



SEWER SYSTEM MANAGEMENT PLAN

City of Sausalito
Updated January 2014

Prepared by



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Sewer System Management Plan LIST OF ACRONYMS

SSO	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
WDID	Waste Discharger Identification Number
WDR	General Waste Discharge Requirements
WWTP	Wastewater Treatment Plant



LIST OF TERMS

Bay Area Clean Water Association (BACWA) – Association comprised of Bay Area wastewater treatment and collection system agencies. BACWA represents the interests of public wastewater agencies in regulatory matters and to support the exchange of information.

Website: <http://www.bacwa.org>

Blockage – An object that partially or fully hinders flow through a sewer pipeline. The blockage can be caused by debris in the sewer, grease buildup, root intrusion, or a partial or full collapse of the pipeline. Also known as a stoppage.

California Association of Sanitation Agencies (CASA) - A non-profit, statewide association representing public agencies that provide wastewater collection, treatment, disposal, and/or water reclamation services to California agencies. Website: <http://www.casaweb.org>

California Integrated Water Quality System (CIWQS) – A computer system used by the State and Regional Water Quality Control Boards to track information about SSOs, among other information. CIWQS is the tool used for online submittal of SSO details, which are then made available to the public. Website: <http://www.swrcb.ca.gov/ciwqs/>

California Water Environment Association (CWEA) – The statewide association of wastewater professionals that trains and certifies wastewater professionals, disseminates technical information, and promotes policies to protect and enhance the environment.

Website: <http://www.cwea.org>

Enrollee – The legal public entity that owns a sanitary sewer system, as defined by the Statewide WDR. Also known as a sewer system agency or wastewater collection system agency.

FOG Control Program – Program implemented at the discretion of the agency, based on the identified causes of sewer overflows, to reduce the discharge of fats, oils and grease into the sewer system.

Geographical Information System (GIS) – A database linked with mapping that records sewer system information. The GIS database could include sewer features such as pipe location, diameter, material, condition, or last date cleaned or repaired. GIS maps also typically contain base information such as streets and parcels.

Governing Board – Sausalito City Council.

Groundwater Induced Infiltration (GWI) – Infiltration attributed to groundwater entering the sewer system.



Infiltration – The seepage of groundwater into a sewer system, including service connections. Seepage frequently occurs through defective or cracked pipes, pipe joints, connections or manhole walls and joints.

Inflow – Water discharged into a sewer system from such sources as roof leaders, cellars, yard and area drains, foundation drains, through holes in manhole covers, cross connections from the storm system or street wash waters. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than a leak through defects in the sewer.

Lateral or Private Lateral – The privately-owned sewer pipeline that conveys wastewater from the premises of a user to the City’s sewer system. The upper lateral extends from the building to property line (or easement line). The lower lateral extends from the property or easement line to the connection to the pipe.

Monitoring and Reporting Program - The program used by the City to monitor, maintain records, report issues and complete needed public notifications.

Overflow Emergency Response Plan – This document identifies measures that are needed to respond to sanitary sewer overflows in a way that maximizes the protection of public health and the environment.

Preventive maintenance (PM) – Regularly scheduled servicing of machinery, infrastructure or other equipment using appropriate tools, tests, and lubricants.

R-Value – The amount of rainfall that reaches the collection system via infiltration and inflow. This value is typically expressed as a percentage of total rainfall volume that reaches the collection system.

Rainfall Dependent Infiltration and Inflow – Infiltration and Inflow that is attributed directly to rainfall R-Value.

Regional Water Quality Control Board –San Francisco Bay Area Regional Water Quality Control Board, also known as the Regional Board or Region 2.

Rehabilitation and Replacement Plan (also referred to as a Capital Improvement Plan) – Identifies and prioritizes system deficiencies and implements short-term and long-term rehabilitation actions to address each deficiency.

San Francisco Bay Regional Water Quality Control Board – Also known as Region 2 or RWQCB. This regulatory agency preserves, enhances and restores the quality of California's water resources, and ensures their proper allocation and efficient use for the benefit of present and future generations. Website: <http://www.waterboards.ca.gov/sanfranciscobay>



Sanitary Sewer Overflow (SSO) – Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system, including overflows or releases that reach waters of the United States, overflows or releases that *do not* reach water of the United States, and backups into buildings and/or private property caused by conditions within the publicly owned portion of the sewer system.

Sanitary Sewer System – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the wastewater treatment plant.

Satellite Collection System – The portion, if any, of a sanitary sewer system that is owned or operated by a different public agency or user.

Sewer System Management Plan – A series of written programs that address how a collection system owner/operator conducts daily business. Each SSMP is unique for an individual discharger. The plan includes provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit.

State Water Resources Control Board – Also called the State Board. This agency developed and passed the Statewide Waste Discharge Requirements for collection systems and maintains the SSO reporting web site.

System Evaluation and Capacity Assurance Plan – A required component of an agency's SSMP that provides hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event.

Statewide Waste Discharge Requirements – The Statewide General Waste Discharge Requirements for Sanitary Sewer Systems was adopted by the SWCRB in 2006 to provide a structure and guidance for SSMP development. Also known as Order No. 2006-0003-DWQ.

Wastewater Collection System – See Sanitary Sewer System.



Sewer System Management Plan LIST OF TERMS

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City of Sausalito Sewer System Management Plan

Executive Summary



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EXECUTIVE SUMMARY

This Sewer System Management Plan (SSMP) has been prepared in compliance with requirements of the San Francisco Bay Regional Water Quality Control Board (RWQCB) pursuant to Section 13267 of the California Water Code, and the State Water Resources Control Board (SWRCB) Order No. 2006-0003-DWQ as amended by Order No. 2013-0058-EXEC.

ES-1 Background

On July 7, 2005, the RWQCB issued a letter to the San Francisco Bay Region (Region 2) sewer collection system agencies, including the City of Sausalito (City), that required the City to prepare an SSMP. At the same time, the RWQCB released an SSMP Development Guide that was prepared in cooperation with the Bay Area Clean Water Agencies (BACWA). The 2005 directive stated that the City must also comply with RWQCB sanitary sewer overflow (SSO) electronic reporting requirements issued in November 2004.

Similarly, on May 2, 2006, the State Water Resources Control Board (SWRCB) issued a directive through Order No. 2006-0003-DWQ to require all public wastewater collection system agencies in California with greater than one mile of sewers to be regulated under General Waste Discharge Requirements (Statewide WDR). Portions of this Order related to monitoring and reporting were amended by Order No. 2013-0058-EXEC, dated July 30, 2013. The SWRCB SSMP requirements are similar to those of the RWQCB but differ in organization and some details.

The intent of this SSMP is to meet the requirements of both the RWQCB and the Statewide WDR. The organization of this document follows the requirements of the Statewide WDR. This SSMP is made available through the City's website: www.ci.sausalito.ca.us. The City's waste discharger identification number (WDID) in the California Integrated Water Quality System (CIWQS) is 2SSO10114.

ES-2 City of Sausalito Service Area

The City is located approximately 10 miles north of San Francisco, north of the Golden Gate Bridge in southern Marin County. The City is approximately 2.2 square miles in area, 1.8 square miles of which is on land. The City provides sewer service to a population of 7,061, based on 2010 census data. The City's sanitary sewer collection system serves approximately 4,000 equivalent dwelling units (EDUs) and 200 non-residential customers through 28 miles of gravity sewer pipes. In addition, the City owns three pumping stations that are operated and maintained by Sausalito Marin City Sanitary District (SMCSD). Wastewater is conveyed to SMCSD for treatment and discharge through a deepwater discharge to the San Francisco Bay.



Sewer System Management Plan EXECUTIVE SUMMARY

The City conveys average dry weather flow of approximately 0.034 million gallons per day (mgd), as determined through flow monitoring that was conducted in 2009 for the Capacity Assurance Report (October 2010).

Figure ES-1 shows the City boundary, which also comprises the City's wastewater service area.

Figure ES-1. City of Sausalito Service Area



ES-3 SSMP Objectives

The objectives of the SSMP are to accomplish the following:

1. Establish goals that align the City's sewer collection system operation, management and capacity assurance activities in a manner that achieves the intended purpose of this SSMP
2. Comply with the RWQCB SSMP Develop Guidelines and Statewide WDR through provision of the following:
 - Elements I through XI, following the outline of the Statewide WDR, including a description of the regulatory requirements and a summary of existing and planned documents and plans related to each element



Sewer System Management Plan EXECUTIVE SUMMARY

- Appendices that are amended over time to reflect changes in contact personnel, job descriptions, policies, procedures and programs

Table ES-1, shown on the following page, identifies the objectives that must be addressed to comply with each SSMP element.



Sewer System Management Plan EXECUTIVE SUMMARY

Table ES-1. SSMP Objectives

Element	Objective
I. Goals	<ul style="list-style-type: none"> • Properly manage, operate and maintain the collection system • Provide capacity to convey base and peak flows • Minimize the frequency and severity of SSOs • Mitigate the impact of SSOs
II. Organization	<ul style="list-style-type: none"> • Identify agency staff responsible for the SSMP • Identify chain of communication for responding to and reporting SSOs
III. Legal Authority	<ul style="list-style-type: none"> • Control I/I from the collection system and laterals • Require proper design and construction of sewers and connections • Require proper sewer installation, testing and inspection • Ability to impose source control requirements
IV. Operation and Maintenance Program	<ul style="list-style-type: none"> • Maintain up-to-date maps • Allocate adequate resources for system operation and maintenance • Prioritize preventative maintenance activities • Identify critical equipment and spare parts to minimize equipment and/or facility downtime • Provide staff training on a regular basis
V. Design & Construction Standards	<ul style="list-style-type: none"> • Identify minimum design and construction standards and specifications • Identify procedures and standards for inspecting and testing
VI. Overflow Emergency Response Plan (OERP)	<ul style="list-style-type: none"> • Provide SSO notification procedures • Develop and implement a plan to respond to SSOs • Develop procedures to report and notify SSOs • Develop procedures to prevent overflows from reaching surface waters, and to minimize or correct any adverse impact from SSOs
VII. FOG Control Program	<ul style="list-style-type: none"> • Develop a Fats, Oil and Grease (FOG) control plan, if needed
VIII. System Evaluation and Capacity Assurance	<ul style="list-style-type: none"> • Establish a process to assess the current and future capacity requirements • Implement a capital improvement plan to provide hydraulic capacity
IX. Monitoring, Measurement and Program Modifications	<ul style="list-style-type: none"> • Measure the effectiveness of each SSMP element • Monitor each SSMP element and make updates as necessary
X. SSMP Audits	<ul style="list-style-type: none"> • Conduct a bi-annual audit that includes deficiencies and steps to correct them
XI. Communication Program	<ul style="list-style-type: none"> • Communicate with public (Customers) on SSMP development, implementation and performance and create a plan for communication with tributary/satellite sewer systems



City of Sausalito Sewer System Management Plan

Element 1 SSMP Goals



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ELEMENT 1 - GOALS

The purpose of this section is to identify the goals that the City has established for its SSMP. These goals are intended to define a program that promotes continuous improvement in the City's existing wastewater collection system management and maintenance processes.

