 11:30am the cleanup efforts began by flushing the asphalt and curb and vacuuming the debris.
10. Cleanup efforts were completed at 11:50am.

Summary:

- Crew's discovery of SSO: 10:46am
- Stoppage broken up: 11:15am by the Collections crew.
- CWIQS Report: A draft report was initially entered into the CWIQS self-monitoring system on 6/4/2024, and subsequently certified on 6/4/2024; Spill Event ID #895139.
- Location of spill: 2528 Laguna Vista Dr, Novato, CA 94945. Manhole J13002
- Cause of overflow: sediment/debris
- Cleanup complete: 11:50am
- Spill Calculations: It was determined that the spill was 4.2 gallons. The stain was 144 feet long and approximately 1.5 feet wide at a depth of 1/32" or .0026 feet. 144' x 1.5' x .0026' = .5616 cubic ft. multiplied by 7.48gal/cu-ft = 4.2 gallons.

Follow up Actions: Collections crews returned the following morning to CCTV the section of pipe causing the surcharging. It was noticed there was more sediment in the line and the flusher was used to clean out the remainder. There were no roots in the 6" ACP mainline.

For: April 2024

COLLECTION SYSTEM OVERFLOWS FOR APRIL 2024

B. 63 Capilano Dr. SSO April 30, 2024: This SSO was categorized as a Category 4 spill as it was less than 50 gallons and did not reached waters of the state. Staff was able to recover all of the 4.9-gallon discharge. The SSO was determined to be caused by root intrusion into the 6" mainline.

Initial Actions:

11. Notification: 9:10am, CSS Jeff A. was called and notified of the possible SSO at 9:12am from the NSD district office who was notified by a plumber starting a pipe bursting project.
12. Arrival on Scene: 9:28am, Jeff Andress arrived and verified that there was evidence of a very small SSO but was not currently active at that time.
13. CSW I Jason Roach and Tony Rotolo arrived with the Vactor at 9:35 am
14. CSW Leadworker, Javier Vega Arrived with the Rodder at 9:37am
15. The CSW crew grabbed hand rods and started assembling them as Javier V. set up the push camera at the downstream manhole.
16. While the crew was setting up to break open the blockage in the line, Jeff A. started documenting the area, measuring the water stain on the driveway and photographing the SSO.
17. Jason and Tony began rodding the line. They hit an obstruction at about 10 feet downstream of the rod inlet.
18. The obstruction in the line was broken up at approximately 10:00 am.
19. Once the blockage was relieved, Javier was able to capture a small root-ball in the downstream manhole (G24020).
20. 10:10am, once the rods were removed from the line, the crew used the push cam to view the pipeline. There were two lateral connections just downstream of the rod inlet(G24021R), both containing heavy roots. It was determined this was the source of root intrusion causing the SSO.
21. 10:20am Tony backed the district vactor down the driveway, set up the vacuum, and began pressure washing the driveway down 66 feet to the vacuum tube which then sucked up the water and debris.
22. Cleanup efforts were completed at approximately 10:40am.

Summary:

- Crew's discovery of SSO: 9:28am
- Stoppage broken up: 10:00am by the Collections crew.
- CWIQS Report: A draft report was initially entered into the CWIQS self-monitoring system on 5/2/2023, and subsequently certified on 5/3/2023; Spill Event ID #.
- Location of spill: 63 Capilano Dr, Novato, CA 94945. Rod Inlet G24021R
- Cause of overflow: Root intrusion
- Cleanup complete: 10:40am

- Spill Calculations: It was determined that the spill was 4.9 gallons. The stain was 66 feet long and approximately one foot wide. So 66' x 1'x .01(1/8") = .66 cubic ft. multiplied by 7.48gl = 4.9368 gallons.

Follow up Actions: The plumber who called in the overflow was in the process of pipe bursting one of the laterals with roots. The owner of the second lateral contacted the same plumber requesting they address the roots in their lateral as well since they were both exposed from the excavation. NSD inspector is monitoring the job.

For: March 2024

COLLECTION SYSTEM OVERFLOWS FOR MARCH 2024

The Novato Sanitary District Collection System had zero (0) sanitary system overflows (SSO) in March 2024. The no-spills certification confirmation number is: 2664838.

For: February 2024

COLLECTION SYSTEM OVERFLOWS FOR FEBRUARY 2024

The Novato Sanitary District Collection System had two (2) sanitary system overflows (SSO) in February 2024.

1959 Novato Blvd, Novato Feb 4, 2024: This SSO was categorized as a Category II spill due to untreated wastewater discharged to unpaved surface area and being more than 1,000 gallons. Approximately 800 gallons (41.3%) of the 1937-gallon discharge were recovered. The SSO was determined to be caused by storm surcharging in the District's 24" transite (ACP) pipe trunk main collection system.

