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Penngrove Sanitation Zone Sewer System Management Plan (SSMP)

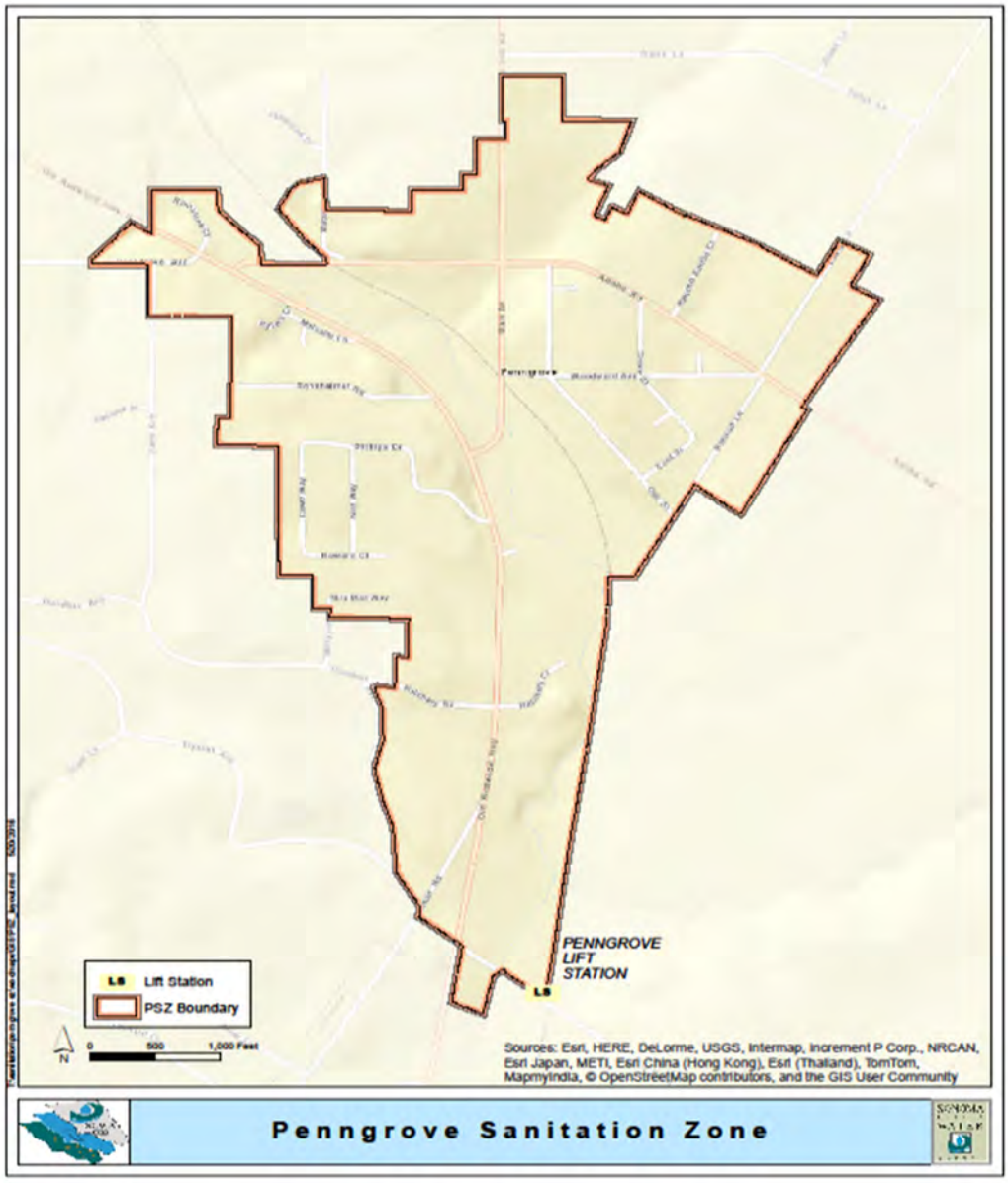

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Table of Contents

Introduction **1**
SSMP Requirement Background 1
Documentation Organization 1
Penngrove Sanitation Zone Service Area and Sewer System 2
Chapter 1 Goal of SSMP **1-1**
1.1 Regulatory Requirements for the Goal Element 1-1
1.2 SSMP Goals 1-1
Chapter 2 Organization **2-1**
2.1 Regulatory Requirements for the Organization Element 2-1
2.2 Positions Responsible for SSMP Implementation 2-1
2.3 Notification and Reporting of SSOs 2-6
2.3.1 Notification 2-6
2.3.2 Reporting 2-6
Chapter 3 Legal Authority **3-1**
3.1 Regulatory Requirements for the Legal Authority Element 3-1
3.2 Sanitation Code Ordinance 3-1
Chapter 4 Operations and Maintenance Program **4-1**
4.1 Regulatory Requirements for Operations and Maintenance Program Element 4-1
4.2 Sanitary Sewer System Mapping 4-1
4.3 Preventive Operation and Maintenance 4-2
4.4 Rehabilitation and Replacement Plan 4-4
4.5 Staff Training 4-4
4.6 Equipment and Parts Inventory 4-4
Chapter 5 Design and Performance Provisions **5-1**
5.1 Regulatory Requirements for the Design and Performance Provisions Element 5-1
5.2 Design and Construction Standards 5-1
Chapter 6 Overflow Emergency Response Plan **6-1**
6.1 Regulatory Requirements for OERP Element of SSMP 6-1
6.2 Overflow Emergency Response 6-1
Chapter 7 Fats, Oils, and Grease (FOG) Control Program **7-1**
7.1 Regulatory Requirements for the FOG Control Program Element 7-1
7.2 Fats, Oils, and Grease (FOG) Legal Authority 7-1
7.3 FOG Control Measures 7-2
Chapter 8 System Evaluation and Capacity Assurance Plan **8-1**
8.1 Regulatory Requirements for the SECAP Element 8-1
8.2 Capacity Evaluation and CIP 8-1
8.3 Design Criteria 8-1
