City of Benicia
Sewer System
Management Plan (SSMP)

CIWQS Agency Name: Benicia City

CIWQS WDID: 2SSO10095

June 2025 Update

City of Benicia
Public Works Department
250 East L Street
Benicia, California 94510
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Preface

This Sewer System Management Plan (SSMP) has been prepared pursuant to the requirements of State Water Resources Control Board (SWRCB) Order No. WQO-2022-0103-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (General Order). The content of this SSMP reflects the specific requirements of the General Order, and was also informed by the *SSMP Development Guide,* developed jointly by the San Francisco Bay Regional Water Quality Control Board and the Bay Area Clean Water Agencies (BACWA) in 2005, and by the subsequent *Guide for Developing and Updating of Sewer System Management Plans* prepared by BACWA in 2024.

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

CIWQS Identification

The following designations are used in CWIQS to identify the City and its collection system:

Agency: Benicia City

WDID: 2SSO10095

Collection System: Benicia City CS

1.0 Goal and Introduction

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

1.1. Regulatory Context

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

1.2. Sewer System Management Plan Update Schedule

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

1.3. Sewer System Asset Overview

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

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

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

1.1. Regulatory Context

The City of Benicia's sewer system is managed through the Public Works Department under the direction of the Public Works Director. Operations and maintenance (O&M) of the system is assigned to the Public Works Maintenance Division, Sewer Collection section. The Section's Maintenance Superintendent has responsibility for day-to-day management of field maintenance staff, SSMP implementation, spill reporting, and related activities. Additional support for SSMP implementation and SSMP updating is also provided by the Public Works Management Analyst, the Wastewater Operations Division, the Public Works Engineering Department, and outside consultants. Additional information on the organizations structure is provide in Section 2.

This SSMP was prepared by the Public Works Department management and staff with support from EOA Inc. The SSMP is a compendium of the policies, procedures, and activities that are

included in the planning, management, operation, and maintenance of the City's sanitary sewer system.

1.2. Sewer System Management Plan Update Schedule

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

- SSMP Update: August 2, 2025
- SSMP Audit: February 2, 2025 (six months after end of required 3-year audit period, listed as August 2, 2024). The audit was conducted on January 8, 2025 and uploaded into CIWQS. The next audit will cover the period through August 2, 2027 and must be uploading into CIWQS by February 2, 2028.

1.3 Sewer System Asset Overview

The City of Benicia is located entirely with Solano County, approximately 35 miles northeast of San Francisco and 57 miles southwest of Sacramento. The City was founded in 1847 along the north shore of the Carquinez Strait, where the combined flows of the Sacramento and San Joaquin rivers have cut a deep gorge through the Coast Range. The Strait is a crucial link in northern California's inland waterway, connecting San Pablo Bay and San Francisco Bay to the west with the Sacramento and San Joaquin River deltas to the east. Through the Strait, ocean-going ships can reach the Port of Benicia or continue on to the Central Valley ports of Sacramento and Stockton.

The City has a population of approximately 26,500 as of July 2023 as reported by the US Census Bureau. The City's sewer collection system service area coincides with the City boundaries, covering an area of 14.1 square miles. The collection system consists of 160 miles of gravity sewers, a 3-mile wet-weather relief line, 5 miles of force mains, 23 pump stations, and approximately 80 miles of privately-owned laterals. The gravity sewer lines range in size from 4-36 inches in diameter. Most of the force mains are relatively short and connect to the nearest gravity sewer, except for a larger (12-14 inch) force main conveyance system along Bayshore Road and Park Road that serves the industrial area and residences on the east side of the City. There are no siphons on the system. There are no satellite collection systems that discharge to the City's sewer system.

In 1958 the City completed construction of a Wastewater Treatment Plant on East 5th Street. The plant has been upgraded and expanded several times as the community grew. The plant currently has a permitted average dry weather flow capacity of 4.5 MGD. Its discharge system consists of a 1,100-foot long outfall pipeline and a 150-foot long outfall diffuser pipeline. The Wastewater Treatment Plant is operated under an NPDES permit (Order R2-2025-0001) and several additional Regional NPDES permits issued by Regional Water Board.

The sewer system has over 9,000 sewer service connections, the vast majority of which are residential connections. A breakdown of connections by type is provided in Table 1.1. Valero Refinery, which is within the City boundaries, has its own collection system and wastewater treatment plant that operates under a separate NPDES permit.

Table 1. Number of Sewer Connection by Type

Type of Service	Number
Residential	8,392
Multi Family	322
Mobile Home	13
Commercial	483
Industrial	72
Municipal	27

Source: City of Benicia Finance Department. January 2025

Figure 1 shows the service area and the location of key City facilities. The City's wastewater collection and treatment operations are closely integrated and utilize common administrative facilities and engineering and administrative staff. The City does not believe that there are unique service boundary conditions and challenges.

The stormwater collection system is separate from the sanitary sewer system, and there are no structures that divert stormwater to sanitary sewer system.

The City's sewer collection system and wastewater treatment plant are funded through the City's Enterprise Fund, funded primarily by ratepayers paying bi-monthly bills.

The City utilizes the NEXGEN computerized maintenance management system (CMSS) which incorporates the usual CMMS functions such as work order generation and tracking, cleaning schedules, archiving of historic maintenance data, asset information, etc. The NEXGEN system is linked to a GIS-based map system that is maintained by the City's IT Department. NEXGEN is also used by the Water Operations Division and Wastewater Treatment Plant. CCTV videos and related information are managed using IT Pipes software. Additional information and screen shots from these data management systems are provided in Section 4.2

1.4 Definitions and Abbreviations

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

Bay Area Clean Water Agencies (BAWCA)

Backwater Prevention Device

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

Best Management Practices (BMP)

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

Building Sewer – see Sewer Lateral

California Integrated Water Quality System (CIWQS)

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

California Office of Emergency Services (CAL-OES)

Capital Improvement Plan (CIP)

A City document that identifies future capital improvements to the City's sanitary sewer system.

Capacity, Management, Operations, and Maintenance (CMOM)

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

Clean Out or Property Line Clean Out

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

Category 1, 2, 3, 4 Spills – see "Spills" below, and also Table 7

Closed Circuit Television (CCTV)

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

Computerized Maintenance Management System (CMMS)

Refers to a database application used to manage and document maintenance activities of a collection system.

Data Submitter (DS)

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

Drainage Conveyance System

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

Enrollee

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

Fats, Oils, and Grease (FOG)

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

Fiscal Year (FY).

Food Service Establishment (FSE)

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

General Order

Refers to State Water Board Order 2022-0013-DWQ, *Statewide Waste Discharge Requirements – General Order for Sanitary Sewer Systems*. The term General Order is also used throughout Order 2022-0013-DWQ in referring to itself.

Geographical Information System (GIS)

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

Global Positioning System (GPS) Device

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

Grease Removal Devices (GRDs)

Refers to grease traps and grease interceptors that are installed to remove FOG from the wastewater flow at food service establishments.

Infiltration/Inflow (I/I)

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

Lateral

Refers to the piping that conveys sewage from a building to the City's sewer main. A distinction is sometimes made between the upper lateral (from building to property line, also referred to as the Building Sewer) and the lower lateral (from property line to the sewer main).

Legally Responsible Official (LRO)

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

Manhole (M/H)

Million Gallons per Day (MGD)

Monitoring and Reporting Program (MRP)

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

Office of Emergency Services (OES)

Refers to the California State Office of Emergency Services

Operations and Maintenance (O&M)

Pipeline Assessment and Certification Program (PACP)

Refers to the NASSCO certification program that is used for the evaluation and condition assessment of sewer lines and appurtenances from closed circuit televising of the lines and appurtenances.

Private Lateral Sewage Discharge (PLSD)

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

Preventative Maintenance (PM).

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

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

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

Sanitary Sewer System

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

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

Sewer System Management Plan (SSMP)

Spill

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

Category 1:

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

- 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 a City-owned and/or operated lateral that discharges to a surface water is a Category 1 spill;

Category 2:

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

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

Category 3:

A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

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

Category 4:

A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

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.

Spills that include multiple appearance points resulting from a single cause are considered a single spill for documentation and reporting purposes in CIWQS.

Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned are not considered failures of the City's sewer system and do not require reporting by the City.

Note: The previous General Order used the term "Sanitary Sewer Overflow" (SSO) to describe releases from the sewer system. That terminology is not used in the current General Order, but may be still be used in other documents, and still appears in some places on the State Water Board web site.

Spill Emergency Response Plan (SERP)

A Plan that describes actions taken by the City in response to a spill, notification and reporting requirements, and other related items. The SERP is required as Element 6 of this SSMP.

Spill Report

Refers to sanitary sewer overflow report submitted through CIWQS

State Water Resources Control Board (SWRCB)

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

Supervisory Control and Data Acquisition (SCADA)

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

Surface Water

In the context of sewer spills, refers to streams and creeks, the Bay and its sloughs, wetlands, ocean, lakes, and other water bodies. Unless fully recovered, spills that reach storm sewers are deemed to reach surface water.