1.1 RWQCB and SWRCB SSMP Requirements

Requirements for the Goals element of the SSMP are described in the RWQCB SSMP Guidelines and SWRCB Statewide WDR as follows:

1.1.1 RWQCB Requirement

The City must develop goals to manage, operate, and maintain all parts of its collection system. The goals should address the provision of adequate capacity to convey peak wastewater flows, as well as a reduction in the frequency of SSOs and the mitigation of their impacts.

1.1.2 SWRCB Requirement

The City must develop goals to properly manage, operate, and maintain all parts of its wastewater collection system in order to reduce and prevent SSOs, as well as to mitigate any SSOs that occur.

1.2 City of Sausalito Goals

The goals of the City's SSMP are to accomplish the following:

- To properly manage, operate, and maintain all parts of the wastewater collection system, so as to preserve and protect the public's investment in that system
- To provide adequate capacity to convey peak flows to the SMCSD treatment plant
- To minimize the frequency and duration of SSOs, including implementing regular, proactive maintenance of the system to remove issues that may cause sewer backups or SSOs
- To mitigate the impact of SSOs on public health and the environment
- To respond quickly and respectfully to public notifications of SSOs or other collection system problems
- To collect complete and accurate information regarding SSOs for reporting to the appropriate regulatory agencies



Sewer System Management Plan GOALS

- To uphold the City's standards and specifications on newly constructed public and private sewers
- To provide a safe working environment for City employees
- To provide City employees with the tools and training needed to perform their work effectively and achieve the City's goals



City of Sausalito Sewer System Management Plan

Element 2 Organization



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ELEMENT 2 - ORGANIZATION

The purpose of this section is to identify City staff responsible for implementing the SSMP, responding to SSO events, and meeting the SSO reporting requirements. This section also includes the designation of the Legally Responsible Officials (LRO) or Authorized Representatives to meet RWQCB and Statewide WDR requirements for completing and certifying spill reports.

2.1. RWQCB and SWRCB SSMP Requirements

The requirements for the Organization element of the SSMP are described in the RWQCB SSMP Guidelines and SWRCB Statewide WDR as follows:

2.1.1 RWQCB Requirement

The City's SSMP must identify staff, including names and phone numbers, who are responsible for implementing measures outlined in the SSMP, including management, administration, and maintenance positions. The SSMP must identify the chain of communication for reporting and responding to SSOs.

2.1.2 SWRCB Requirement

The City's SSMP must identify:

- The name of the responsible or authorized representative
- The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. Include lines of authority as shown in an organization chart or similar document with a narrative explanation
- The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, RWQCB, and/or California Office of Emergency Services (Cal OES))



2.2 Organization Chart and SSMP Responsibilities

The SSMP responsibility organization chart is shown in Figure 2-1. Roles and responsibilities of key personnel involved in the wastewater collection system are listed after the organization chart. Telephone numbers are included in Appendix A.

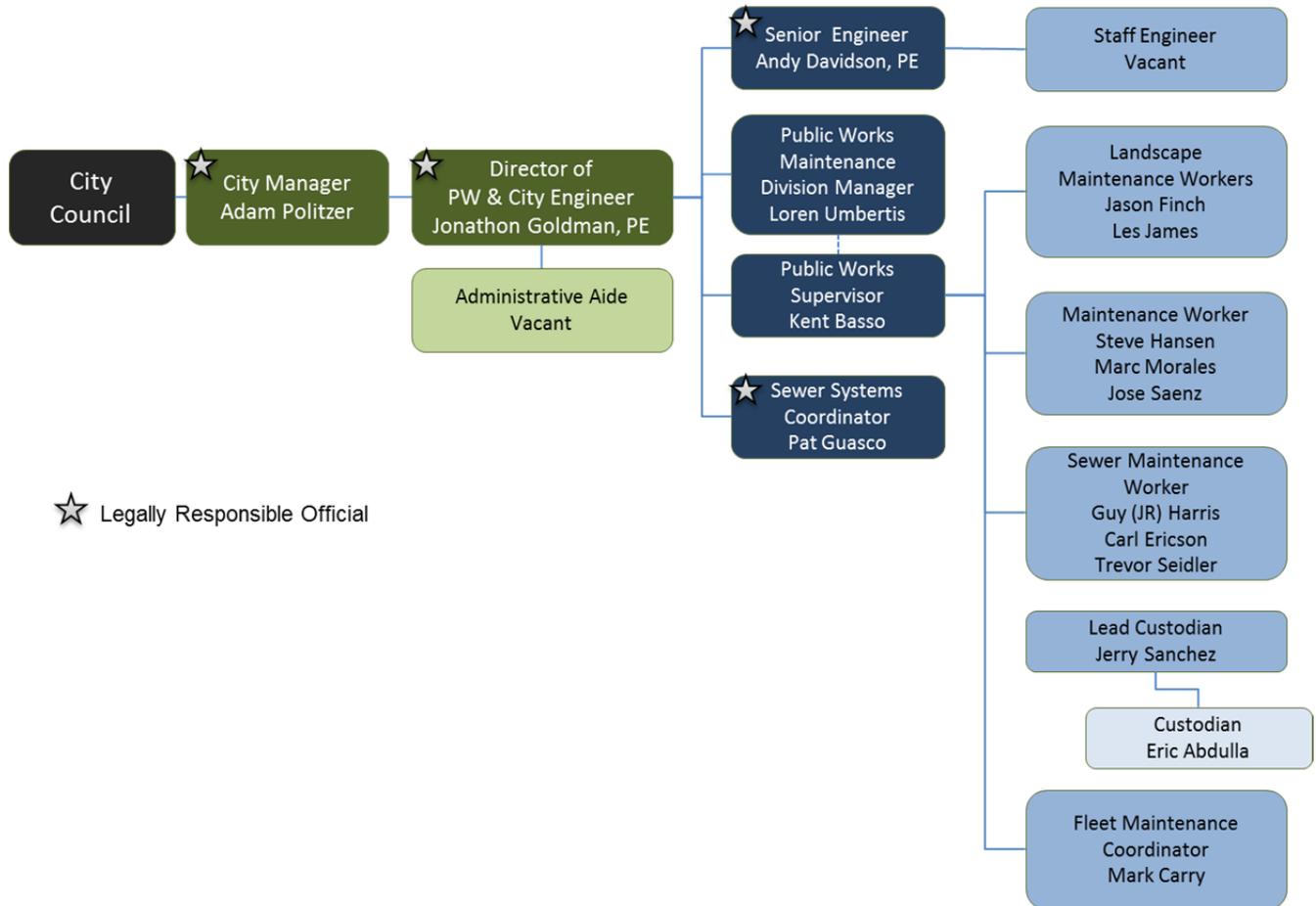


Figure 2-1. Organization Chart

SSMP Responsibilities are as follows:

City Council. Approves and adopts the Sewer System Management Plan and associated policies and budgets. The City Council approves formal bid contracts for projects and provides general direction and support to the City Manager related to implementation of the SSMP.



City Manager. Reports to the City Council. Establishes policies and strategic plans for City activities, including those needed to support the SSMP. Serves as the liaison to the City Council, other agencies and the general public. The City Manager is a Legally Responsible Official.

Public Works Director & City Engineer. Reports to the City Manager. Responsible for the design, construction, management and maintenance of the City's infrastructure, including sewers and storm drains. The Department includes engineering and maintenance/sewer functions. Supervises the preparation of the SSMP, monitors SSMP budget and performance, and allocates needed resources. Interfaces with the City Manager and Council in communications related to the SSMP. The Public Works Director & City Engineer is a Legally Responsible Official.

Public Works Maintenance Division Manager. Reports to the Public Works Director. Oversees public works field operations and maintenance activities, and works closely with the Sewer Systems Coordinator and Public Works Supervisor to recommend budget needs for the City's sewer maintenance program. In an emergency, the Public Works Maintenance Division Manager is responsible for supervising staffing of emergency sanitary sewer repairs.

Sewer Systems Coordinator. Reports to the Public Works Director. Oversees City and residential sanitary sewer repairs, replacements, installations, and rehabilitation activities. Reviews all sanitary sewer lateral videotapes, establishes requirements, and makes recommendations to property owner(s) for rehabilitation or replacement. Responsible for development and management of an annual work plan for maintaining, inspecting, and improving the sewer system, and for managing and updating the Sewer System Management Plan and Computerized Maintenance Management System (CMMS) database. Prepares quarterly and annual regulatory reports, and works closely with sewer consultants and contractors on design, repairs, replacement, installation, and/or rehabilitation of the City's sewer mains.

The Sewer Systems Coordinator is a Legally Responsible Official, and electronically reports sewer system overflows (SSOs) to the Regional Water Quality Control Board California Integrated Water Quality System (CIWQS) database, the California Office of Emergency Services (OES), and the County of Marin Environmental Health Department (CMEHD).

Public Works Supervisor. Reports to the Public Works Maintenance Division Manager. Oversees City maintenance workers in the day-to-day maintenance of the sewer and stormwater collection systems. Provides the Sewer Systems Coordinator with daily reports of cleaning, service calls, and overflow response on a daily basis. Assures that sanitary sewer maintenance personnel have proper licenses and training to operate City vehicles and equipment, maintains records for and enforcement of the Public Works Drug and Alcohol Program. Manages and responds to sewer overflow complaints.



Public Works Sewer Maintenance Workers. Report to the Public Works Maintenance Supervisor. Perform sewer maintenance activities including monthly cleaning, response to service calls, and general televising, dye, and smoke testing, and other activities. Complete daily sanitary sewer reports and enter completed work into the City's CMMS during the course of each work day. Work closely with SMCSO as requested by the City and/or the District.

The Sewer Maintenance Workers responding to an SSO document the event in the CMMS as a CalEMA/CMEHD and deliver these reports to the Sewer Systems Coordinator as soon as possible after the event. Sewer Maintenance Workers are licensed to drive all Public Works vehicles and can perform minor and/or shallow sanitary sewer repairs.

Senior or Staff Engineer. Reports to the Director of Public Works & City Engineer. Responsible for managing capital improvement projects. Develops plans and specifications for collection system projects, and provides construction management inspection services. Provides oversight to the development and implementation of the SSMP. Reviews private development applications and establishes requirements and recommendations for building permits.

In addition to City staff, the City utilizes outside resources as described below to assist in implementation of the SSMP:

Consultants: Individuals, companies, corporations, and/or associations that assist the City of Sausalito with sanitary sewer rehabilitation planning, projects, and/or emergency SSO response. Provide assistance with the design, bid proposals, surveying, pot-holing for utilities, and other actions that promote the rehabilitation, repair, replacement, and/or installation of City-maintained sanitary sewer pump stations and wastewater collection system.

Construction Contractors: Construct, repair, rehabilitate, and/or replace sewer system improvements as per the Specifications and Plans set forth by the City of Sausalito. Contractors must work closely with the Director of Public Works & City Engineer, and Sewer Systems Coordinator on sewer projects and is accountable for associated subcontractors and material suppliers.

Maintenance Contractors: Conduct sewer cleaning and televising activities to supplement work performed by City staff. Perform supplemental services as requested by the City related to the SSMP. Services include, but are not limited, to emergency callout for overflows (separate from the Contract Responder), and field assistance on behalf of the City on sanitary sewer rehabilitation projects, and other duties as requested.

In addition, SMCSO provides maintenance for pump stations, and also provides SSO assistance.