Initial Actions

1. Initial Call: 12:25 pm, the call came to Raul Macias, Collection System Worker I (CSW I), from the Novato Police Dispatch.
2. Notification: Jeff Andress, Collection Systems Superintendent, was notified of spill at 12:26 pm by Raul M.
3. Arrived on scene: Raul M. and Jeff Andress arrived on scene at 12:30pm.
4. Verified Spill: Jeff A. was able to verify the spill at 12:47pm.
5. The spill was contained on the property mainly in the carport where it was discharging out of the private lateral.
6. 1:05 pm Javier Vega, Lead Collection System worker, arrived with the District's combination sewer cleaner truck.
7. Javier set up the Vactor truck on MH(E15054) and began to pump down the system to relieve the overflow.
8. Jeff A. called the contracted septic hauler already assisting the District in another part of the collection system and instructed them to head over to Wilson and Novato Blvd to begin pumping out the MH to try to relieve the overflow.

9. The District's Vacuum truck and the contractor rotated pumping out the surcharged line to no avail.
10. 2:15 pm- It was decided to use the District's 4" Screwsucker pump to set up a bypass to a nearby 24" PVC relief sewer pipe on Novato Blvd.
11. The pump arrived at 2:45 pm and was set up at the intersection of Novato Blvd, and Wilson Ave. and began pumping at 2:50 pm.
12. 3:00 pm- the line was pumped down enough to alleviate the surcharging out of the lateral.
13. Traffic control was put in place to divert traffic around the pump taking up one of the lanes.
14. Once the spill had receded, the contractor was asked to pump down all the standing water on the carport area. He flushed the area with fresh water once cleanup was complete around 3:20 pm.
15. Cleanup was completed at 3:30 pm
16. The Collections crews continued to bypass pump the system until the rain died down and threats of surcharging the lateral had passed.

Summary:

- Call-out received: 12:25pm.
- Stoppage broken up: The system was pumped down and alleviated the spill at approximately 3:00pm.
- Called Cal-OES (2-hour notification): #24-0830.
- CWIQS Report: A draft report was initially entered into the CWIQS self-monitoring system on 2/07/2024; Spill Event ID #893380.
- Cause of spill: Wet weather event surcharging.
- Cleanup complete: 3:30pm.
- Spill Calculations: It was determined that the spill originated at approximately 12:00pm when the homeowner noticed his toilets were having trouble flushing, he went outside and checked his cleanout, and found the sewer puddled up, and continued to grow. It was determined that the estimated overflow ran from approximately 12:00pm to 3:00pm. The surcharge had pooled up in the carport and subsequently had entered the crawlspace of the house of an estimated 2 inches, or 1137gallons in the crawlspace. The contractor estimated 800 gallons were cleaned up from the carport area for a total of (1,137 + 800 gallons) or 1,937 gallons. The overflow rate was estimated at 1,937 gallons divided by 180 minutes for a flow rate of 10.8 gpm.

- Follow up Actions: Drawings and historical CCTV footage were reviewed to determine that the lateral for 1959 Novato Blvd. tapped into the 24" ACP pipe on Wilson Ave. A SmartCover monitoring system was set on the upstream manhole (E15099) with alarming to notify Collections of any future surcharging in this line. If the alarm comes in, the Collection department will respond with their 6" Dri-prime Godwin pump and setup

the bypass system to prevent further surcharging into this lateral. Options to reroute the lower lateral are currently being investigated.

Railroad Ave./Logan St., Novato, Feb 12, 2024: This SSO was categorized as a Category III spill due to untreated wastewater discharged to unpaved surface area and being less than1,000 gallons and not reaching waters of the state. Approximately 50 gallons (13.5%) of the 368-gallon discharge were recovered. The SSO was determined to be caused by Roots.

Initial Actions

12. Initial Call: 3:32 pm, the call came to the District office from the City of Novato Corp Yard.
13. Notification: Lynda Farmery notified Lead Collection Systems Worker, Javier Vega of the call.
14. Arrived on scene: Collections crew members and Field Services Manager, Jeff Boheim arrived on scene at 3:47 pm.
15. Verified Spill: Javier was able to verify the spill at 3:50 pm.
16. There was not an active spill when the crew arrived, but the crew noticed wet stains on the asphalt and puddles on the side of the road. When the manhole was opened there was surcharging in the line observed.
17. Javier set up the Vactor truck on MH (H15010) and began to flush the line. They hit a blockage at 120' downstream.
18. At 4:05 pm, the blockage was broken up and relieved the stoppage. The crew noticed a large root ball that was captured at the manhole.
19. Jeff Boheim and Collection crew members took photos of the affected area.
20. The crew let the surcharge drain down and continued to flush the line a few more times to make sure the line was clear.
21. Collections crew members used the second Vactor to vacuum up the ponded puddles on the side of the road along with removing the exposed dirt to clean up the area.
22. Cleanup efforts were finished at approximately 5:00 pm.
23. Measurements were taken of the affected area for calculations.
24. Collections Crews left the scene at 5:15 pm.

Summary:

- Call-out received: 3:32 pm
- Stoppage broken up: The stoppage was relieved at 4:05 pm.
- CWIQS Report: Spill event ID # 893857
- Line segment with spill: H16024_H15010
- Cause of spill: Root Intrusion
- Cleanup complete: 5:00 pm.