Water of the State [Definition from California Water Code § 13050(e)]

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

Waste Discharge Requirements (WDR)

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

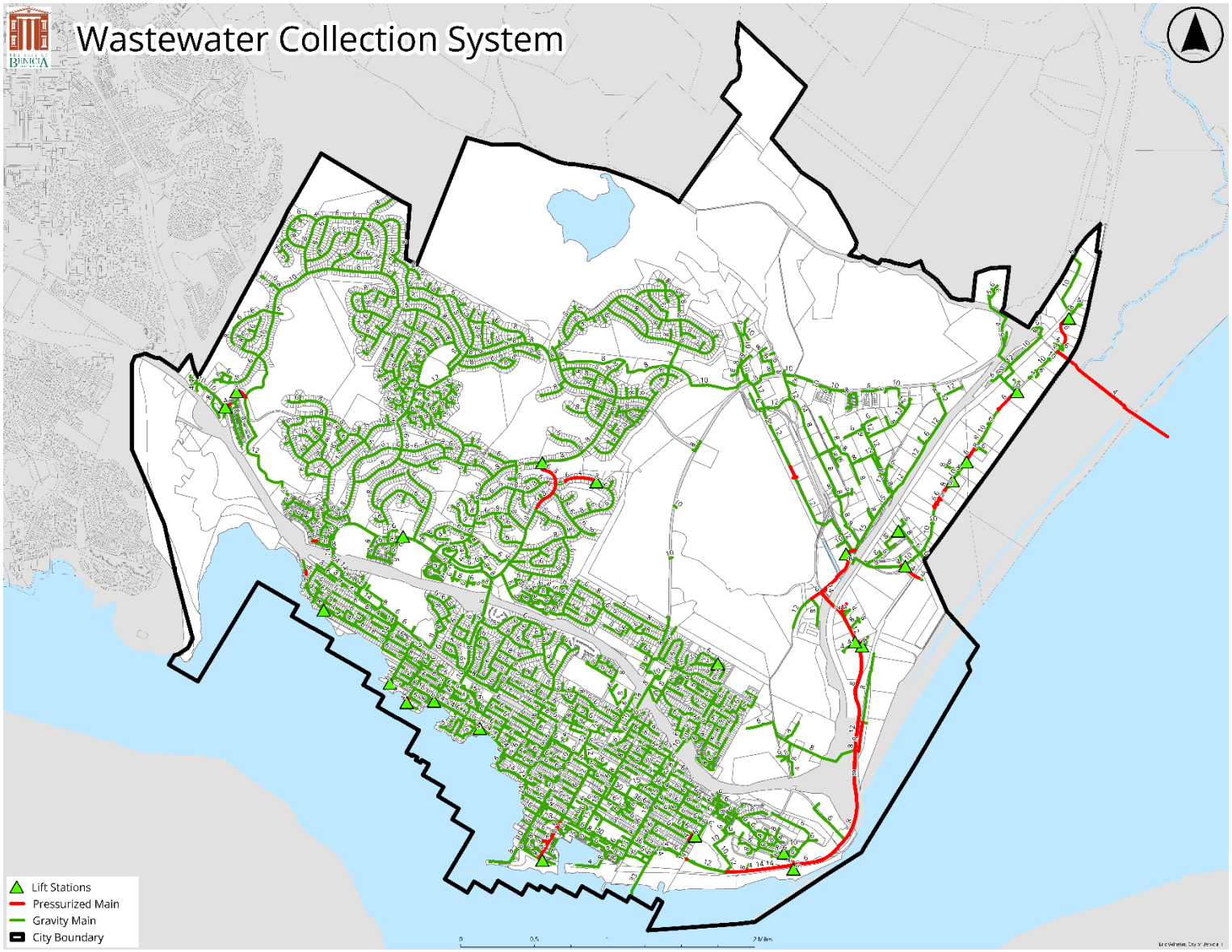

Figure 1. Sewer Service Area

2.0 Organization

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

- *The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;*
- *The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;*
- *Organizational lines of authority; and*
- *Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county health officer, county environmental health agency, and State Office of Emergency Services.)*

2.1 Name of Legally Responsible Official

The City's current LROs are listed below. Contact information is provided in Section 2.3. The Maintenance Superintendent is the primary LRO. For spill reporting, the WWTP Superintendent serves as backup.

Table 2. Listing of Current LROs

Name	Position
John Gant	Maintenance Superintendent
Andy Morris	WWTP Superintendent

2.2 Organization Chart

An organization chart for those individuals and entities responsible for implementing the SSMP is provided as Figure 2. The roles and responsibilities for those identified on the chart are described in Section 2.3, followed by names and contact information in Section 2.4.

2.3 Roles and Responsibilities

City Council: Responsibility for certifying the SSMP and providing the necessary funding for its implementation lies with the City Council. An organization chart for staff of the Public Works Department involved in sewer system management and SSMP implementation is presented in Figure 2. Roles and responsibilities of those individuals are as follows:

Public Works Director: Establishes Department policy, authorize outside contractors to perform services, serve as public information officer, provide information updates to the City Council, and arrange for emergency meetings if necessary.

Deputy Director of Operations/City Engineer: Provides operational oversight of the SSMP. Will lead Engineering staff, allocate resources, delegate responsibility, and oversee O & M and

capital budgets. This position also will prepare collection system planning documents, manage the capital improvement delivery system, and document new and rehabilitated assets.

Deputy Director of Operations/City Engineer: Provides operational oversight of the SSMP. Leads Engineering staff, allocate resources, delegate responsibility, and oversee O & M and capital budgets.

Engineering Technician: Ensures that new and rehabilitated assets meet city standards, work with field crews to handle emergencies when contractors are involved and provide verbal reports to the City Engineer.

City Engineering Staff: Works as needed to implement applicable permits, laws and regulations, capital projects, and provides support to all parts of operation.

GIS Coordinator: Supports updating of sewer system maps and GIS components of CMMS.

Maintenance Superintendent: Provides administrative oversight and support for the Water and Wastewater groups within the Public Works Maintenance Division, including budget development and implementation. Oversees development/updating of the Spill Emergency Response Plan, spill documentation and reporting, preparation of the Annual Report. Participates in SSMP Audit and SSMP updating, and provides relevant information to Public Works Department management. The Maintenance Superintendent serves as the primary LRO.

Field Utilities and Streets Supervisor: Manages collection system field O&M activities, leads spill response, investigates and reports spills, and has responsibility for much of the day-to-day implementation of the SSMP.

Field Maintenance Staff: Conduct preventive maintenance activities, mobilizes and responds to notification of stoppages and spills (mobilize sewer cleaning equipment, bypass pumping equipment, portable generators, etc), conducts spill cleanup, and (when needed) monitoring. Along with the Maintenance Superintendent, collects information required for documentation and reporting of spills.

Wastewater Treatment Plant Superintendent: Responsible for oversight of treatment plant operations and collection system lift station O&M. Serves a primary LRO for NPDES permit reporting and backup LRO for spill reporting. Participates in SSMP Audits and SSMP updating.

Wastewater Treatment Plant Operations and Maintenance Staff: Monitor, inspect, and perform routine maintenance at lift stations.

Water Quality Supervisor: Oversees FOG program implementation and public education, responsible for spill monitoring, and coordinates with internal or contract laboratory for analyses of monitoring samples.

In addition to the above, outside contractors and consultants may provide technical support for SSMP updating and internal audits, engineering studies and design, collection system O&M, advice on compliance and reporting issues, analysis of monitoring samples and other Program needs.