Table 2-1 summarizes the individuals who are responsible for each section of the SSMP.



Table 2-1. SSMP Responsibilities

SSMP Element	Responsible Position
I. Goals	The City Manager leads staff in the implementation of the City's goals
II. Organization	The Public Works Director & City Engineer updates the organization structure and amends SSO response and reporting chains of communication, as needed. The Sewer Systems Coordinator supports the Public Works Director in managing SSMP implementation.
III. Legal Authority	The City Manager upholds City Ordinances and the Public Works Director & City Engineer drafts new ordinances as needed.
IV. Operations & Maintenance	The Public Works Director manages the City's sewer-related resources and budget. The Sewer Systems Coordinator, under direction of the Public Works Director, manages outreach to plumbers and building contractors; prioritizes preventive maintenance; maintains a current collection system map; and schedules inspections and condition assessments. The Public Works Supervisor maintains contingency equipment and replacement inventories and schedules sewer-related training.
V. Design and construction standards	The Director of Public Works & City Engineer reviews design and construction documents to ensure that all construction projects meet the City's standards, and also updates standards for installation, rehabilitation and repair, as needed. The Director of Public Works & City Engineer manages the inspection of all construction projects to ensure the City's construction standards have been followed.
VI. Overflow Emergency Response Plan	The Sewer Systems Coordinator maintains the Overflow Emergency Response Plan. The Public Works Supervisor implements the plan, makes revisions, and oversees regular training for maintenance crew members.
VII. FOG Control Program	The Sewer Systems Coordinator identifies grease hot spots and maintains an effective cleaning program for grease problem sewers. The Sewer Systems Coordinator manages the inspection of grease interceptors and/or traps that have been installed at non-residential locations. The Public Works Director enforces discharge regulations, as needed.
VIII. System Evaluation and Capacity Assurance	The Public Works Director & City Engineer establishes and assesses capacity requirements for the City's collection system and manages preparation and implementation of the City's System Evaluation and Capacity Assurance Plan. The Public Works Director & City Engineer develops and implements the City's long-term Capital Improvement Plan including updating budgets and schedules.
IX. Monitoring, Measurement and Program Modifications	The Public Works Director & City Engineer monitors implementation and assesses success of the overall SSMP program elements with the assistance of staff. The Sewer Systems Coordinator identifies trends in SSO occurrences and provides recommendations to the Public Works Director.
X. SSMP Audits	The Sewer Systems Coordinator oversees annual SSMP audits.
XI. Communication Plan	Depending on the situation, the Director of Public Works & City Engineer and the City Manager communicate with the public and nearby agencies of the City's SSMP.



2.3 Chain of Communication for Reporting

Figure 2-2 on the following page shows the Chain of Communication for reporting overflows. This flowchart is also included in the Overflow Emergency Response Plan that is described in Element 6.

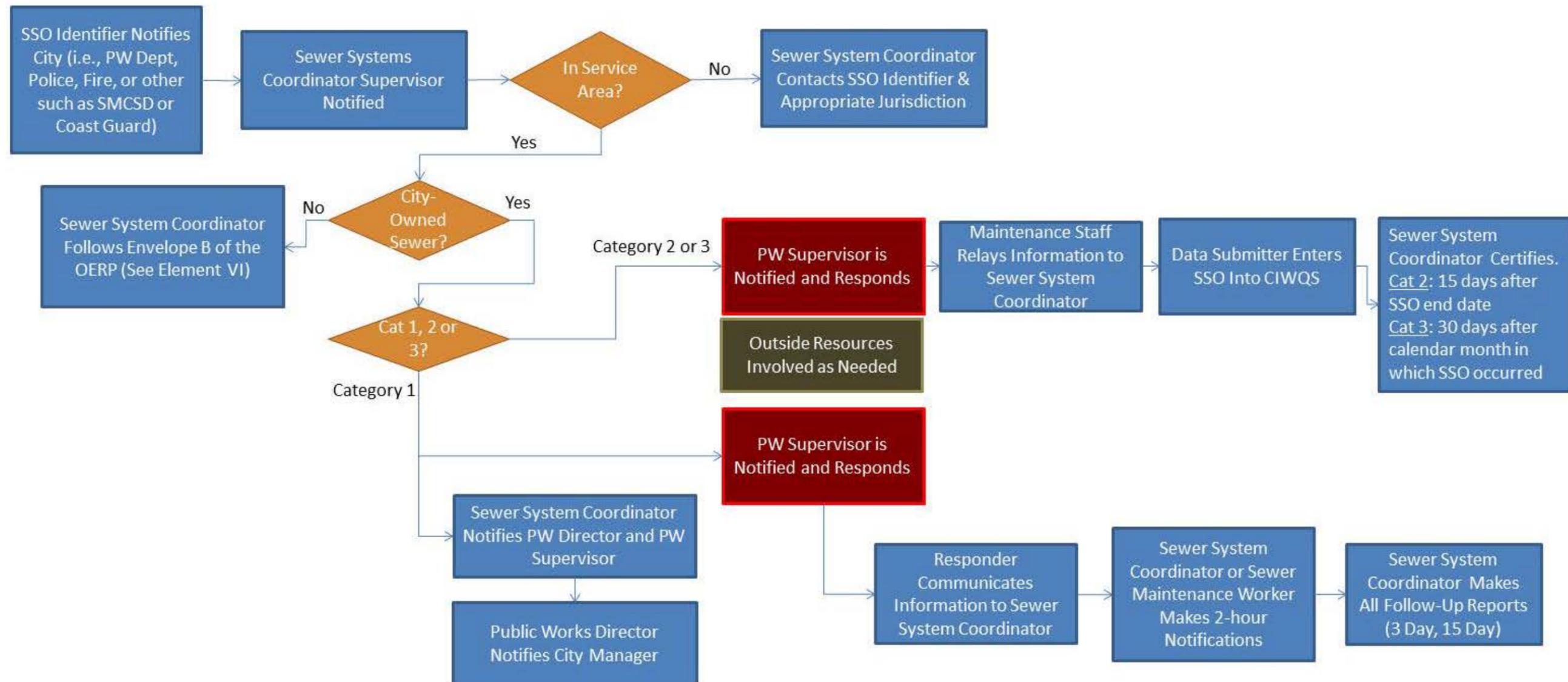
2.4 Appendix A – Element 2 Documents

Appendix A includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix A may have been superseded. Please contact the Public Works Director for the most recent updates to the Appendix A documents.

- SSMP Response Staff Phone Numbers
 - SSMP Consultant, Contractor, and Equipment Resources



Figure 2-2. SSO Response Chain of Communication



Note: When Sewer System Coordinator is not Available, Public Works Supervisor Provides First Response and Public Works Director & City Engineer Makes Notifications



Sewer System Management Plan ORGANIZATION

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City of Sausalito Sewer System Management Plan

Element 3 Legal Authority



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ELEMENT 3 - LEGAL AUTHORITY

This element of the SSMP discusses the City's Legal Authority provided through the Sausalito Municipal Code. This section fulfills the Legal Authority requirement for the RWQCB (Element 5) and the SWRCB (Element 3).

3.1 RWQCB and SWRCB SSMP Requirements

3.1.1 RWQCB Requirement:

The City must demonstrate that it has the legal authority (through ordinances, service agreements, and other binding procedures) to control infiltration and inflow (I&I) from satellite collection systems (if applicable) and private service laterals; require proper design, construction, installation, testing, and inspection of new and rehabilitated sewers and laterals; and enforce violation of ordinances.

The SSMP should describe specific applicable legal mechanisms, with citations of names and code numbers of ordinances. If legal authority does not currently exist for a required element, the SSMP should indicate a schedule of activities to obtain the proper legal authority.

3.1.2 SWRCB Requirement:

The City must demonstrate, through collection system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

- Prevent illicit discharges into its wastewater collection system (examples may include infiltration and inflow (I/I), storm water, chemical dumping, unauthorized debris and cut roots, etc.)
- Require that sewers and connections be properly designed and constructed
- Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City
- Limit the discharge of fats, oils, and grease and other debris that may cause blockages
- Enforce any violation of its sewer ordinances



3.2 Legal Authority to Enforce SSMP Requirements

The City's legal authority as required for the SSMP is contained within the Municipal Code, Title 18, Chapter 18.12, which is included in its entirety in Appendix B.

The following subparagraphs of the City Municipal Code are discussed in more detail below as they pertain to the requirements of the RWQCB and SWRCB.

3.2.1 Prevention of Illicit Discharges

The following sections of the City Municipal Code prevent illicit discharges to the sanitary sewer system and establish the City's authority to enforce violations to the Code sections.

18.12.080. Interceptors Required

This section requires any discharger of oil, grease, flammable substances, or other materials that may be harmful to the sewer system to install a grease interceptor that meets the requirements of the Uniform Plumbing Code. The interceptor shall be maintained by the property owner.

This section also requires minimum maintenance including periodic removal of grease, sand, or other materials and disposal of this material outside of the sewer system. The property owner is required to maintain maintenance records and to make these records available for inspection upon request.

18.12.140. Storm Water Connections Prohibited

This section prohibits any connections that allow storm water, surface water, or groundwater into the City sewer system, including water from any roof or yard drain.

18.12.150. Discharge Prohibitions

This section prohibits discharges that contain fats, oils, and grease, various other deleterious substances, items that obstruct sewer flow, toxic substances, or any petroleum product.

3.2.2 Proper Design and Construction of Sewers and Connections

The following section of the City Municipal Code addresses design of private sewer laterals and the connection to the City-owned sewer pipeline.

18.12.100. Service Laterals, Inspection, Testing, and Remedial Work.

This section requires the installation of a new lateral for every new development, and establishes the minimum size of this lateral pipeline. This section also requires pressure testing or CCTV inspection of an existing lateral upon sale or remodel, and requires replacement of the lateral if



found to be in a deteriorated condition. Approval of the post-construction pressure test must be approved by the City Engineer prior to transfer of title or issuance of a building permit.

For new sewer installations, the City has adopted the design standards developed and maintained by the Sausalito-Marin City Sanitary District (SMCSD). These standards may be amended as needed to address installations that are specific to the City. The Design Standards are discussed in further detail in Element V of this SSMP.

3.2.3 Access for Maintenance, Inspection & Repairs

The following section of the City Municipal Code provides the City with access to private sewer laterals and the connection to the City-owned sewer pipeline as required to maintain or replace these facilities.

18.12.110. Service Lateral Maintenance.

This section transfers ownership of a private sewer lateral to the City if replacement of that lateral in conjunction with mainline sewer replacement work is determined to be required by the City Engineer. Upon completion of the City's project, lateral ownership reverts to the property owner.

3.2.4 Enforcement Measures

The following sections of the Municipal Code address the City's authority to enforce Code requirements related to the sewer system.

18.12.170 Summary Abatement of Certain Nuisances

This section provides the City Engineer with the authority to summarily abate certain nuisances resulting from inadequate, improper, or negligent operation or maintenance of a private sewer lateral or related appurtenance as allowed by California Health and Safety Code, Sections 5410-5416. The Health and Safety Code sections provide for reimbursement to the City by the property owner for activities required to correct any issue that is not adequately addressed by the property owner.