Spill Calculations: It was determined that the spill area with puddle up sewage was 98' x 6' x 1". 98 x 6 = 588sf x .083(1") = 48.804CF x 7.48gal = 365 gallons.

Follow up Actions: The line segments were surveyed with the CCTV camera the following day, verifying the roots in the line. The segment of pipe causing the blockage was last cleaned in December of 2023. It was determined that the root ball had been pushed out of a lateral into the District's mainline. This section of line, along with adjoining segments have been added to the root treatment list due to light roots observed in the follow up video work.

For: January 2024

COLLECTION SYSTEM OVERFLOWS FOR JANUARY 2024

The Novato Sanitary District Collection System had one (1) sanitary system overflows (SSOs) in January 2024.

23 Cowbarn Ln. SSO January 27th, 2024: This SSO was categorized as a Category I spill due to untreated wastewater discharged to a storm drain system that reaches surface waters. Staff recovered 55 gallons (3.7%) of the 1455-gallon discharge. The SSO was determined to be caused by a blockage due to grease build up in the District's 8" VCP mainline collection system.

Initial Actions

1. Initial Call: 11:30am, the call came into Eric Andersen from the Novato Police Dispatch.
2. Notification: Nate Adams, Collection System Worker I (CSW II), was notified of spill at 11:37am by Eric A.
3. Arrived on scene: Eric A. arrived on scene at 11:58am.
4. Verified Spill: Eric A. was able to verify the spill at 12:17pm as the manhole was covered by a dumpster.
5. Jeff Andress, Collection Systems Superintendent was notified of the spill by Eric A. at 12:18pm.
6. Eric A. immediately began damming up the storm drain with sandbags
7. 12:23pm Nate Adams arrived with the districts combination sewer cleaner truck.
8. Nate and Eric set up and began flushing the line MH I21029 down to I22011 as there is no vehicle access to I21090.
9. Blockage was broken up at 12:24pm and was approximately 257' from MH I21011.
10. It was determined that the blockage was caused by Grease and rags in the mainline.
11. Cleanup began around 1:00pm and was completed by 1:20pm.
12. Jeff A. arrived at 1:02pm and began photographing the area around the cleanout, the storm drain inlet, and the creek and helped with the cleanup efforts.
13. Jeff Boheim, Field Services Manager was notified of the spill at 1:40pm.
14. 1:45pm Nate Adams and Eric Andersen began flushing the line again to make sure it was clear of debris.
15.
16. 2:00pm - Cal-OES was notified of the spill by Jeff A.

17. 2:15pm - Jeff A. notified Becky Gondola, the Senior Environmental Specialist on call staff for Marin County Environmental Health, of the SSO. In our conversation it was determined that no water quality sampling was needed, but she wanted warning signs posted for 5 days and one of their reports filled out on Monday morning.
18. Eric Andersen picked up several SSO notification signs and posted them along the creek of the affected area at 3:30pm.

Summary:

- Call-out received: 11:30am.
- Stoppage broken up: 12:44am.
- Called Cal-OES (2-hour notification): Notified at 2:00pm. Control #24-0502.
- Called Marin County Health (2-hour notification): Notified staff at 2:15pm.
- CWIQS Report: A draft report was initially entered into the CWIQS self-monitoring system on 1/30/2024; Spill Event ID #892944.
- Line segment with blockage: Manholes I21091-I21090.
- Cause of blockage: Grease deposit and rags.
- Cleanup complete: 1:20pm
- Spill Calculations: It was determined that the spill originated at approximately 7:53am after speaking with complex's plumber who was on scene at 8:23am. It was estimated to be discharging at an average rate of 5gpm (determined from volume estimating table in the District's Overflow Emergency Response Plan) for a total time of 291 minutes until broken up at 12:44 am, for a total of 1,455 gallons.
- Follow up Actions: CCTV surveyed line where blockage occurred from MH I21029 manhole to the intersection of S. Novato Blvd. Any remaining debris were cleaned from the line. It was determined that there is a light sag in the line that was causing grease to build up in the mainline and that was the cause of the SSO. This segment along with the upstream and downstream segments were adjusted in the cleaning schedule from a 6-month cleaning frequency to a 3-month cleaning frequency.

For: December 2023
COLLECTION SYSTEM OVERFLOWS FOR DECEMBER 2023

The Novato Sanitary District Collection System had zero (0) sanitary system overflows (SSO) in December 2023. The no-spills certification confirmation number is: 2660291.

For: November 2023
COLLECTION SYSTEM OVERFLOWS FOR NOVEMBER 2023

The Novato Sanitary District Collection System had zero (0) sanitary system overflows (SSO) in November 2023. The no-spills certification confirmation number is: 2658680.

For: October 2023

COLLECTION SYSTEM OVERFLOWS FOR OCTOBER 2023

The Novato Sanitary District Collection System had zero (0) sanitary system overflows (SSO) in October 2023. The no-spills certification confirmation number is: 2657120.