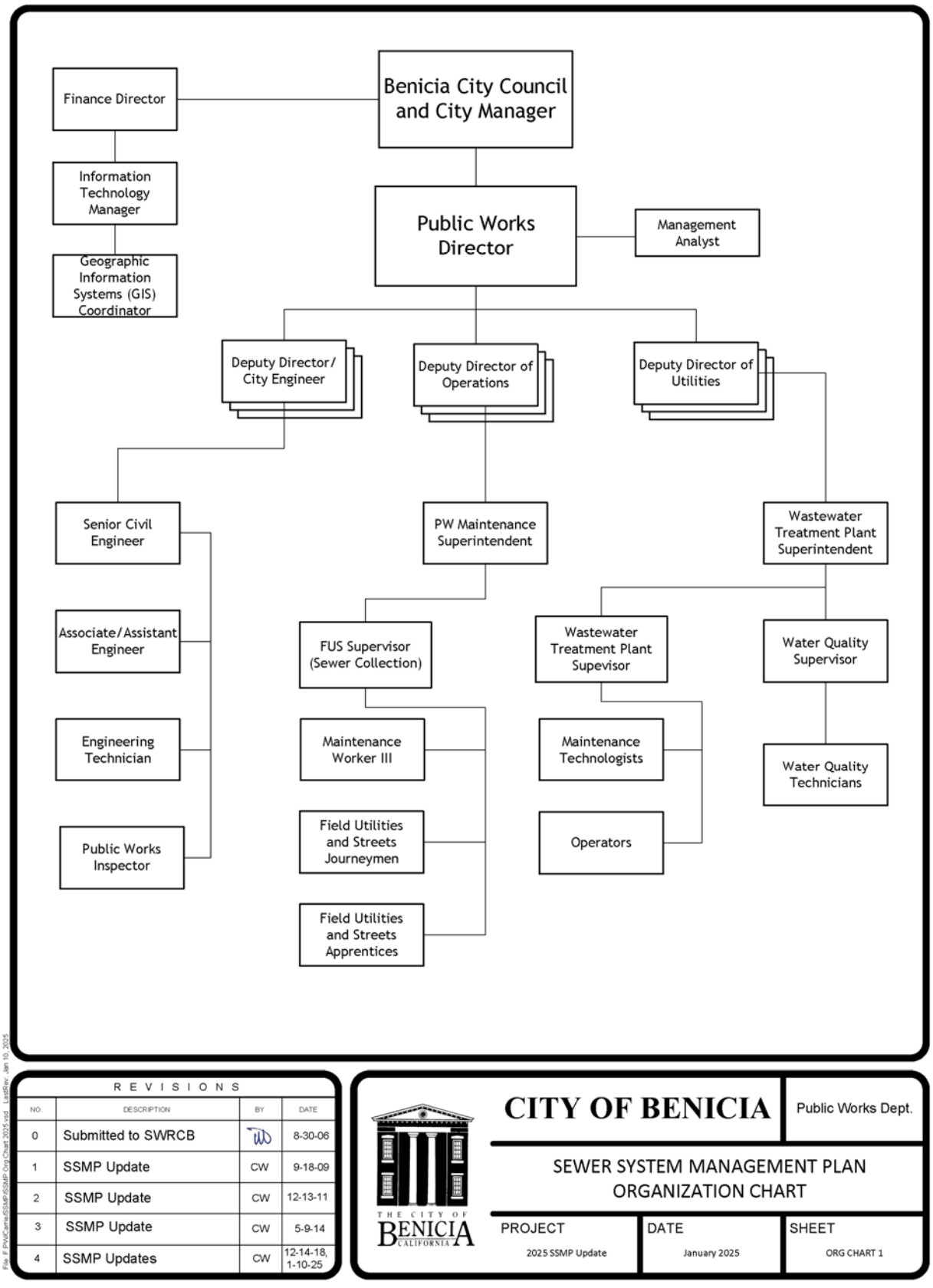

Figure 2. SSMP Organization Chart

2.3 Contact Information

Contact information is provided for the positions described above. Phone numbers for the positions listed do not change when staffing changes, however, email addresses will change. Format for email is first initial+last name@ci.benicia.ca.us

Table 3. Contact Information

Position	Phone Number
Public Works Director	707-746-4240
City Engineer	707-746-4240
Engineering Technician	707-746-4240
City Engineering Staff	707-746-4240
Maintenance Superintendent	707-746-4296
Field Maintenance Staff	707-746-4296
WWTP Superintendent	707-746-4336
Water Quality Supervisor	707-746-4336
Water Quality Technician	707-746-4336
Management Analyst	707-746-4240

2.4 Chain of Communication for Reporting Spills

The following describes the chain-of communication for spill response and reporting (derived from SERP Section 6).

Lift Station Alarms

The City operates 23 lift stations. In the event of a station failure the SCADA alarm system is activated and the WWTP Operations staff is contacted. To prevent spills, wastewater from the wet well can either be pumped into a vacuum truck for disposal or bypassed around the station into the sanitary sewer system

Public Observation

Public observation is the most common way that the City is notified of blockages and spills. Contact numbers and information for reporting spills are on the City's web site at https://www.ci.benicia.ca.us/corpyard . The City's telephone number for reporting sewer problems is (707) 746-4296

> Normal Work Hours: When a report of a sewer spill or backup is received during normal work hours, Corp Yard administrative staff receives the call and completes the Sewer Overflow Service Call Report. The information is forwarded to the FUS Supervisor or Maintenance Superintendent who will then dispatch a collection crew to the incident.

After Hours: After hours callers are directed to call Police dispatch which will notify the On-Call Employee. The On-Call Employee will perform and investigation, document findings and call for spill response support as needed.

When calls are received, either during normal work hours or after hours, the individual receiving the call will collect the following information:

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

City Staff Observation

City staff conduct periodic inspections of the sewer system facilities as part of routine activities. Any problems notes are reported to the appropriate City staff, who in turn respond to emergency situations. Work Orders are issued to correct non-emergency conditions.

Contractor Observation

Refer to SERP Section 6.4

3.0 Legal Authority

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

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

Table 4. Documentation of Legal Authority

Legal Authority to	Benicia Municipal Code or California Plumbing Code (CPC) Reference[1]
Prevent Illicit discharges	13.50.010, 13.50.040 13.50.042, 13.50.070
Prevent inflow and infiltration	13.50.040A Par.12
Prevent discharge of fats, oils and grease	13.50.040A Par. 2, 17 13.50.070, 13.50.075, CPC 305.1
Prevent chemical dumping	13.50.040 Par. 1,4,5,7,11,14,15 13.50.090, 13.50.095, CPC 305.1
Prohibit/control trash & debris	13.50.040A Par. 2, CPC 305.1
Collaborate with Stormwater Agencies	N/A (see note 2)
Require Proper Design and Construction;	13.50.150, 13.60 et seq, 13.64.020, CPC 304.1et seq
Access City-owned or operated service laterals for maintenance, inspection, or repairs.	13.50.200, 13.60.050, 13.64.040, 8.04 et seq, UAC 202.3
Enforce violations of its sewer ordinances, service agreements, or other legally binding procedures;	1.08 et seq, 8.04 et seq 13.50.255 through .315, 13.76 et seq
Obtain easement accessibility agreements for O&M	13.64.040 See note 3

1. In 2022, the City adopted Ordinance No. 22-12, which repealed Title 15 (Building and Construction) of the City's Municipal Code and adopted by reference the 2022 California Building Standards Code Title 24, which includes numerous building-related codes, including the California Plumbing Code, 2022 Edition, with Appendix Chapters A, B, E, I, K, and L. Ordinance 22-12 also adopted several amendments to the CA Plumbing Code that relate to inspection, fees, and installation of clean-outs on sewer laterals.
2. The City operates the stormwater system within the sewer service area and therefore does not require specific legal authority for coordination.
3. Code Section 13.64.040 states that all sewers constructed in rights-of-way or easements shall be conveyed to and owned by the City.

4.0 Operations and Maintenance Program

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

4.1. Updated Map of Sanitary Sewer System

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

4.2. Preventive Operation and Maintenance Activities

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

The scheduling system must include:

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

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

4.3. Training

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

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

4.4. Equipment Inventory

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

4.1 Collection System Maps

The Engineering Division is responsible for compiling, maintaining and publishing a citywide utility map book titled The City of Benicia Water, Sewer and Storm Drains Utility Maps. This document shows the approximate location and size of all water, sewer and storm drain lines. The utility map system was originally based on CAD drawings. The CAD-based maps were updated in 2008, with revised pages bound into the map books in 2010. These are carried in Maintenance crew trucks for reference. However, the historic utility mapping system has transitioned to a GIS-based system as described below.

The City uses the NEXGEN software to perform the functions of a computerized maintenance management system (CMMS). The system includes an integrated GIS-based mapping system for

sewer assets hosted by the City's IT Department. Necessary map corrections and updates are tracked by the Public Works Maintenance Superintendent and Collection System Maintenance Supervisor and forwarded to the City's GIS Coordinator for updating the GIS files. These maps and related information from NEXGEN are available to Maintenance crew in the field via their tablet computers. The City can provide an electronic copy (pdf format) of the map book or screen shots of the GIS-based maps to the Regional and/or State Water Board upon request.

Boundary Map

The City will upload an electronic sanitary sewer system service area boundary map as required under Section 3.8 of Attachment E1 of the General Order, in accordance with the specifications provided by the State Water Board.

4.2. Preventive Operation and Maintenance Activities

Sewer Mains

The City has a preventive maintenance program to minimize sewer overflows and to keep the wastewater flowing to the treatment plant. The program employs a full-time collection crew comprised of five members that include a crew leader, journeymen and apprentice, plus the Field Utilities Supervisor and Maintenance Superintendent. Equipment used for preventive maintenance include two Vactor Combination Truck that provides high-flow vacuum and high pressure water jetting, a power rodder, handrod, CCTV Van and lateral "push" camera, backhoe, dump truck, and utility trucks.

The NEXTGEN CMMS is used for scheduling of sewer main maintenance activities, generating work orders, and related data collection and archiving. Routine cleaning frequencies for sewer mains and lift stations are set based on historic experience, history of spills, CCTV observations and environmental sensitivity. Infrastructure in close proximity to surface water is given a higher priority for televising, cleaning, and repair.

Sewer cleaning activities can be broken into two general categories, "Top-down" cleaning and Targeted Cleaning. Top-down cleaning involves cleaning the entire collection system, starting from the furthest reaches and working down to the treatment plant. Top-down cleaning is typically repeated on a three-year cycle. Targeted Cleaning focuses on those segments (a.k.a. "watch areas") known to require more frequent maintenance because of pipe slope, pipe condition, and other factors. These segments may be assigned quarterly, semi-annual or annual cleaning frequencies. Figure 3 is an example screen shot from NexGen of a pipeline segment.

The City's target for total sewer cleaning activities is 8,000 – 15,000 feet per month. This range includes both flushing and rodding (for root removal).

Observation made during cleaning operations can be entered into NEXGEN by the Collections crew using the field tablet computers.

CCTV inspections are performed to identify structural deficiencies and prioritize future repair/replacement activities, to aid in prioritizing cleaning activities, and to identify unapproved connections. CCTV inspections are done primarily in coordination with "top-down" cleaning (line segments are inspected with CCTV after cleaning). The City's target CCTV footage is

approximately 55,000 ft/year. CCTV inspection videos are managed using the IT Pipes software that utilize industry standard Pipeline Assessment Certification Program (PACP) condition ratings. Figure 4 provides an example generated from the CCTV software.

The City's 2020 Wastewater Master Plan Update and Major Facilities Condition Assessment included an assessment process that identified and prioritized 23 potential CIP projects for the collection system. The assessment was informed in part by CCTV inspections. The Master plan Update is discussed in greater detail in Section 8.