18.12.180 Judicial Remedies

This section determines that any violation of Chapter 18.12 is a public nuisance, and in addition to the other remedies, provides the City Attorney with authority to commence action for appropriate legal relief.

18.12.190 Infractions



This section provides the City with authority to cite and charge any violation as an infraction.

3.3 Interagency Agreements and Satellite Systems

The City does not collect wastewater from satellite systems, and therefore does not have any agreements with satellite sewer collection agencies at this time. The City is a satellite agency to SMCSD and has an agreement in place giving SMCSD the authority to regulate City operations.

3.4 Appendix B – Element 3 Documents

Appendix B includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix B may have been superseded. Please contact the Public Works Director for the most recent updates to the Appendix B documents.

- Municipal Code Title 18, Public Services, Chapter 18.12, Sewers
(<http://www.codepublishing.com/ca/sausalito/>)



City of Sausalito Sewer System Management Plan

Element 4 Operations & Maintenance Program



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ELEMENT 4 - OPERATION AND MAINTENANCE PROGRAM

This section of the SSMP discusses the City's mapping, operations, preventive maintenance, inspection, training and outreach activities. This section fulfills the Operation and Maintenance Program SSMP requirement for the SWRCB (Element 4) and the Measures and Activities SSMP requirement for the RWQCB (Element 6).

The requirements and City's plan for the Operations and Maintenance element of the SSMP are summarized in each category below. Since requirements for this SSMP element contain many categories, this summary is organized by category, with SWRCB and RWQCB requirements described for each category as applicable.

The categories that are addressed in Element 4 include:

- Collection System Mapping
- Resources and Budget
- Prioritized Preventive Maintenance
- Scheduled Inspections, Condition Assessments and Replacement Planning
- Critical Equipment and Spare Parts
- Training

4.1 Collection System Mapping

4.1.1 RWQCB Requirement

The City must maintain current maps of its collection system facilities.

4.1.2 SWRCB Requirement

The City must maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments, manholes, pumping facilities, pressure pipes, valves and applicable stormwater conveyance facilities.

4.1.3 Collection System Map Description

The City currently uses a Geographic Information System (GIS) to create and maintain maps of its collection system facilities. The geodatabase includes pipe and manhole inventory information, including pipe and manhole IDs, manhole spatial coordinates, pipe length and



diameter, the meter basin associated with each manhole, and manhole rim and invert elevations for the trunk sewers and some collector sewers. The GIS database also includes the cleaning method. Where manhole rim elevations are not known, ground surface elevations are included in the GIS database.

The GIS database references three City-owned pump stations and associated forcemains: Whiskey Springs, Gate 5 Road, and Anchor Street pump station. These stations are maintained by Sausalito Marin City Sanitary District (SMCSD). SMCSD maintains system and maintenance information for these facilities. The City does not own or map private sewer laterals.

Maps are stored and accessible through the City's computerized maintenance management system. Until 2012, the City was aided by Redzone Robotics, Inc / ICOMMM and through Marin Map in San Rafael, California. In 2012 and 2013, the City transitioned from the ICOMMM platform to a commercially-available CMMS program developed by NexGen Asset Management. The NexGen software stores data and provides automated work order generation and tracking.

The CMMS system is updated on a continual basis by City Public Works Department staff, with day-to-day entry by Sewer Maintenance Worker staff.

4.2 Resources and Budget

4.2.1 RWQCB Requirement

The City must demonstrate that adequate resources are allocated for the operation, maintenance and repair of the City's collection system.

4.2.2 SWRCB Requirement

The Statewide WDR includes no requirement for resources and budget.

4.2.3 City's Resources and Budget for Sewer System Management

The City prepares a two-year budget, and amends this budget annually. Specific to the sewer collection system, the budget funds the implementation of the annual Sewer Rehabilitation Program and Sewer System Overflow reporting.

The portions of the City's adopted budget related to sewer system management are included in Appendix C. In Fiscal Year 2013/14, the City allocated funding of approximately \$565,000 for annual operations and maintenance (\$22,600 per mile of gravity sewer) and \$1.1M for sewer rehabilitation capital improvements. Funding is provided through sewer service charges, ad-valorem taxes, and bonds or loans.



The current practice for capital improvements is for ad-valorem taxes to fund pay-as-you-go improvements and State Revolving Fund (SRF) loan funding to pay for larger capital improvements. Since 2008, the City has worked to obtain SRF loan funding for capital improvements. For a small agency, the SRF application process and associated administrative requirements are onerous. As a result, the City has spent most of this time processing documentation, with very little actual funding as a result. Although the City will continue to pursue SRF funding on its larger projects, it is now exploring other avenues for the low interest funding that is required to implement the budgeted capital improvement plan.

4.3 Prioritized Preventive Maintenance

4.3.1 RWQCB Requirement

The City must demonstrate that prioritized maintenance activities are performed by the City.

4.3.2 SWRCB Requirement

The City must describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventive Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.

4.3.3 Prioritized Preventive Maintenance Activities

The City of Sausalito cleans the gravity sewer mains on a minimum annual cycle. Pipes with recurring maintenance issues, such as blockage-related SSOs or historical root/grease/debris accumulation, are defined as potential “hot spots.” The pipe segment is cleaned to remove any blockage, and then assigned to a more frequent cleaning schedule beginning with 6-months, and moving to 3-months and then 1-month if issues persist. After the pipeline in question is rehabilitated, it moves back to the 12-month schedule.

The City takes a proactive approach to cleaning, and has placed all of the City’s pipes in areas with known subsidence (generally within Bay Mud) on a 3-month cleaning schedule. The City is currently re-evaluating staffing availability and cleaning progress. If feasible, there may also be an opportunity to move some pipes on the 6-month cleaning schedule to a more proactive 3-month schedule.

The City has 1,843 segments identified for cleaning. Of these pipes, 707 segments are on a 12-month cleaning schedule, 583 segments are on a 6-month cleaning schedule, and 553 segments are on a 3-month cleaning schedule. This information is under confirmation following the City’s



migration of system data from ICOMMM software to a new computerized maintenance management system using NexGen software.

Sewers in easements are maintained using either hydroflushing or machine rodding where feasible. Pipes that cannot be cleaned using hydroflush or truck-mounted machine rodding equipment are cleaned using a smaller portable rodding machine.

4.4 Scheduled Inspections, Condition Assessment and Rehabilitation Plan

4.4.1 RWQCB Requirement

The City must identify and prioritize structural deficiencies and implement a program of prioritized short-term and long-term actions to address them.

4.4.2 SWRCB Requirement

The City must develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short and long-term plans plus a schedule for developing the funds needed for the capital improvement plan.

4.4.3 CCTV Inspection Program

The City has historically collected CCTV inspection data using a combination of City crews and CCTV contractors. Currently, CCTV data is collected in digital format with fully equipped CCTV vehicles, using pan-and-tilt cameras or, alternatively, using push cameras where large camera access is not possible.

Prior to 2008, the City had inspected approximately 77 percent of the gravity sewer pipelines, and recorded pipeline condition using the ICOM Damage Severity Index (DSI) pipeline grading methodology. In 2009, the City converted the DSI condition ratings to equivalent National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) condition ratings. In addition, during 2009, the City inspected 7.5 percent of previously uninspected sewer pipes. The City completed inspection of the remaining 15.5 percent of the gravity sewers in 2010.



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In addition to assigning individual structural and maintenance condition scores according to the NASSCO PACP methodology, the City also assigns a PACP “Quick Rating” for each pipe segment. The quick rating indicates the number of occurrences for the two highest severity grades for each pipe segment for either maintenance or structural defects.

The City has reinspected some of the areas that had previously received DHI condition ratings. Based on these reinspections, the conversion from DSI to NASSCO PACP condition ratings may have resulted in the assignment of “equivalent” NASSCO PACP ratings that were conservative (i.e., high).

The City has prioritized pipeline replacements based on CCTV inspection results, as well as other criteria such as addressing areas with high inflow and infiltration. Since pipeline condition changes over time, the City plans to reinspect the entire system every 10 years.

4.5 Training

4.5.1 RWQCB Requirement

The City must provide training on a regular basis for its collection system operations, maintenance, and monitoring staff.

4.5.2 SWRCB Requirement

The City must provide training on a regular basis for staff in sanitary sewer system operations, maintenance, and require contractors to be appropriately trained.

4.5.3 Training of City Personnel and Contractors

All City staff and contractor employees that have a role in responding to, reporting and/or mitigating a sewer system overflow receives annual training on the contents of the SSMP, the City’s Sewage Spill Overflow Response Plan that is discussed in Element 6, and other job-related training. New employees receive this training before they are placed in a position where they may have to respond to SSOs.

Records are kept of all training that is provided in support of the SSMP. The records include the date, time, place, content, name of trainer(s) and names of attendees.

As of January 2014, City staff have completed the following recent training and certifications:

- Three Collection System Maintenance Grade I CWEA
- January 2012: Five sewer crew employees completed NASSCO PACP, MACP, and LACP training and certification



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- September 2012: Two sewer crew employees completed CWEA Bootcamp 2012 training and certification
- November 2012: Five sewer crew employees received Emergency Overflow Response Plan Pump Station SSO training certification from DKF Solutions
- December 2012: Five sewer crew employees completed Owen Equipment / Keg Company Flusher Nozzle selection training
- April 2013: Five employees obtained CSRMA Utility Locating Safety certifications
- April 2013: Staff completed CIWQS Data Submitter Training
- May 2013: Five employees attended DKF SSO Volume Estimate Techniques
- June 2013: City and SMCSD staff conducted pump station bypass facility field reviews at SMCSD pump stations
- September 2013: Six employees completed Bay Cities JPA Insurance Authority SSO – DKF Overview of Civil and Regulatory Liability and New MRP Requirements
- December 2013: City and SMCSD staff conducted pump station bypass facility at Gate 5 Road pump station

4.6 Contingency Equipment and Replacement Inventories

4.6.1 RWQCB Requirement

The City must demonstrate that contingency equipment is provided to handle emergencies, and that spare parts are available to minimize equipment/facility downtime during emergencies.

4.6.2 SWRCB Requirement

The City must provide equipment and replacement part inventories, including identification of critical replacement parts.

4.6.3 Contingency Equipment and Replacement Inventories

The City owns a Sewer Overflow Trailer that contains 50 barricades, 20-18" reflective cones, 400 x 4" lay flat hose, 300' x 6" lay flat hose, 80' of rigid suction-side hose with camlocks, and a toolbox with required tools, adapters, etc. In addition to the Sewer Overflow Trailer, the City maintains a list of vehicles and equipment that are used in sewer operations, maintenance and response. This list as of June 2013 is included in Appendix C.



4.7 Appendix C – Operation and Maintenance Program Documents

Appendix C includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix C may have been superseded. Please contact the Public Works Director for the most recent updates to the Appendix C documents.

- Two-Year Budget (Sewer-Related Sections)
- Sanitary Sewer Vehicle and Equipment Inventory



Sewer System Management Plan OPERATIONS AND MAINTENANCE PROGRAM

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**Element 5
Design and Performance Standards**



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ELEMENT 5 - DESIGN AND PERFORMANCE STANDARDS

This section of the SSMP discusses the City's design and construction standards. This section fulfills the Design and Construction Standard SSMP requirement for the RWQCB (Element 7) and the Design and Performance Provisions SSMP requirement for the SWRCB (Element 5).