As a supplement to O&M activities described above, the City utilizes an outside contractor (Duke's Root Control) to provide periodic root control treatments to it sewer mains. The frequency of treatments is based on what is found during inspections, with re-treatedment as needed based on follow up inspections. The goal is to follow up within two years, as that is the timeframe that the product covers

The City employs two SmartCovers to monitor surcharge conditions in certain manholes, providing an "early warning" for potential spills. The vendor, Hadronex, monitors the equipment and notifies City staff via text message/email when the water level in the manhole reaches a preset level. City staff then goes to the location to verify the problem and troubleshoot for cause. The SmartCovers are located at the Robert Semple Crossing manhole and West Channel Road manhole.

Reports and logs formerly used to document sewer main cleaning activities have been largely superseded by the CMMS which can generate various summary screens and reports "on demand". Appendix B contains several "hard copy" procedures relevant to cleaning activities.

Sewer Laterals

Both the upper and lower sewer laterals that connect structures to the sewer mains are owned by the property owner of the parcel on which they are located. Maintenance of the upper lateral (a.k.a. building sewer) is the responsibility of the property owner. The City's policy regarding maintenance of the lower lateral is as follows (Benicia Municipal Code Section 13.60.050 Maintenance Generally):

A. The owner shall maintain the building sewer and all other sewage facilities located on his property. The city shall maintain lateral sewers if all of the following conditions are met:

1. The lateral is constructed in accordance with city requirements and is approved by the city for maintenance;

2. There is an approved cleanout located within five feet of the property boundary and the cleanout is accessible;

3. Normal maintenance work can be conducted without moving or damaging private property.

B. Where these conditions do not exist, the owner of the property served by the lateral sewer shall maintain it. In no event is the city responsible for damage or inconvenience resulting from stoppage or other malfunction of a side sewer.

Figure 3. Example screen shot of pipeline segment from NexGen CMMS

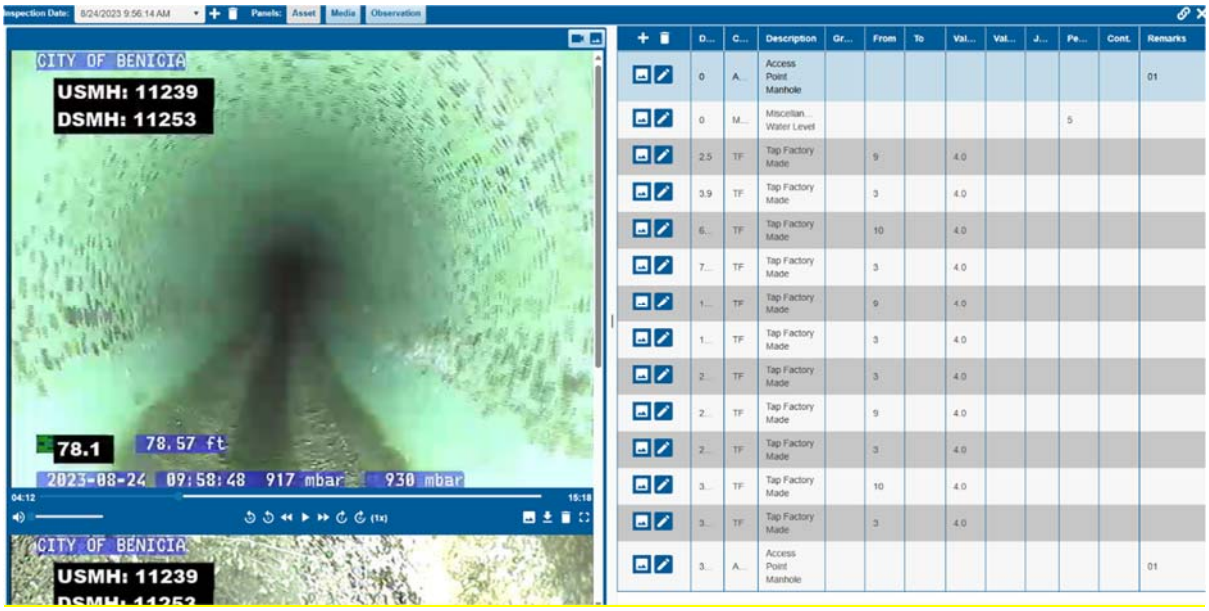

Figure 4. Example Screen Shot from IT Pipes CCTV Software

Lift Stations

The City's 23 lift stations are also subject to regular inspections and preventative maintenance, conducted by wastewater treatment plant (WWTP) staff. Although the stations are inspected weekly, only the more comprehensive semi-annual and annual inspections are tracked in the WWTP's CMMS (NEXGEN). Weekly lift station inspections are tracked on a simple hand-written log. See attached example.

Each lift station's wet well is cleaned by the Collections crew a minimum of once per year using the Vactor truck. The cleaning schedule is presented below. In order to ensure station reliability, the City maintains a basic spare parts inventory (see Section 4.4).

Table 5. Lift Station Cleaning Schedule

Month	Stations
January	Highlands, Industrial Way, Carlisle, WWTP
February	Parkway Plaza, Cambridge, Sam's
March	Park Rd., Teal Court, BI, WWTP
April	East 7th, Wharf, Barn, East B
May	Bayshore, Tire, Carlisle, Corp Yard, WWTP
June	Parkway Plaza, Cambridge, West 13th
July	Park Rd., Highland, Vans, WWTP
August	East 7th, East B, Barn, West 8th St.
September	BI, Fleetside 1, Fleetside 2, Carlisle, WWTP
October	Parkway Plaza, Cambridge
November	Park Rd., Egret Ct., Corp Yard, WWTP
December	East 7th, East B, Barn, Fleetside 3

Revised 1/6/2025

The stations all have telemetry to the WWTP can be monitored remotely via the WWTP's SCADA system. The SCADA system monitors various parameters at each station, collects and trends data, and notifies staff in the event of an alarm. Figure 5 shows the SCADA system's overview screen for lift stations. Figure 6 shows the SCADA screen for an individual station. Trend screens for monitored parameters (e.g. wet well level) are also available on SCADA.

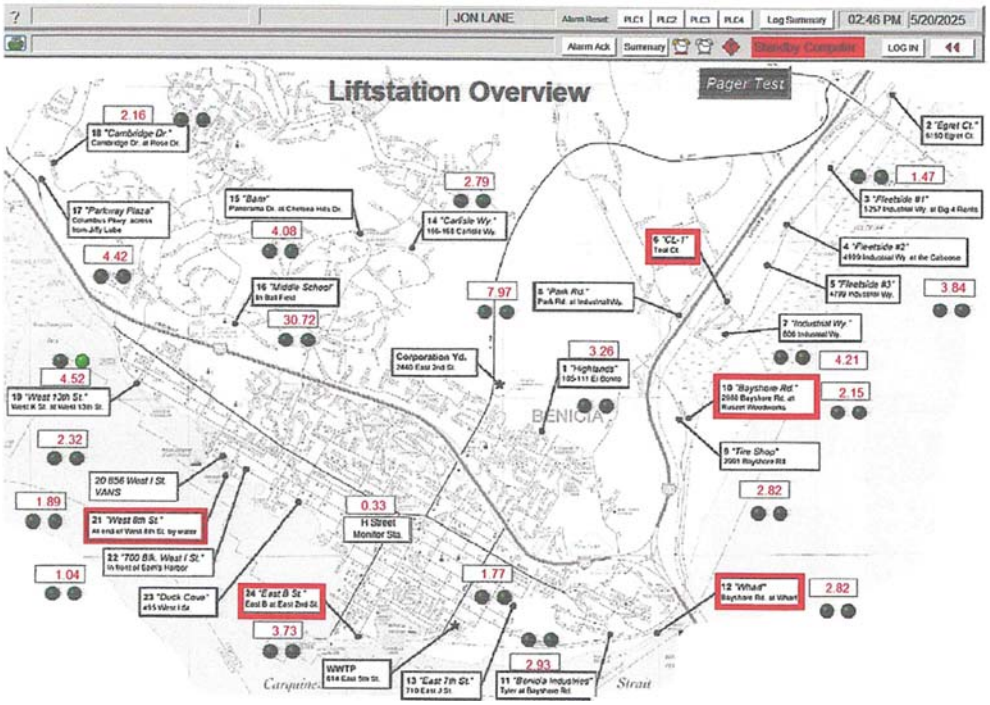

Figure 5. Lift Station SCADA Overview Screen

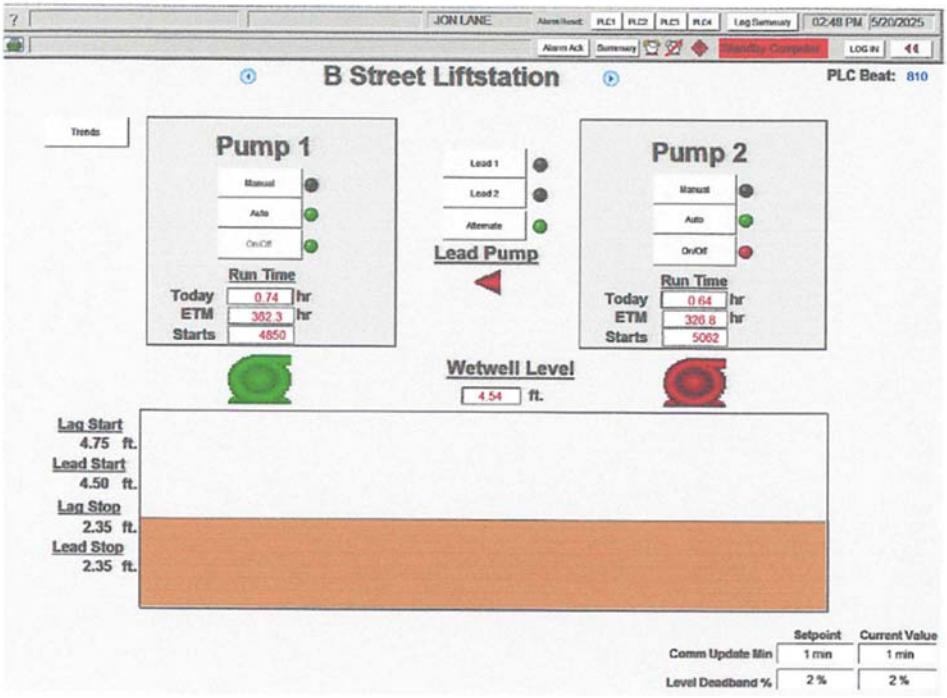

Figure 6. Example Lift Station SCADA Monitoring Screen

4.3 Training

Training - General

The wastewater collections training program has become an ongoing process that not only includes technical training, but also safety training for all the utility personnel assigned. Currently Lead and Journeymen are assigned apprentices whom they help train in the daily aspects of the operation, maintenance, and safety of the wastewater collection cleaning, and disposal systems.