5.1 RWQCB and SWRCB SSMP Requirements

5.1.1 RWQCB Requirement

The City must demonstrate that minimum design and construction standards and specifications are in place for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems.

5.1.2 SWRCB Requirement

The City must have design and construction standards and specifications for the installation of new sewer systems, pump stations and other appurtenances, and for the rehabilitation and repair of existing sewer systems.

5.2 Standards for Installation, Rehabilitation and Repair

The City follows the Standard Specifications for Sausalito-Marin City Sanitary District (SMCSD) for the design and installation of sanitary sewer collection and conveyance facilities. The Table of Contents for this document is included in Appendix D.

The Standard Specifications provide detailed requirements for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems. The Specifications also address pump stations by noting that individual pump station needs vary and must be addressed through facility-specific preliminary designs.

5.3 Appendix D – Design and Performance Provisions Documents

Appendix D includes the SMCSD Design Standards. The information in this document will change from time to time, and the document in Appendix D may have been superseded. Please contact the Public Works Director for the most recent updates to the SMCSD Design Standards.

- Table of Contents for the SMCSD Standard Specifications (accepted by City as the City's Design Standards)



Sewer System Management Plan DESIGN AND PERFORMANCE STANDARDS

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**Element 6
Overflow Emergency Response Plan**



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ELEMENT 6 - OVERFLOW EMERGENCY RESPONSE PLAN

This section of the SSMP provides a summary of the City's emergency response documents and procedures for sanitary sewer overflows, and fulfills the Overflow Emergency Response Plan requirements for both the RWQCB and the SWRCB. The OERP that is included in Appendix E is also maintained by the City as a stand-alone document as required by the RWQCB.

6.1 WDR and RWQCB SSMP Requirement

The summarized requirements for the Overflow Emergency Response Plan element of the SSMP are as follows:

6.1.1 RWQCB Requirement:

The City must develop an overflow emergency response plan that provides procedures for SSO notification, response, reporting, and impact mitigation. The response plan should be developed as a stand-alone document and summarized in the SSMP.

6.1.2 SWRCB Requirement:

The City shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

- Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;
- A program to ensure appropriate response to all overflows;
- Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Statewide Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDR or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;
- Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the emergency response plan and are appropriately trained;
- Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and



- A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

6.2 SSO Categories

The responsibilities of the SSO response team depend on the volume and location of an incident. Three categories of SSOs are defined by the SWRCB:

- Category 1 SSO: Discharges of untreated or partially treated wastewater of any volume resulting from an enrollee's sanitary sewer system failure or flow condition that:
 - Reach surface water and/or reach a drainage channel tributary to a surface water; or
 - Reach a municipal separate storm sewer system and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the municipal separate storm sewer system is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or ground water infiltration basin (e.g., infiltration pit, percolation pond).
- Category 2 SSO: Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from an enrollee's sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a municipal separate storm sewer system unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
- Category 3 SSO: All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.

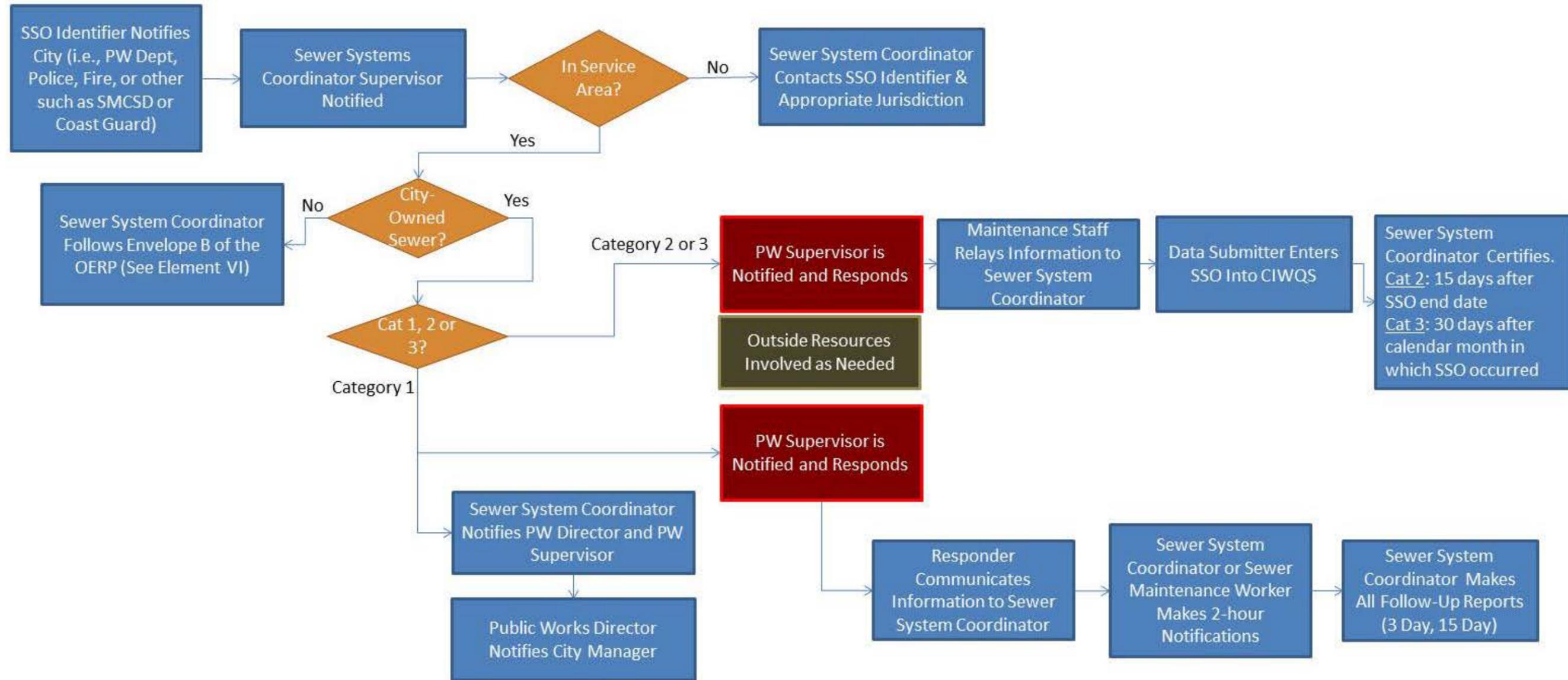
6.3 Notification Procedures

The City is most often notified by the public of an SSO. The public contacts the City through the main telephone number, which is (415) 289-4192, may report the SSO in person at the City offices or may contact the City's Police Department. The main telephone number is included in the phone book and on the City's website, which can be accessed through the url: www.ci.sausalito.ca.us. If a City worker observes an SSO the information is relayed to the Sewer System Coordinator by radio.

Figure 6-1 on the following pages presents a flowchart showing the City's notification process. This flowchart is also included in the OERP.



Figure 6.1. SSO Notification Process



Note: When Sewer System Coordinator is not Available, Public Works Supervisor Provides First Response and Public Works Director & City Engineer Makes Notifications



**Sewer System Management Plan
OVERFLOW EMERGENCY RESPONSE PLAN**



Sewer System Management Plan OVERFLOW EMERGENCY RESPONSE PLAN

6.3.1 Normal Working Hours

During normal working hours, which include Monday through Thursday and alternating Fridays from 8:00 a.m. to 12:00 p.m. and 1:00 p.m. to 5:00 p.m., except holidays, the City staff member that receives the call will dispatch the call directly to the Sewer System Coordinator.

Alternatively, the City's Police or Fire Department forwards the information to the Sewer System Coordinator who then contacts the maintenance staff. If contractor support is required, the Sewer System Coordinator contacts the contract responder, Roto-Rooter (current as of January 2014). Additionally, the Sewer System Coordinator has access to Marin Emergency Radio Authority (MERA) to coordinate outside public works and public safety resources.

If the SSO is Category 1, the Sewer System Coordinator contacts the Public Works Director & City Engineer, who notifies the City Manager. The Sewer System Coordinator also contacts the Public Works Supervisor, who dispatches the field response crew. The Sewer System Coordinator makes the initial (2-hour) notifications and all follow-up reports.

For Category 2 and 3 SSOs, the Sewer System Coordinator contacts the Public Works Supervisor, who dispatches maintenance staff for field response. SSO information is provided to the Sewer System Coordinator or another authorized data submitter, who enters the information in the California Integrated Water Quality System (CIWQS) database. The Sewer System Coordinator certifies the SSO no later than 15 days following the SSO for Category 1 spills, and 30 days past the last day of the month in which the SSO occurred for Category 3 spills.

6.3.2 Outside of Normal Working Hours

After normal working hours, all calls that are received through the City's main number are automatically routed to County dispatch. The County dispatcher (or the Police Department, if contacted directly) takes essential information and then notifies the Sewer System Coordinator. The Sewer System Coordinator responds to the incident and all reporting is completed as described above.

6.3.3 Notification from Pump Station SCADA Alarms

The City's pump stations are monitored using a Supervisor Control and Data Acquisition (SCADA) system and maintained by Sausalito-Marin City Sanitary District (SMCSD). Alarm conditions and other pump station issues are monitored and response is provided by SMCSD staff. SMCSD reports these issues to the Sewer System Coordinator and Public Works Director.

In a non-emergency response situation, a Work Order to address the issue is provided to SMCSD.



6.4 Staff and Contractor Training

All City personnel and contractor employees who may have a role in responding to, reporting and/or mitigating a sewer system overflow receive training on the contents of the OERP. All new employees receive training before they are placed in a position where they may have to respond. Current employees receive annual refresher training on this plan and the procedures to be followed.

Records are kept of 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 include date, time, place, content, name of trainer(s) and names of attendees.

6.5 Response Program

Currently, the following positions are responsible for responding to SSOs:

- First Responder to SSOs: City Maintenance Staff dispatched by the Public Works Supervisor, through communication from the Sewer System Coordinator
- First Responder to Pump Station Failures: SMCSD Crews
- Claims Processing: Public Works Director, City Manager

The contact information for those currently holding the positions named above are included in the OERP.

6.5.1 First Responder Priorities

The first responder's priorities are as follows:

- To follow safe work practices, including those related to traffic control, confined space, and employee and public safety
- To respond promptly with the appropriate equipment
- To evaluate the cause of spill and determine responsibility
- To restore the flow as soon as possible
- To contain the spill whenever feasible
- To minimize public access to and/or contact with the spilled sewage



6.5.2 Initial Response

The First Responder should report to the location within 60 minutes of the initial SSO report with the objective of minimizing and/or eliminating an overflow. The appropriate response measure will vary based on the circumstances and nature of the SSO and the information provided by the caller. Actions related to external and internal SSOs are summarized below.

The City uses standardized SSO reporting forms to internally document the contact and response for each SSO that occurs. The most current form, labeled the SSO Reporting Form, is included in the OERP.

Available Equipment

The City has a variety of equipment available for clearing blockages and impact mitigation and cleanup activities, including the following:

- Combination vactor/hydrojet truck
- Truck-mounted rodder
- Hand rodder
- Lateral video camera
- Emergency Response Trailer (contains pumps, hose, flood lights, general tool box, absorbent materials and containment berms, cones and signage, generator and an air compressor)
- Line locator

In addition, the City maintains an inventory of spare parts. Equipment lists are included as an appendix to the OERP. The City is also looking into options for sharing additional large equipment with SMCSD.