The City has budgeted funds to help maintain active relationships with the following organizations to help train the Collection Crew through classroom, seminars, correspondence, on-site, and self-pace courses: AWWA, CSUS-OWP, APWA, NPDES, and CWEA.

Safety Training

The City has an Annual Safety Training Program, with trainings such as the Injury & Illness Prevention Program (IIPP), Confined Space, Lock-out/Tag-out, and Heavy Equipment Training. Training for all divisions within Public Works is provided is provided by Du-All Safety. The IIPP training is site-specific; hard copies of the training materials can be found at the Wastewater Treatment Plant and the Public Works Maintenance Corporation Yard. Also available is the City's safety committee (BENSAC) training calendar, which is located at F:/pubworks/Training BENSAC Current Training Calendar.

Other Training

Spill Estimation and Response and Training: The Maintenance Superintendent is responsible for coordinating spill training. Typically staff training is provided by DFK Solutions, which developed the original Spill Emergency Response Plan and updated it 2023. The most recent training by DKF was conducted in January 2025. Training may also be provided by the Maintenance Superintendent as part of the Apprenticise Program. Training covers spill response, spill volume estimating, and data collection/reporting requirements of the General Order. Although Maintenance staff are trained in spill volume estimation methods and reporting requirements, for consistency in reporting in CIWQS, spill volume estimates are normally done by the Maintenance Superintendent or the FUS Supervisor.

WWTP laboratory staff previously provided formal training in spill sample collection for the Maintenance crew. However, the City's current procedure calls for laboratory staff to conduct spill sampling when needed. Maintenance staff are aware of when sampling is required but will not perform the actual sampling or receive future training in sample collection. Laboratory staff annually checks the spill sampling kits

First Aid & CPR Training: Every other year all Public Works staff are trained on First Aid and CPR. Training is conducted by an outside contractor who provides an EMSA Approved First Aid training course and an American Heart Association Heart Saver CPR course. The First Aid & CPR certification each employee receives is valid for two years.

Apprentice Program: The Field Utilities and Streets Worker Apprentice classification is an entry-level position within the Field Utilities and Streets section. These employees assist journey level staff in performing the more complex, and difficult tasks. Typically, employees are rotated annually between three departments to be trained in the city's sewer system, water distribution system and streets operations. Also, these employees learn sewer operations by hands-on training and through various correspondences such as Grade I Collections System Certification Programs.

Collection Maintenance Certification: The California Water Environment Association (CWEA) awards various grade level certifications to all individuals that pass their exam criteria. The City of Benicia has adopted this competency as a standard and requires all Maintenance Division staff (i.e. water distribution, sewer collection and streets) to obtain a Grade I Collection Maintenance Certification. This allows staff to be cross-trained.

4.4 Equipment and Replacement Part Inventories

The following are listings of key equipment used for maintenance activities:

Sewer mains, laterals, manholes, and associated appurtenances:

- Vactor Combination Trucks (2)
- Power Rodder
- 3/4/ Ton Utility Truck
- 1 Ton Utility Truck
- Repair Clamps
- Dump Truck
- Hand Rod
- Backhoe
- CCTV Van and Lateral Camera

Lift station spare parts inventory

Pumps (Model / Number of Complete Units)

- Flygt Model 3085 (1)
- Flygt Model 3127 (2)
- Flygt Model 3102 (1)
- Flygt Model 3201 (1)

Control & Communications

- HMI – EZ Touch
- UPS - Sola
- VFD – Power Flex
- PLC CPU Module
- Wireless Antenna
- Level Transducers (3)
- Floats (4)

Electrical

- 100 amp Braeker
- 30 amp Breaker
- 24 vDC Power Supply

5.0 Design and Performance Provisions

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

5.1. Updated Design Criteria and Construction Standards and Specifications

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

5.2. Procedures and Standards

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

5.1 Design Criteria & Construction Standards & Specifications

The City's design criteria and Construction standards for sewer mains and laterals are described in the *Engineering Design Standards, December 1992 with Adopted Revisions.* A separate document contains *Standard Plans* for Sewer Laterals, Sewer Manholes, and Rodding Inlets, and other non-sewer related infrastructure. The relevant sections of these documents are included in **Appendix C**. For any particular construction project, the City always has the option to supplement its Design Standards and Standard Details with project-specific requirements which may differ from the Design Standards and Standard Details.

The City's most recent collection system lift station was constructed in 2000. The City does not have a standard specification for lift stations, although it has standardized certain elements of lift station design (e.g., use of Flygt submersible pumps, compatible telemetry and SCADA systems, etc). Any future lift stations will be custom designed by qualified engineers based on site-specific factors and the currently available technology. Such designs will be reviewed and approved by the City Engineer and the Wastewater Treatment Plant Superintendent, who is responsible for lift station maintenance. Because new lift stations are constructed so infrequently, the City does not believe that the development of formal standard design specifications for lift stations represents the best use of City resources.

5.2 Procedures and Standards

A building permit is required for construction or replacement of sewer laterals. The required inspections are conducted by Public Works inspectors. The Engineering Division of Public Works Department provides engineering or engineering oversight, project management and inspection of City-initiated capital improvement projects and developer-initiated public improvement projects that involve construction or replacement of sewer mains, storm drains, and related structures.

Section 13.60 of the City's Ordinance Code requires that "The building sewer and lateral sewer shall be tested in accordance with city standard specifications" These specifications are in Section 5.03.B of the above-referenced *Engineering Design Standards* document.

As noted in Section 4.2, although a property owner owns a building's upper and lower lateral lines that connect to the main sewer, it is the City's policy that if the property owner installs a right-of-way cleanout and a new lateral using approved materials and with a building permit, the City will assume responsibility for maintaining the lower lateral.

6.0 Spill Emergency Response Plan

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

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

The City's *Spill Emergency Response Plan* (SERP) formerly referred to as the Overflow Emergency Response Plan, was updated in July 2023 by DKF Solutions, the Plan's original author. The complete plan is included as Appendix A of this SSMP. Except for coordination with storm drain agencies (discussed in Section 3) the SERP incorporates the above-listed requirements of the General Order. Table 6-1 cross-references the above requirements to the corresponding section of the SERP and to other sections of this SSMP, where applicable.

Appendix D of the SERP, titled *Sewer Spill/Backup Response Workbook* serves as a "field guide" for responders, grouped into eight sections delineated by Tabs, with each section covering a different response activity. The workbook makes extensive use of flowcharts to assist responders through the entire process of identifying spill category, conducting response, spill volume estimation and other necessary documentation, monitoring, notification and reporting, etc. Forms are provided for use in collecting information needed for reporting in CIWQS and for post-spill assessment.

Additional discussion of Water Quality Monitoring (when required) , and of Regulatory Notification, Reporting and Record Keeping requirements are provided in Sections 6.1 and 6.2 below.

Table 6. Response Activities – Cross-Reference to SERP

Procedures to	SERP or SSMP Section
Notify primary responders, appropriate local officials, etc	SERP Section 6.1 - 6.4, SSMP Section 2.4,
Notify other potentially affected entities	SERP Section 8.4, 10.2, SSMP Table 6-2 (below)
Comply with the notification, monitoring and reporting requirements of this General Order	SERP Section 10.2, SSMP Table 6-2 (below)
Ensure that appropriate staff and contractors implement the SERP	SERP Section 12, SERP Appendix C, SSMP Section 4.3
Address emergency system operations, traffic control, etc.	SERP Section 7, SERP Response Workbook
Contain spill and prevent/minimize discharge to waters of the State	SERP Section 7, 8, SERP Response Workbook
Minimize and remediate public health impacts, etc	SERP Section 7, 8.4, 9, SERP Response Workbook
Clean the spill area and drainage conveyance system	SERP Section 7, 8, SERP Response Workbook
Implement technologies, practices, equipment, and interagency coordination, etc.	SERP Section 7.7, 8, SERP Response Workbook
Implement pre-planned coordination and collaboration with storm drain agencies	Discussion below
Conduct post-spill assessments	SERP Section 11, City spill records
Document and report spill events	SERP Section 8, 10, SERP Appendix A, City spill records
Annually, review and assess effectiveness of the Spill Emergency Response Plan	SERP Section 11, SSMP Audits, City records

6.1 Water Quality Monitoring

For sewage spills in which an estimated 50,000 gallons or greater discharge into a surface water, the City is required to conduct water quality sampling as soon as possible but no later than 18 hours after the City's knowledge of a potential discharge to surface water. Refer to Section 9 of the SERP for a thorough discussion of water quality monitoring requirements, including sampling parameters, locations, equipment, laboratory requirements, safety, and other related information. An SOP for surface water sampling is provided in Tab G of the *Sewer Spill/Backup Response Workbook*. A spill technical report must also be submitted as discussed below.

6.2 Regulatory Notification, Reporting and Record Keeping

Spill Documentation

In accordance with the General Order, the City maintains records for each spill. Records include:

- Documentation of spill location, duration and other related information
- Documentation of response steps and/or remedial actions

- Photographic evidence to document the extent of the SSO, field crew response operations, and site conditions after field crew SSO response operations have been completed. The date, time, location, and direction of photographs taken will be documented.
- Documentation of the spill volume, volume recovered, volume that reached surface water, and the methodologies used for how these volumes were calculated or estimated, including all assumptions made.

The Sewer Spill/Backup Response Workbook provides forms that can be used to document information regarding the spill and response activities, and for subsequent use in reporting to the State Water Board's CIWQS database. The specific reporting requirements for each spill category are listed in *Attachment E1 Notification, Monitoring, Reporting, and Recordkeeping Requirements* of the General Order.

Spill Categories

Proper identification of the spill category is essential for regulatory notification/reporting purposes, especially in the case of a Category 1 spills of 1000 gallons or greater which discharge to surface waters, for which notification to Cal OES must be provided within 2 hours of the City's knowledge of the spill. The 2-hr notification requirement also applies to Category 2 spills of 1000 gallons or greater which discharge to Waters of the State, which is defined more broadly than "surface waters" and includes discharges to groundwater.

Spill category definitions are contained in Section 1.4 of this SSMP, Section 3 of the SERP, and in Section 5.13.1 of the General Order. (The same definitions appear in each of these locations).

Spill Notification and Reporting

Spill notification and reporting in CIWQS is usually handled by the Maintenance Superintendent (who serves as the primary LRO) so as to ensure consistency among reports and over time. Field Maintenance Staff (i.e. the response team) are trained in notification requirements in the event the Maintenance Superintendent is unavailable. The WWTP Superintendent is also a designated LRO and is familiar with spill reporting in CIWQS.

Spill notification and reporting requirements are summarized by spill category in a series of tables in Section 10.2 of the SERP. These tables replicate tables in *Attachment E2- Summary Of Notification, Monitoring And Reporting Requirements* of the General Order. Table 6-2 below, replicated from Attachment B-1 of the *Sewer Spill/Backup Response Workbook*, summarizes the Spill Notification and reporting requirements.

The specific reporting requirements for each spill category are listed in Appendix A of the SERP, which replicate the listings in *Attachment E1 - Notification, Monitoring, Reporting, and Recordkeeping Requirements* of the General Order. In addition, the State Water Board's web site for the sewer overflow program provides *Guidance For Reporting Category 1 Spills in the California Integrated Water Quality System (CIWQS).* This document walks through the entire process for logging into CIWQS and initiating, certifying and amending a spill report, a flowchart for determining the correct spill category, and additional guidance for each of the items required in the spill report. The document can be downloaded for quick reference. An older (2013) guidance document for CIWQS reporting is also available *at CIWQS Enrollee's Guide to the SSO Database*, but may not exactly match the current CIWQS screens.

For reporting purposes, if one spill of whatever category results in multiple appearance points from the sewer system, a single spill report should be submitted into CIWQS that includes the GPS coordinates for the location of the spill appearance point closest to the failure point and descriptions of the locations of all other discharge appearance points.

A Spill Report does not have to be completed in CIWQS in one sitting. Incomplete reports can be saved in CIWQS by hitting the "Save Work in Progress" button on the report screen. Upon re-entering CIWQS, the program provides the necessary tools to locate a previously saved draft report. If spill information is entered into CIWQS by a Data Submitter, the Data Submitter can complete a draft spill report and click on the "Ready to Certify" button. The LRO will receive an automated email notification that a spill report is ready for certification.[1]

Reporting of Sewer Lateral Spills

Refer to Section 4.2 of this SSMP for a discussion of ownership and responsibility for maintenance of private laterals. If the City determines that a private lateral spill was caused by a failure of the City's sewer system (e.g., a main blockage that caused a spill from a lateral) or from a blockage in a lower lateral for which the City has taken responsibility for maintenance, then the spill should be reported in CIWQS under the appropriate category.

The City does **not** report private lateral spills that are not caused by a failure of the City sewer system, or from lower laterals for which it has not taken responsibility for maintenance.

Spill Report Certification

Spill reports can be submitted in CIWQS by any designated Data Submitter, but only the designated LRO(s) can certify reports. The City's current LRO is listed in Section 2.1.

The CIWQS Spill Report details the process for submitting a certified spill report. The process is well described in the above-referenced guidance document.

Amending a Spill Report

A certified Spill Report can amended in order to correct or add additional information **within 90 calendar days** of the spill end date, by amending the original report or by adding an attachment to the Spill Report in CIWQS. The amended report must again be certified. **After 90 calendar days**, the City must contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The LRO must submit justification for why the additional information was not reported within the amended Spill Report due date.

Spill Technical Report for Category 1 Spills Greater Than 50,000 gallons

For any spill in which 50,000 gallons or greater discharge into a surface water, the City is required to submit a Spill Technical Report **within 45 days** of the spill end date. Refer to Section 9.14 of the SERP or to Section 3.1.3 of *Attachment E1 Notification, Monitoring, Reporting, and Recordkeeping Requirements* of the General Order for the information that must be included in the report.

[1] This statement applies specifically to Category 1 spills. Procedures may be different for other spill categories.

Annual Reporting

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

The Annual Report is generated through an interactive process on the State Board Web Site. After logging into the City's CIWQS account, Click on "Sanitary Sewer Systems" and then "Annual Report". A document to aid in preparing the report is available at Guidance For Submitting The Annual Report In The California Integrated Water Quality System (CIWQS).

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

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

The graphs are generated by CIWQS based on historic spill data submitted by the City. Refer to the above-referenced Guidance Document for the process of generating and attaching the graphs to the Annual Report.

Record Keeping

In addition to spill documentation referred to above, the City maintains records of all sewer calls that it responds to whether or not they turn out to be actual spills, or whether it is a private issue. Refer to SERP Section 10.3

Records are also kept for all training that is provided in support of this Plan. The records for all scheduled training courses and for each overflow emergency response training event and will include date, time, place, content, name of trainer(s), and names and titles of attendees.

Coordination with Storm Drain Agencies

The Maintenance Division's Streets and Storm Drains Section has responsibility for O&M of the City's stormwater drainage system. The Streets and Storm Drains Section is closely aligned with the Wastewater Collections Section. Both Sections operate out of the Benicia Corporation Yard, under the direction of the Maintenance Superintendent, and share administrative staff and other resources. Thus coordination with the storm drain agency for spill response is automatic.

Table 7. Summary of Notification & Reporting Requirements

Deadline	Category 1 Spill*	Category 2 Spill**	Category 3 Spill**	Category 4 Spill**
2 hours after awareness of spill	Within two (2) hours of the City'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 City'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.	-	-
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 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 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.

++ Agency owned lateral spills (Cat 2-4) to be reported by Feb 1 of the following year.

- **Monthly Spill Reporting of 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.

- **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.

7.0 Blockage Control Program

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

The procedures must include, at minimum:

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

The Blockage Control Program (formerly FOG Control Program) was formally developed as an element of the SSMP. Many of the required program components were already in place as part of the City's routine sewer system maintenance. The program continues to emphasize FOG as the potential source of blockages.

The Blockage Control Program consists of the following components:

- Public education and outreach
- Legal authority to prohibit illegal discharges, and discharges of FOG, debris, and material that could cause blockages that could result in a spill,
- Require installation of grease removal devices and a means to standardize their installation,
- Authority to inspect grease-producing facilities and enforce noncompliant facilities,
- Identification of locations subject to FOG and other blockages and establishment of maintenance schedules, and,
- Development and implementation of source control measures for all FOG discharged to the sanitary sewer system.

The following discussion expands upon how these components are implemented.

Public Education and Outreach

The City's primary avenue for distributing public outreach material will continue to be at local community events. City staff attend City events such as Farmer's Markets to provide public education to residents and visitors to the City and to distribute outreach materials including FOG outreach promotional items. The City proactively manages potential FOG sources through outreach during pretreatment inspections, providing outreach materials as needed. The City also participates in regional FOG public outreach activities through the Bay Area Pollution Prevention Group (BAPPG) and the Bay Area Clean Water Association (BACWA).

Legal Authority

The City has legal authority to prohibit discharges to the system and identify measures to prevent blockages and spills caused by FOG. Benicia Municipal Code Section 13.50 provides the City authority to enforce illegal discharges of FOG to the collection system and as a mechanism to develop and issue permits if needed.

Additionally, the City uses elements of the 2022 California Plumbing Code Section 1009, 1014 and 1015 for newly constructed or permitted facilities when installation of interceptors or grease removal devices is deemed necessary by the City.