External SSO

Upon arrival at the site, the First Responder should complete the following:

- Note arrival time at spill site, and include the time in the SSO Field Report Form that is included in the OERP. Record basic incident information on site, and complete the form after finishing the response.
- Verify the existence of the SSO



Sewer System Management Plan OVERFLOW EMERGENCY RESPONSE PLAN

- Field verify the address and nearest cross street, and confirm that the SSO is part of the City's sewer/conveyance system
- Conduct visual monitoring to determine immediate actions, starting with documentation of SSO volume using the methods included in the OERP
- Identify and clearly assess the affected area and extent of spill, including possible impacts on surface water. Where it is safe and practical, visually inspect surface water in the vicinity of the SSO & record observations on the SSO Field Report Form. Signs of receiving water impacts include clear signs of sewage (solids, grease, paper), abnormal color, fish kills, etc.
- Notify the Sewer System Coordinator if the spill appears to be large (over 1000 gallons), in a sensitive area, may imminently and substantially endanger human health, results in fish kills, if there is doubt regarding the extent, impact, or how to proceed, or if additional help is needed for line cleaning or repair, containment, recovery, lab analysis, and/or site cleanup
- Contain, mitigate, and minimize impacts from the SSO. If the SSO is the result of a blockage, and the blockage cannot be cleared within a reasonable time, containment and/or bypass pumping must be initiated.
- Where safe and feasible, take necessary water quality samples at the point of discharge and at upstream and downstream locations. Use best judgment and consult with the Sewer System Coordinator if uncertain. Water quality monitoring is not given precedence over stopping the SSO or protecting public health. However, if sufficient personnel are available, monitoring is conducted in parallel with these activities or with the cleanup effort.
- Comply with all safety precautions (traffic, confined space, etc.)
- Contact caller, if time permits. Identify SSO cause, including conducting CCTV inspection as appropriate.
- Document all activities through photos and written documentation

The First Responder should provide the completed SSO response form to the Public Works Director/City Engineer for input into the SSO database. Contact information, including a comprehensive Emergency Contact List, are included in the OERP.



Sewer System Management Plan OVERFLOW EMERGENCY RESPONSE PLAN

Internal SSO

Upon arrival at the location of a spill into a house or a building, the First Responder should evaluate and determine if the spill was caused by a blockage in the lateral or in the City-owned sewer main. If a blockage is found in a property owner's lateral, it should be clearly communicated that response and repair of private laterals is not the City's responsibility. The homeowner is responsible for clearing any blockage in the home's plumbing system or private lateral and for any resulting flood damage to the structure. The homeowner is also responsible for damage that happens because a lateral was not properly installed.

If a backup in the main line is found to have caused the SSO in a house or building, the First Responder should take steps to address the issue as described above. The First Responder should provide a copy of the residential sewage contamination flyer in the OERP to the property owner, and instruct the property owner to follow the following guidelines:

- Keep all family members and pets away from the affected area
- Place towels, rags, blankets, etc between areas that have been affected and areas that have not been affected, and move any uncontaminated property away from the overflow area
- Move any uncontaminated property away from the overflow area. Do not remove any contaminated items.
- Turn off the HVAC system

The First Responder should follow the following steps to assist the homeowner:

- Gather information and fill out the Sewer Backup Summary Report in the OERP
- Call a restoration company as described below (contact numbers are included in the OERP), and wait for the restoration firm to arrive
- Forward incident reports and related documents to Sewer System Coordinator

Pump Station SSO

The First Responder to a potential pump station or forcemain failure should determine whether flow can be restored within a reasonable time. If it appears that flow cannot be restored within a reasonable time or if the conveyance system facility requires construction and/or repairs, then the First Responder should employ a pump station contingency plan covering containment, bypass pumping, contractual assistance. The City has separate Emergency Response Plans for the pump stations that are included as an appendix to this OERP.



Sewer System Management Plan OVERFLOW EMERGENCY RESPONSE PLAN

In addition, response activities discussed above should be implemented where applicable.

6.5.3 Recovery and Cleanup

The recovery and clean up phase begins when the flow has been restored and the spilled sewage has been contained to the extent possible. The SSO recovery and cleanup procedures include volume estimation, sewage recovery, and cleanup and disinfection.

Estimate and Recover the Volume of Spilled Sewage

Use the methods outlined in the OERP in Appendix E to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos of the SSO site before and during the recovery operation.

Spilled sewage shall be vacuumed or pumped and discharged to the extent possible back into the sanitary sewer system.

Clean Up and Disinfection

Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Clean up should proceed quickly in order to minimize negative impact. Any water that is used in the cleanup process should be de-chlorinated prior to use.

Where cleanup is beyond the capabilities of City staff, the Sewer System Coordinator will contact a cleanup contractor to complete the work.

Spills inside houses or buildings should be cleaned by a professional cleaning company. Contact information for professional cleaning companies can be found in the “Water Damage Restoration” section of the Yellow Pages and is also provided in the OERP. Claims by homeowners should be forwarded to the Public Works Director/City Engineer.

Guidelines for Cleanup

On **hard surface areas**, collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms. Take reasonable steps to contain and vacuum up the wastewater. Disinfect all areas that were contaminated from the SSO using a City-supplied disinfectant solution. Apply minimal amounts of the disinfectant solution using a hand sprayer. Document the volume and application method of disinfectant that is employed. Allow area to dry. Repeat the process if additional cleaning is required.



Sewer System Management Plan OVERFLOW EMERGENCY RESPONSE PLAN

On **landscaped or unpaved areas**, collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms. Allow the area to dry. Repeat the process if additional cleaning is required.

If the SSO has reached the **storm drain system**, the combination sewer cleaning truck should be used to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage. In the event that an overflow occurs at night, the location should be re-inspected as soon as possible the following day. The operator should look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

6.6 Impact to Waters of the United States

If an SSO is confirmed to have entered waters of the United States¹, the Sewer System Coordinator is immediately notified. The response team then proceeds with the following additional activities:

- Determine the extent of the SSO by investigating downstream until there is no evidence of sewage or debris along the creek or water body
- Conduct Water Quality Sampling, following the process described below. If the SSO is 50,000 gallons or greater, collect water quality samples within 48 hours of becoming aware of the SSO
- Immediately post contaminated water sign(s) and protect the waterbody from public access on all sides
- Photograph sign placement and evidence of the overflow in and around the waterbody to the farthest point reached by the sewage
- Determines if the waterbody is safe to enter. During the winter storm season, cleaning the waterbody may not be feasible due to high water flows
- If feasible, block the waterbody downstream of the affected area in a location that is safe to enter and is accessible to set up a pump or utilize other sewer cleaning equipment
- To the extent feasible, recover and return contaminated water to the collection system
- Perform follow-up sampling until the area shows no water quality impairment and the posted signs can be removed. The Inspection Superintendent ultimately determines when this happens and makes any follow up calls to affected agencies

¹ **40 CFR 230.3(s)** defines the term “waters of the United States.” This term includes all lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, or natural ponds, or waters that could be used for recreational or other purposes.



6.6.1 Water Quality Sampling

Water quality sampling and testing is required whenever the spilled sewage enters a water body. The purpose of testing is to determine the extent and impact of the SSO. The following guidelines must be followed:

- The First Responder should arrange for collection of samples. Samples should be collected as soon as possible after the discovery of the SSO event
- For spills less than 1,000 gallons, at a minimum, water quality samples should be collected at the discharge point, 100 feet upstream, and 100 feet downstream
- If a spill is more than 1,000 gallons, additional sites may require sampling, following the requirements of the County of Marin Environmental Health Services (EHS)
- The water quality sampling procedures should follow EHS procedures as follows:
 - Keep the sterile collection bottle closed until it is to be filled. Do not contaminate inner surface of the lid or bottle rim.
 - Collect water sample just below the surface in knee deep water, approximately 3 feet deep (full arm's length), without rinsing. If needed, extend the sampling pole to the fullest length to reach deeper water depth. Minimize contact with bank or beach bed as water fouling may occur.
 - Remove cap and hold the bottle near its base and plunge it, neck downward, below the surface
 - Turn bottle until neck points slightly upward and mouth is directed toward the current. Fill bottle leaving about 1 inch of air to allow lab to mix by shaking. Collect a minimum of 100 mL. (If applicable, insert sterile collection bottle into the holder on the sample pole. Extend the sample pole and plunge bottle end into the water, bottle opening downward.)
 - Immediately place cap securely on bottle to avoid leaks and contamination
 - Dry the bottle
 - Label container with distinctive sample site name, date, and time collected
 - Complete the laboratory requisition slip with requested information (site, bottle number, collector, date and time of collection, type of sample, test requested, name and phone number of responsible person for reporting purposes, and



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deliverer name). Note any field observations that may have occurred during the sampling.

- Samples should be tested for fecal coliform, total coliform and enterococcus.
 - Samples should be stored and shipped by placing the water sample bottle in a cooler with frozen blue ice. Water sample must be kept cool. Ice may be used but care must be taken so water samples are not contaminated or diluted by the ice.

Water samples may be taken to the **Marin County Department of Public Health Laboratory at 920 Grand Avenue, San Rafael, CA 94901, (415) 499-6849**. The water samples must be brought to the laboratory within 8 hours of collection, before 3:00 pm, for processing.

Records of monitoring information shall include the date, exact place, and time of sampling or measurements, the individual(s) who performed the sampling or measurements, the date(s) analyses were performed, the individual(s) who performed the analyses, the analytical technique or method used, and the results of such analyses.

6.6.2 Water Quality Monitoring Plan

A Water Quality Monitoring Plan must be implemented immediately upon discovery of any Category 1 SSO of 50,000 gallons or more in order to assess impacts from SSOs to surface waters. Water quality testing must be completed within 48 hours of the City becoming aware of the SSO.

The City's SSO Water Quality Monitoring Program is included in Appendix E, and includes the following:

- Protocols for water quality monitoring
- Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.)
- Requirement for water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory
- Requirement for monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy

6.6.3 SSO Technical Report

If 50,000 gallons or greater from an SSO reaches surface waters, an SSO Technical Report must be prepared and submitted to the CIWQS online SSO database within 45 calendar days of the SSO end date. The SSO Technical Report must include, at a minimum, the following:



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1. Causes and Circumstances of the SSOs
2. Complete and detailed explanation of how and when the SSO was discovered
3. Diagram showing the SSO failure point, appearance point(s), and final destination(s)
4. Detailed description of the causes(s) of the SSO
5. Copies of the original field crew records used to document the SSO
6. Historical maintenance records for the failure location
7. Response to SSO:
8. Chronological narrative description of all actions taken to terminate the SSO
9. Explanation of how the OERP was implemented to respond to and mitigate the SSO
10. Final corrective action(s) completed and/or planned to be completed, including a schedule or actions not yet completed
11. Water Quality Monitoring:
12. Description of all water quality sampling activities conducted including analytical results and evaluation of the results
13. Detailed location map illustrating all water quality sampling points

The Public Works Director & City Engineer is responsible for the development and certification of the SSO Technical Report.

6.7 Containment or Bypass

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

- Determine the immediate destination of the overflowing sewage
- Plug storm drains using available equipment and materials to contain the spill, where feasible. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags
- Pump around the blockage/pipe failure/pump station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further overflow
- If an SSO reaches a water body, follow the requirements below for posting and SSO notification signage. Also conduct water quality sampling as discussed above.

6.8 SSO Notification Signage

Barriers shall be installed to prevent the public from having contact with the sewage. Signs should be posted to keep vehicles and pedestrians away from contact with spilled sewage. Signs should remain in place until removal of the signs is directed by the Sewer System Coordinator. A sample warning sign is included in the OERP.



Sewer System Management Plan OVERFLOW EMERGENCY RESPONSE PLAN

If a creek, stream and/or beach has been contaminated as a result of an SSO, notifications should be posted at visible access locations until the risk of contamination has subsided to acceptable background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place. “Closed” signs should be posted at the outfall and a minimum of 100 feet upstream and 100 feet downstream of the discharge. If there is a large volume of sewage, more signs must be posted downstream.

Signs must remain posted until at least two consecutive days of sampling meet the Public Beach Sanitation and Ocean Water-Contact Sports standards that are described above. The removal of signs must be approved by EHS and the County Public Health Officer.

6.9 Failure Analysis

For each SSO event greater than 250 gallons, all City participants involved in the response – from the person who received the call to the last person to leave the site – should meet, as soon as feasible, after the event to review and evaluate the incident and the City response procedures. The objective of the Post-SSO Debrief is to determine actions necessary, if any, to reduce the recurrence and better mitigate the effects of SSOs.

It is the responsibility of the Sewer System Coordinator to investigate an SSO and to ensure that the procedures in the OERP are followed or modified as a result of the incident failure analysis. The failure analysis is intended to determine if additional maintenance, repair/replacement or other follow-up actions or response procedures changes are needed to reduce or eliminate the likelihood of future SSOs. The procedures for investigating an SSO are as follows:

- Reviewing and completing SSO documentation
- Reviewing the incident timeline and other documentation regarding the incident
- Review actions by all persons involved in the response, including the initial recipient of the complaint
- Reviewing communications with the all reporting parties, and witnesses
- Review volume estimate, volume recovered estimate, volume estimation assumptions and associated drawings
- Reviewing available photographs
- Interviewing staff that responded to the spill
- Reviewing past maintenance records of all affected manholes and pipe segments
- Reviewing past CCTV records
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs
- Reviewing any FOG related information or results
- Identify any changes or additions needed to the OERP and SSMP following the event



Sewer System Management Plan OVERFLOW EMERGENCY RESPONSE PLAN

The product of the failure analysis investigation should be the determination of the root cause and identification of the corrective actions. The City is preparing a failure analysis report that will be included in a subsequent update to the OERP.

6.10 SSO Documentation and Reporting

6.10.1 Documentation

In accordance with the WDR, the City maintains records for each sanitary sewer overflow. Records include:

- Documentation of response steps and/or remedial actions
- Photographic evidence to document the extent of the SSO, field crew response operations
- 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 how any estimations of the volume of discharged and/or recovered overflow were calculated

The records are maintained at the City office and are also entered into the City's CMMS system.

The City also maintains records of complaints received, even if the complaint does not relate to a City SSO.

6.10.2 Regulatory Reporting

Table 6-1 summarizes the regulatory reporting requirements that are also described in the paragraphs following the table.

Multiple Appearance Points – Single SSO

For reporting purposes, if one SSO event of whatever category results in multiple appearance points in a sewer system, a single SSO report is required in CIWQS which includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that caused the SSO, and descriptions of the locations of all other discharge points associated with the single SSO event.

2-Hour Notification to Regulatory Agencies of SSOs

Cal OES is only to be notified of a Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water. The First Responder is responsible for reviewing field data for reporting to regulatory agencies. If it is determined that the criteria for OES notification was met, then the First Responder must notify OES of the event no later than two (2) hours after:

1. The City has knowledge of the SSO;



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2. Notification is possible; and
3. Notification can be provided without substantially impeding cleanup or other emergency measures.

The OES phone number is (800) 852-7550. The First Responder is responsible for obtaining an OES Control number. Following the initial notification to OES and until the SSO report is certified in the SWRCB online SSO Database, the LRO will provide updates (or provide direction for updates to be provided) to OES regarding substantial changes to estimated volume of untreated or partially treated sewage discharged and any substantial changes to known impact(s).

Detailed Reporting Requirements

Table 6-1 provides detail on the City's regulatory reporting process, which is also described below.

SSO Reporting for Category 1 SSOs

Cal OES shall receive notification of Category 1 SSOs greater than or equal to 1,000 gallons, as stated earlier in this Section.

The Data Submitter must then submit the initial draft report to the SWRCB's CIWQS Online SSO database @ <http://ciwqs.waterboards.ca.gov/ciwqs> within 3 business days of becoming aware of the SSO.

Within 15 calendar days of the SSO end date, the LRO must review and certify the report in the CWIQS Online SSO database @ <http://ciwqs.waterboards.ca.gov/ciwqs>

SSO Reporting for Category 2 SSOs

Within 3 business days of becoming aware of the SSO, the Supervisor must submit the initial report to the SWRCB's CWIQS Online SSO database @ <http://ciwqs.waterboards.ca.gov/ciwqs>.

Within 15 calendar days of the SSO end date, the LRO must review and certify the report in the CWIQS Online SSO database @ <http://ciwqs.waterboards.ca.gov/ciwqs>.

SSO Reporting for Category 3 SSOs

Within 30 calendar days of the end of the calendar month in which the SSO occurred, the LRO must submit and certify a report to the SWRCB's CWIQS Online SSO database @ <http://ciwqs.waterboards.ca.gov/ciwqs>.



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No Spill Certification (Monthly)

Within 30 calendar days of the end of a calendar month that there are no SSO's, the LRO must submit and certify a "No Spill" certification to the CIWQS online SSO database.

CIWQS Not Available

In the event that the CIWQS online SSO database is not available, the LRO will fax or e-mail all required information to the RWQCB office at (510) 622-2460 in accordance with the time schedules identified above. In such an event, the City will submit the appropriate reports using the CIWQS online SSO database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the SSO document file.

Amending SSO Reports

The LRO is responsible for amending SSO reports. Certified SSO reports may be updated by amending the report or adding an attachment to the SSO report within 120 calendar days after the SSO end date. After 120 days, the City must contact the State SSO Program Manager to request to amend an SSO report along with a justification for why the additional information was not available prior to the end of the 120 days. The SWRCB SSO Program Manager contact information is as follows:



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Russell Norman, P.E.
State Water Resources Control Board
Division of Water Quality
1001 I Street 15th Floor
Sacramento, CA 95814
E-mail: Russell.norman@waterboards.ca.gov
Phone: (916) 323-5598

6.11 Contractors Working On City Sewer Facilities

Beginning in 2014, all contractors working on City sewer facilities will be trained in the City's OERP and will be required to follow the OERP in the event that they cause or observe an SSO.

6.12 Training

SSO Response Training

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

Initial and Annual Refresher Training

All City personnel who may have a role in responding to, reporting, and/or mitigating a sewer system overflow should receive training on the contents of this OERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed. Affected employees will receive annual training on the following topics, at a minimum, by knowledgeable trainers:

- The City's Overflow Emergency Response Plan
- SSO Volume Estimation Techniques
- Impacted Surface Waters: Response Procedures

The City will verify that annual safety training requirements are current for each employee, and that employees are competent in the performance of all core competencies. The City will address, through additional training/instruction, any identified gaps in required core competencies.

SSO Response Drills

Periodic training drills should be held to ensure that employees are up to date on these procedures, equipment is in working order, and the required materials are readily available. The training drills will cover scenarios typically observed during sewer related emergencies (e.g.



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mainline blockage, mainline failure, force main failure, pump station failure, and lateral blockage). The results and the observations during the drills will be recorded and action items should be tracked to ensure completion.

SSO Training Record Keeping

Records should be kept of 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 of attendees.

6.13 Appendix E – Overflow Emergency Response Plan

Appendix E includes a full copy of the City's Sanitary Sewer Overflow Response Plan, which also serves as the SSMP Overflow Emergency Response Plan. The information in this document will change from time to time, and the OERP may have been superseded. Please contact the Public Works Director/City Engineer for the most recent updates to the OERP.



Table 6-1. Regulatory Reporting Requirements

Element	Requirement	Method
NOTIFICATION	<ul style="list-style-type: none"> Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, the City will notify the California Office of Emergency Services (OES) and obtain a notification control number. 	<ul style="list-style-type: none"> Call Cal OES at: (800) 852-7550
REPORTING	<ul style="list-style-type: none"> Category 1 SSO: The City will submit a draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. Category 2 SSO: The City will submit a draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. Category 3 SSO: The City will submit a certified report within 30 calendar days of the end of month in which SSO the occurred. SSO Technical Report: The City will submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. "No Spill" Certification: The City will certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs 	<ul style="list-style-type: none"> Enter data into the CIWQS Online SSO Database (http://ciwqs.waterboards.ca.gov/), certified by the Legally Responsible Official(s). All information required by CIWQS will be captured in the SSO report. Certified SSO reports may be updated by amending the report or adding an attachment to the SSO report within 120 calendar days after the SSO end date. After 120 days, the State SSO Program Manager must be contacted to request to amend an SSO report along with a justification for why the additional information was not available prior to the end of the 120 days.
WATER QUALITY MONITORING	<ul style="list-style-type: none"> The City will conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters. 	<ul style="list-style-type: none"> Water quality results will be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD-KEEPING	<p>The City will maintain the following records:</p> <ul style="list-style-type: none"> SSO event records. Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. 	<ul style="list-style-type: none"> Self-maintained records shall be available during inspections or upon request.



Placeholder for Overflow Emergency Response Plan



**Element 7
Fats, Oils, and Grease Control Program**



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ELEMENT 7 - FOG CONTROL PROGRAM

The intent of this section of the SSMP is to evaluate the extent and nature of SSOs related to Fats, Oils and Grease (FOG), to determine the need for a FOG Control Program, and to outline the elements of the City's FOG control program.

7.1 WDR AND RWQCB SSMP Requirement

7.1.1 RWQCB Requirement:

The City must evaluate its service area to determine whether a FOG control program is needed. If needed, a FOG control program shall be developed as part of the SSMP. If the City determines that a FOG program is unnecessary, proper justification must be provided.

7.1.2 SWRCB Requirement:

The City shall evaluate its service area to determine whether a FOG control program is needed. If the City determines that a FOG program is not needed, justification must be provided for why it is not needed. If FOG is found to be a problem, the City must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. The FOG source control program shall include the following as appropriate:

- An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG
- A plan and schedule for the disposal of FOG 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 FOG generated within a sanitary sewer system service area.
- The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG
- Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements
- Authority to inspect grease producing facilities, enforce requirements, and determine whether the City has sufficient staff to inspect and enforce the FOG ordinance
- An identification of sewer system sections subject to FOG blockages and the establishment of a cleaning maintenance schedule for each section



- Development and implementation of source control measures, for all sources of FOG discharged to the sewer system, for each sewer system section identified as subject to blockages

7.2 Public Education Plan

The City has approximately 40 food service establishments (FSE), and conducted FOG outreach and education in 2008. Since this time, FOG in the sewer system has been managed through routine maintenance and is not a major contributor to SSOs. However, in order to reduce maintenance needs for FOG-related hot spots, the City implements improved FOG education and outreach to the FSEs and the community on a case by case basis. The outreach communication includes information to educate the City's residents, FSE owners, and employees about minimizing FOG disposal into the sewer system, including information about best management practices for minimizing FOG.