Identification of FOG Blockages and Establishment of Maintenance Schedules

The City is required to identify locations of FOG blockages and establish a routine maintenance schedule to help avoid spills. In 2009, during the initial development of the FOG Control Program, City staff identified "hot spots" (an identifiable location of (a) sanitary sewer overflow(s) that requires repeat maintenance due to controllable upstream influences). These "hot spots" were subsequently reviewed interdepartmentally to determine potential causes and solutions for prevention. It was determined that each location was the result of a combination of piping deficiencies (e.g. inadequate slope, a "belly" in the pipeline), roots, or FOG. Although FOG was witnessed at various locations, it was not solely responsible for spills at any of the originally identified locations. It was determined that none of the original locations met the criteria for a FOG "hot spot", and that the best mechanism for preventing spills at these locations was accelerated cleaning by the Maintenance Division rather than reliance upon FOG removal devices at a limited number of commercial establishments. The "2009 hot spot" list was subsequently revised and is shown in the attached spreadsheet now referred to as "Watch Areas" (Table 8). There are currently no identified hot spots in the City, however, the City continues to evaluate areas in the city where FOG blockages may occur and monitor watch areas. Water Quality Division staff works directly with Public Works Maintenance Division to evaluate conditions and updates the watch area spreadsheet based on observed conditions. City staff will evaluate maintenance/cleaning frequencies and make adjustments to those frequencies as needed.

In addition to the Watch Areas listed in Table 8, a number of locations are on an accelerated cleaning schedule because of other factors that either have caused spills or have been deemed to have potential for causing spills.

FOG Source Control Program

The City's current FOG source control program consists of the above-described public outreach and education and the requirement to install grease removal devices for new businesses and tenants who make major improvements to their site that produce FOG

Previously the City's source control program also included food service establishments (FSEs). In November 2009, the City held two FOG trainings for restaurants that were in the previously identified "hot spots" service area. Fourteen of the twenty restaurants invited to the training attended. The previously identified hot spots were subsequently removed from the hot spot list for reasons described above. With no current "hot spots" identified in the City's service area, the staff identified food service establishments (FSEs) with large in-ground grease interceptors to target for source control. Each permitted FSE is inspected annually. During inspections staff reviews grease interceptor inspection and maintenance logs, distributes FOG outreach material and tours the facility to ensure compliance. Additional FSEs may be targeted in the future for source control activities such as inspections and distribution of FOG BMPs if "hot spots" are identified.

Table 8. FOG Watch Areas

Location	Customer Class (residential or commercial)	Type of infrastructure (pipeline or lift station)	Cause (FOG, roots, engineering deficiency, infrastructure problem)	Corrective Action
Restaurant (4) - Columbus Pkwy	Commercial (Restaurant)	Grease Interceptor	Grease	Water Quality Technician requires businesses to clean grease interceptor twice per year and maintain the records for 3 years. The WQ Technician inspects each business once per year to verify that the cleanings have been completed.
Restaurant (4) - East 2nd St	Commercial (Restaurant)	Grease Interceptor	Grease	
Restaurant - Goodyear Rd	Commercial (Restaurant)	Grease Interceptor	Grease	
Food Service/grocery - Southampton Rd	Commercial (Restaurant)	Grease Interceptor	Grease	
Restaurant (5) - Southampton Rd	Commercial (Restaurant)	Grease Interceptor	Grease	
Restaurant - Military West	Commercial (Restaurant)	Grease Interceptor	Grease	
Food Service/Grocery- Solano Square	Commercial (Restaurant)	Grease Interceptor	Grease	
Restaurant (4)- 1st Street	Commercial (Restaurant)	Grease Interceptor	Grease	
Food Service/Manufacturing Park Rd	Commercial (manufacturing)	Grease Interceptor	Grease	
First and B St./East 2nd and B St. 123 First St. to East 2nd and B St. L/S	Commercial and Residential	8" main and lift station	Flat - FOG	Enhanced CCTV freq. Increase targeted cleaning schedule as needed.
510 East Channel Rd. Manhole #716	Commercial	12" main	Belly - FOG	Bi-annual cleaning CIP WWO63 "East Channel Road Sewerline Replacement" is on the future CIP list for FY 2016-2031.
350 Raymond Dr. Manhole #157	Residential	8" main	Eng - FOG	Quarterly cleaning
Lower Bolton Circle and Rose Dr. Manhole #844	Residential	8" main	Infras - FOG	Bi-annual cleaning
141 East F St. (@ 2nd St.)	Residential (w/ predominately commercial flow)	6" main	Belly - FOG	Bi-annual cleaning
1032 West 5th St. (Continental) Manhole #242	Residential	6" main	Flat - FOG	Quarterly cleaning
1421 East 5th St. (Alley 400 block East N) Manhole #096	Residential	6" main	Old infrastructure plus nearby businesses have changed over the years - FOG	Quarterly cleaning

8.0 System Evaluation Capacity Assurance and Capital Improvements

The Plan must include procedures and activities for:

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

8.1 System Evaluation and Condition Assessment

The Plan must include procedures to:

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

8.2. Capacity Assessment and Design Criteria

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

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

The capacity assessment must consider:

- *Data from existing system condition assessments, system inspections, system audits, spill history, and other available information;*
- *Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions;*
- *Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;*
- *Increases of erosive forces in canyons and streams near underground and above-ground system components due to larger and/or higher-intensity storm events;*

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

8.3. Prioritization of Corrective Action

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

8.4. Capital Improvement Plan

The capital improvement plan must include the following items:

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

8.1 Condition Assessment

As noted in Section 4 of this SSMP, the City uses the results of CCTV Inspection and the related PACP ratings, along with other factors to prioritize CIP repair/replacement projects. The Capital and Operating budget allocates approximately $800,0000 annually for the sewer rehabilitation, in addition to allocating funds for specific projects

The June 2020 Wastewater Master Plan Update and Major Facility Condition Assessment, which updated the City's 2011 Wastewater Master Plan, included condition assessments of the wastewater collection system (documented in TM-5) and lift stations (TM-6). The Executive Summary from the 2020 Master Plan Update is posted on the City's Public Works web site. TM-5 presented a prioritized list of 24 potential projects based on condition rating, estimated remaining useful life, probability of failure, consequence of failure and overall risk of failure. Considerations of whether a failure would have a high level of environmental consequences weighed heavily into the risk analysis. The potential impact of climate change also weighed into the risk analysis, as in the case of West H St. Shoreline Stabilization project (#21)[2]. The locations of recommended projects are shown in Figure 7. A summary listing of the projects is included in Ap**pendix E**. Detailed descriptions are provided in TM-5. In 2025, City staff reviewed and reprioritized the recommended projects and added several projects to the list. The results of that review are also included in **Appendix E**. Several of the identified projects have been completed, and several others are on the current CIP implementation list presented in Section 8.4. The recommendations will continue to guide the selection of CIP projects in future years.

A similar methodology was used to evaluate the City's lift stations. Specific recommendations were then developed for each pump station and are included in TM-6.

[2] The West H. St. main segment was deemed to be in satisfactory conditions, but determined to be particularly vulnerable to sea level rise.

FIGURE 5-1
WASTEWATER COLLECTION SYSTEM RECOMMENDED PROJECTS
CITY OF BENICIA - WASTEWATER MASTER PLAN (TM No. 5 CONDITION ASSESSMENT OF WASTEWATER COLLECTION SYSTEM)

Figure 7. Recommended Collection System Capital Projects

8.2 Capacity Assessment and Design Criteria

The City's 2011 Wastewater Master Plan included a hydraulic model of the City's wastewater collection system using H20Map SWMM. As a result of the model's findings, six sections of the collection system were identified that had capacity deficiencies at buildout peak wet weather flows. The criteria for identifying capacity deficiencies was established as being where the surcharge level (hydraulic grade line) comes within 4 feet of the ground surface for buildout peak flows. Three of those six sections identified in the existing Wastewater Master Plan are included in TM-5 as proposed projects since they had not yet been completed. Those projects include sewer improvements in the following locations:

- East Channel Road (#16)
- I-780 Crossing at West 7th Street (#17)
- Rose Drive/London Circle (#18)

Capacity concerns associated with the East Channel Road project were based on expected increases in flow from development in the Benicia Industrial Park that have not occurred. In general, hydraulic deficiencies are not a significant contributor to spills, largely due to capacity-related improvements implemented prior to 2007. The capacity-related spill that occurred in 2021 was associated with the extreme storm even of October 2021, which has been characterized as 50-100 year event. An event of this magnitude exceeded the criteria used to estimate peak wet weather flows for the Master Plan's hydraulic model.[3]

8.3 Prioritization

The above-described condition and capacity assessments are used to prioritize corrective actions. The likely severity of potential spills (e.g., potential volume, proximity to surface waters) is a key factor taken into account in the prioritization process. High priority is afforded to defective lines that are within 200 feet of surface water.

Lower than expected increases in sewer flows resulting from the absence of significant development at the Benicia Industrial Park and structural water conservation measures provide some buffer against the impacts of climate change, although this is not likely to remain the case in the long term. Ongoing investment in projects to minimize inflow & infiltration and/or to provide increased capacity will be necessary. Potential damage to sewer infrastructure from sea level rise and flooding along the margins of the Bay is a recognized problem and a major consideration in prioritization of CIP projects.

8.4 Capital Improvement Plan

City Public Works staff biannually prepares/updates a list of desired capital improvements to address identified wastewater collection system condition and capacity issues. The proposed projects are incorporated in the City biannual budget and are funded from user charges and

[3] The criteria was based on a 10-year design storm with 30-hour duration, producing a total rainfall of 3.75 inches and a peak 15-minute rainfall of 0.49 inches. Refer to Section 4 of the 2011 Wastewater Master Plan for additional details regarding the hydraulic model.

capacity fees. These projects often span several years based on funding, engineering/design, and construction. City Council adopted the FY 2025-2026 and FY 2026-2027 City budget on June 17, 2025.