7.3 FOG Disposal Plan

Currently, grease haulers dispose of grease pumped from interceptors at a grease collection facility located outside of the service area. At this time, there does not appear to be a need for additional grease disposal facilities to collect grease from the City's service area. However, the City may choose to evaluate this need further, should the need for additional grease disposal facilities become an issue in the future.

7.4 Legal Authority to Prohibit SSOs and Blockages Caused by Fog Discharge

The City's Municipal Code Title 18, Chapter 18.12, which is included in Appendix C, provides the legal framework for enforcing illicit discharges to the collection system. The City's legal authority to prohibit and enforce actions against FOG discharge are discussed in Chapter 3 of this SSMP titled, "Legal Authority."

Specifically, Chapter 18.12.080 This section requires any discharger of oil, grease, flammable substances, or other materials that may be harmful to the sewer system to install a grease interceptor that meets the requirements of the Uniform Plumbing Code. The interceptor shall be maintained by the property owner, and maintenance records must be available for inspection upon request.

7.5 Sewer Sections Subject to FOG Blockages

During the five years between 2008 and 2012, the City reported one FOG-related SSO at 85 Libertyship Way. In early 2013, the City reported two FOG-related SSOs. The first SSO was located at The Spinnaker Restaurant, which is a City-owned facility. In early 2013, the City received bids for a project to, among other items, install a grease interceptor at this location. This



Sewer System Management Plan FATS, OILS AND GREASE CONTROL PROGRAM

project is under construction and scheduled for completion in March 2014. The second SSO was from 515 Humboldt Avenue. Additional outreach was provided to this property owner regarding FOG management and control.

7.6 Appendix F – FOG Control Program Documents

Appendix F is a placeholder for FOG-related documents that may be developed by the City in the future. The information in these documents will change from time to time, and the documents in Appendix F may have been superseded. Please contact the Public Works Director for the most recent updates to the Appendix F documents.



Sewer System Management Plan FATS, OILS AND GREASE CONTROL PROGRAM

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**Element 8
System Evaluation and Capacity Assurance Plan**



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ELEMENT 8 - SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

This section of the SSMP discusses the City's activities related to capacity management. This section fulfills the Capacity Management requirements for the RWQCB and the SWRCB elements.

8.1 WDR and RWQCB SSMP Requirement

8.1.1 RWQCB Requirement

The City must prepare a CIP to provide hydraulic capacity of key collection system elements under peak flow conditions.

8.1.2 SWRCB Requirement

The City must establish a short- and long-term capital improvement plan (CIP) to address identified hydraulic deficiencies including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding. The City shall develop a schedule of completion dates for all portions of the CIP. This schedule shall be reviewed and updated at least every two years.

8.2 System Evaluation and Capacity Assurance Plan

The City completed a Capacity Assurance Report as required by the EPA Order for compliance. The assessment included hydraulic modeling of the City's conveyance system and development of an associated Capital Improvement Plan (CIP). The Capacity Assurance Report was submitted to the EPA in October, 2008, and is available from the City Public Works Department. Relevant portions of the report are also included in Appendix G.

8.2.1 Pipeline and Pump Station Capacity Assessments and Capital Improvement Plan

The City's pipeline capacity assessment needs were developed using a calibrated, fully dynamic sewer collection system hydraulic model. The model includes a representation of the City's conveyance system and key sewers, and also the City's three sewer pumping stations, which are operated and maintained by Sausalito Marin City Sanitary District (SMCSD), and four additional pumping stations that are both owned and operated by SMCSD.

The Capacity Assurance Report identified four pipeline replacement projects that are needed to accommodate the design storm. The projects include upgrades to pipelines within Gate 5 Road, Nevada Street, Coloma Street, and within Bridgeway. In addition, the Capacity Assurance Report recommended capacity improvements to the Whiskey Springs Pump Station.



Sewer System Management Plan SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

Of the projects described, the City is in the design phase for improvements to the existing pipe on Gate 5 Road. This pipe is aging and situated in Bay Mud. The surrounding environment has experienced settlement, and the City's 2009 flow monitoring program identified tidal inflow. Rehabilitation of this pipeline will reduce the tidal inflow, leading to improved capacity at the Gate 5 Road Pump Station and also benefiting the wastewater treatment process at SMCSO.

8.3 Capital Improvement Program Budget and Schedule

The City's capacity-related Capital Improvement budget and schedule were presented in the Capacity Assurance Report and are also included in Appendix G. The materials include maps showing additional information on project locations and requirements.

8.4 Appendix G – System Evaluation and Capacity Assurance Plan Documents

Appendix G includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix G may have been superseded. Please contact the Public Works Director for the most recent updates to the Appendix G documents.

- Representative Information from the Capacity Assurance Report including capacity-related CIP and associated project maps



**Element 9
Monitoring, Measurement and Modifications**



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ELEMENT 9 - MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS

This section of the SSMP discusses the City's Monitoring, Measurement, and Program Modifications. This section fulfills the Monitoring, Measurement, and Program Modifications requirements for the RWQCB and the SWRCB elements.

9.1 WDR and RWQCB SSMP Requirement

The requirements for the Monitoring, Measurement, and Program Modifications element of the SSMP are summarized below.

9.1.1 RWQCB Requirement

The City must monitor the effectiveness of each SSMP element and update and modify SSMP elements to keep them current, accurate, and available for audit as appropriate.

9.1.2 SWRCB Requirement

The City shall:

- Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities
- Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP
- Assess the success of the preventative maintenance program
- Update program elements, as appropriate, based on monitoring or performance evaluations
- Identify and illustrate SSO trends, including SSO frequency, location, and volume

9.2 Utility Metrics to Measure Progress and Prioritize Activities

The City has established the preventive maintenance sewer metrics that are shown in Table 9-1 for use in monitoring, measuring and adjusting sewer maintenance activities. After these metrics are included in the City's new CMMS system, they will be monitored on a regular basis. Until this time, City staff will compile and monitor the most relevant indicators, which include the number and causes of SSOs, length of pipes cleaned, length of pipes televised and length of pipes repaired.



Sewer System Management Plan MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS

Table 9-1. Success Factors and Metrics

Sewer Maintenance Success Factor	Metric
• System Pipes	• Miles
• Sewer Maintenance Field Staff	• Full Time Equivalents (FTE)
• Pipes Cleaned	• Miles/Year
• Pipe Inspected (CCTV)	• Miles/Year
• Manholes Inspected	• Miles/Year
• Hot Spots Cleaned	• Number by Underlying Cause (Roots, Debris, FOG, Structural)
• SSOs	• Number by Underlying Cause per 100 Miles
• Repeat SSOs	• Number by Address
• Response Time	• Minutes per SSO
• Pump Station Overflows	• Number by Cause
• Odor Complaints	• Number
• FSE Inspections	• #/Year
• Laterals Replaced (LRGP)	• #/Year
• Pipe Replaced	• Miles/Year
• Claims	• #/Year and \$/Year

9.3 SSO Trends – Frequency, Location and Volume

Table 9-2 summarizes the nature of reported SSOs for the five-year period between 2008 and 2012.

Year	Capacity	Roots	FOG	Debris	Structural	Other	Total (#)	Volume Recovered (Gal)	Volume to Surface Waters (Gal)
2008	1	5	0	7	4	0	19	403	135,531
2009		4		3		1	8	1,060	0
2010		4	1	2	2		9	2,475	33,095
2011		2		4	4		10	866	618
2012		1			7	2	10	225	126

9.4 Appendix H – Monitoring, Measurement and Program Modification Documents

There are no Appendix documents to accompany Section IX. However, this Appendix H is included as a placeholder for future documents.



City of Sausalito Sewer System Management Plan

Element 10 SSMP Audits



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ELEMENT 10 - SSMP PROGRAM AUDITS

This section of the SSMP discusses the City's SSMP auditing program. This section fulfills the SSMP Audit requirement for the RWQCB and the SWRCB elements.

10.1 WDR and RWQCB SSMP Requirement

The requirements for the SSMP Audits element of the SSMP are summarized below:

10.1.1 RWQCB Requirement

The City must conduct a biannual audit of their SSMP that includes any deficiencies and steps to correct them that are appropriate to the size of the City's system and the number of overflows. The City must submit a report of its biannual audit, as described in the updated SSMP audit requirements issued in October 2012.

10.1.2 SWRCB Requirement

The City shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the City's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP and steps to correct them.

10.2 Audit Procedures, Roles and Responsibilities

In 2014, and at least every two years thereafter, the City will prepare a biannual SSMP audit for submittal to the RWQCB, and will also retain this audit on file in accordance with the Statewide WDR requirements. The City's SSMP audit form is provided in draft form in Appendix I.

10.3 SSMP Program Modification/Update Process

If the biannual audit identifies significant changes to be made to the SSMP, then the SSMP will be updated by June 30 of the same year in which the audit was submitted. However, it is anticipated that the main SSMP document will remain generally unchanged, and that a comprehensive SSMP update will be completed every five years, as required by the WDR.

Changes made to the SSMP will be documented in the Change Log located in Appendix I. SSMP Audit results will also be included in Appendix I, beginning in 2014.

10.4 Appendix I – SSMP Program Audit Documents



Appendix I includes the following documents related to this section. The information in these documents will change from time to time, and the documents in Appendix I may have been superseded. Please contact the Public Works Director for the most recent updates to the Appendix I documents.

- SSMP Audit Form
- SSMP Change Log
- SSMP Audits (beginning in 2014)



City of Sausalito Sewer System Management Plan

Element 11 Communication Program



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ELEMENT 11 - COMMUNICATION PLAN

This section of the SSMP discusses the City's Communication plan. This section fulfills the Communication Plan requirements for the SWRCB element. There is no requirement in the RWQCB guidelines.

11.1 WDR SSMP Requirement

The requirements for the Communication Plan element of the SSMP are summarized below:

11.1.1 RWQCB Requirement

No requirement.

11.1.2 SWRCB Requirement

The City shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the City as the program is developed and implemented. The City shall also create a plan of communication with systems that are tributary and/or satellite to the sanitary sewer system.

The City shall post the SSMP on its website or otherwise provide the SSMP in electronic form to the SWRCB.

11.2 Communication Plan

The City does not currently have a formal communication plan in place for the communication of SSMP elements, performance or updates. However, the City updates the website with engineering documents as they become available. These documents and related information are published on the Public Works page of the City website. The SSMP will be added to this library for access by the public, and a clear link to the document will be provided on the Public Works page to facilitate access to the document.

Along with the link to the SSMP document, the reference on the website page will be configured to facilitate access to the individual SSMP attachments related to communication, such as SSO warning signage and FOG control literature.

11.3 Appendix J – Communication Plan Documents

There are no Appendix documents to accompany Section IX. However, this Appendix J is included as a placeholder for future documents.



Sewer System Management Plan COMMUNICATION PLAN

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