On November 16, 2021, City Council approved 5-year water and sewer rate increases. The wastewater rate increases are approximately 3% each year over a five-year period. The annual increases were scheduled for January 1 of each year with a final increase January 1, 2026. City staff will initiate a Prop. 218 rate process in 2026, targeting an initial rate increase starting in 2027. The City remains committed to addressing the needed infrastructure improvements over time.

Collection System CIP projects included in the City's adopted FY 2025-2026 and 2026-2027 budget are listed in Table 9. The projects will not necessarily be completed within that time frame.

Table 9. Approved Collection System CIP Projects for FY 2025/26 – FY 2026/27

Project Name	Budgeted Amount	Project ID in 2020 Condition Assessment Report
Annual Sewer Rehabilitation	$830,000/yr	
West H Shoreline Stabilization	$1,650,000	#21, West H St.
E. 7th St to WWTP Headworks Sewer Replacement	$3,450,000	#19, Bayshore Rd.
Bayshore Road Force Main Sanitary Sewer Crossovers	$900,000	

8.5 Resiliency Considerations

The City's October 2016 Climate Change Adaptation Plan - Preparing Benicia for a Resilient Future examined impacts of seal level rise/flooding on City infrastructure, and identified areas most vulnerable to these impacts including wastewater treatment plant, storm water drainage system, and by inference, sewer lines in the vulnerable areas. Collection system infrastructure prone to impacts of sea level rise are the waterfront area south of the downtown area/treatment plant, and inland lines in the vicinity of Sulphur Springs Creek which borders the Benicia Industrial Park area. The report developed a number of potential adaptation strategies to guide future efforts by the City and State and Regional partners.

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

9.0 Monitoring, Measurement, and Program Modifications

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

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

9.1 Adaptive Management

The City's SSMP is intended to be a living document that, at a minimum, is updated at the frequency specified in the General Order. The SSMP Audit (Section 10) is used as an aid to evaluate SSMP effectiveness and to guide any needed changes to procedures and activities documented in the SSMP. The specific performance indicators described in the following section.

9.2 Performance Indicators

A number of performance indicators are tracked by the City for purposes of evaluating the long-term effectiveness of the SSMP elements described in this Plan. Some of these indicators could be expected to relate directly to specific elements or O&M activities, whereas others relate to multiple activities or program effectiveness as a whole. For example, it may be possible to correlate the number of blockages attributed to roots with the total annual footage (or multi-year cumulative footage) of sewer lines subject to rodding conducted as part of the City's preventative maintenance program (see Section 4). In contrast, the volume of spills reaching surface waters would more likely reflect multiple maintenance activities, emergency response times, the FOG program and even uncontrollable factors.

Table 9-1 lists the quantitative indicators that are currently tracked by the City. The data for these indicators appear in Table 1 of the SSMP Audit, included in Appendix F. Selected spill indicators are also trended in charts that are part of the audit report. Performance measures related to maintenance activities (e.g., cleaning and CCTV footages) are tracked in the CMMS, which can generate reports on demand.

Table 10. SSMP Performance Indicators

Indicator
Number of SSOs (total)
Wet season SSOs[1]
Dry season SSOs[1]
Number of SSOs (by cond.at time of SSO)
Wet Conditions
Dry Conditions
Number of SSOs (by volume range)
< 10 gal
10 – 99 gal
100 – 999 gal
1000 – 9999 gal
≥10,000 gal
Total SSO Volume (A)
Volume reaching waters of the State (B)
Volume not contained but not reaching waters of the State (A-B-C)
Volume recovered (C)
Net volume (total minus recovered) (A-C)
Number of SSOs per 100 miles of sewer/year[2]
Volume of SSOs per 100 miles of sewer/year[2]
Total Volume conveyed to the plant (mil gal)
Total volume SSO / Total volume conveyed, gallons / million gallons
Number of SSO (by cause)
Blockages
Roots
Grease
Debris - General
Debris - Construction (added 2014)
Debris - Rags (added 2014)
Debris from Laterals
Other (added 2014)
Multiple causes
Infrastructure failure
Inflow & Infiltration
Electrical Power Failure
Flow Capacity Deficiency
Natural Disaster
Bypass
Cause Unknown
Average Emergency Response Time, minutes[2]
Business Hours
Non-business hours
Number of locations with multiple SSOs
Maintenance Activities
Footage Cleaned (linear feet)[6]
Top-down Cleaning (linear feet)[6]
Targeted Cleaning – added 2018 (LF)[3]
Televised Inspection (number through 2017, LF 2018-2019)
Manholes Repaired (number)

Notes for Table 10:

1. Wet season defined as Nov-April, dry season May-Oct. **This seasonal categorization does not necessarily reflect weather or flow conditions at the time of the SSO.**

2. From time SSO call received by PW Maintenance Division
3. Footage cleaned refers to biannual and quarterly maintenance cleanings of specific problem areas. Top-down cleaning refers to cleaning of the entire system done in conjunction with CCTV.

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

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

Sewer System Agency Name: City of Benicia

Collection System Agency Name: Benicia City CS

WDID: 2SSO10095

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

9.3 SSMP Updates and Modifications

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

- The Public Works Maintenance Superintendent is tasked with overall responsibility for maintaining and updating the SSMP.
- The Public Works Administrative Analyst assists the Maintenance Superintendent in coordinating City staff and outside consultants for the SSMP updating and auditing process, collecting needed information from other City Departments, preparing and posting the final versions on the City's web site, and other administrative tasks.
- The WWTP's regulatory consultant's annual contract includes a task for providing ongoing technical support for collection system activities, including SSMP maintenance, audit coordination, and tracking state and regional developments related to the SSMP.
- A number of the activities described in the SSMP reflect ongoing City programs for which the review and update process is well established. Examples include preventative maintenance (PM) measures, staff training, outreach, inspection and testing. The City is accustomed to requirements that require annual review and updating of key documents (e.g. NPDES permit requirements for annual review/update of the treatment plant O&M Manual and Contingency Plan).
- The General Order requires that the City conduct an internal audit of the SSMP at least every three years as described in Section 10.0 below.
- In addition to periodic audits, the General Order requires that the SSMP be updated every six years. The next update is due August 2, 2025. Minor revisions and updates may be

made on a more frequent basis, either to the document itself or its Appendices, or as an addendum. A log of all SSMP changes is maintained in Appendix G.

9.4 Annual Report

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

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

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

10.0 Internal Audits

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

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

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

The Enrollee shall submit a complete audit report that includes:

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

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

In accordance with the General Order, audits must be completed every three years. The end of the last 3-year audit period was August 2, 2024. The audit was submitted in CIWQS within six months of that date (i.e. by February 2, 2025). The next audit period will cover the three-year period through August 2, 2027, with submittal due by February 2, 2028. A copy of the most recent SSMP audit is included in **Appendix E**.

11.0 Communication Program

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

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

The City's Communication Program is designed to communicate regularly with the Public on SSMP, provide opportunities for public comment and input, communicate with plumbers and contractors whose actions could potentially result in a sewer overflow, and communicate with other local agencies. The Communication Program is a relatively modest effort that reflects what City staff can realistically achieve, given available resources and priorities. Table 11 and its accompanying notes document Communication Program activities.

Table 11. Communication Program Activities

Activity/Best Management Practice	Stakeholder	Frequency
Update SSMP and SSMP webpage[1]	All	As needed
Present Updated SSMP for Certification[2]	City Council	Every 6 years or when significant updates are needed
Communicate with public regarding closures, etc.[3]	All	As needed
Promote Spill Awareness. Distribute Spill Prevention and Pollution Prevention Materials (BMPs for FOG, etc)[4]	All	Ongoing
Conduct In-ground Grease Interceptor Inspections[5]	Affected Facilities	Annually

Notes:

1. The City's SSMP Webpage is updated as new information is available, such as when the SERP or other procedures are revised, new policies are developed, or new regulatory information is received. The web site has contact information for the Public Works Management Analyst, who will respond to public inquiries or direct them to the appropriate person(s).
2. The SSMP will be represented to the City Council for recertification every six years or when significant updates are made. The public has the opportunity to comment on proposed updates at recertification hearings.
3. The Collections Crew posts barricades or signs at spill sites while cleanup efforts are in progress. The Fire Department posts non-emergency messages through its Incident Notification system on Nextdoor, Facebook and Instagram, or via email or phone if an individual has signed up to receive such notices. Emergency notifications are sent to registered users through the Alert Solano System.

4. Promotional opportunities include the summertime Farmer's Markets, Earth Day, and Library and City Hall displays.
5. As part of the Pretreatment Program, the Water Quality Technician conducts an annual inspection of restaurants that discharge through inground interceptors prior to the City's collection system. During inspection, proper BMP materials are distributed and maintenance records are reviewed and collected.
6. Informational materials such as handouts or pamphlets are distributed at community events and are included in utility bills. Public Service Announcements are posted on the City's website. The Building Division staples a handout to permits issued for sewer line replacements.
7. The City may periodically distribute Plumber/Contractor outreach materials developed by BACWA.

12.0 SSMP Approval and Certification

SSMP elements were originally completed and certified according to the schedule included in the Order 2006-003-DWQ. A resolution approving the SSMP was adopted by the City Council at its July 21, 2009 meeting. A copy of the resolution, and of the subsequent resolutions approving the 2014 and 2020 updates are included in Appendix F.

The General Order requires that the SSMP be updated and certified every six years. For systems such as the City of Benicia serving a population between 100,000 and 10,000, the next update/certification is due by August 2, 2025. The updated SSMP itself must also be uploaded into CIWQS by that date.[4]

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