Chapter 9 Monitoring, Measurement, and Program Modifications **9-1**
9.1 Regulatory Requirements for the Monitoring, Measurement, and Program Modifications Element 9-1
9.2 Key Performance Indicators 9-1
9.3 SSMP Performance Review 9-1
Chapter 10 SSMP Program Audits **10-1**
10.1 Regulatory Requirements for the SSMP Program Audits Element 10-1
10.2 General 10-1
10.3 SSMP Audits Discussion 10-1
Chapter 11 Communication Program **11-2**

11.1 Regulatory Requirements for the Communication Program Element 11-2
11.2 Communication Program 11-2

List of Tables

Table 2-1: Narrative Explanation of Responsibilities of SSMP Organization Positions 2-3
Table 2-2: Positions Responsible for SSMP Implementation 2-5
Table 3-1: Summary of Legal Authorities.....3-1

List of Figures

Figure 2-1: SSMP Organization Lines of Authority 2-2
Figure 4-1: Prioritize Preventative Maintenance (PM) and Scheduled Inspections 4-3

Abbreviations and Definitions

ADWF	Average dry weather flow
CCTV	Closed circuit television (inspection)
CEUs	Continuing Education Units
CIP	Capital Improvement Plan
CIWQS	California Integrated Water Quality System. Refers to the SWRCB online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system.
CPP	Capital Projects Plan
CSD	County Sanitation District
CWEA	California Water Environment Association
FOG	Fats, Oils and Grease
GIS	Geographic Information System. Refers to the Sonoma Water's system that is used to store, analyze, and manage geospatial data associated with the PSZ sanitary sewer system assets.
I/I	Infiltration and Inflow. Refers to storm water or groundwater that enter the sanitary sewer system through defects in pipes and manholes (infiltration) or direct drainage connections (inflow).
LRO	Legally Responsible Official
NASSCO	National Association of Sewer Service Companies
OERP	Overflow Emergency Response Plan
OES	California State Office of Emergency Services
O&M	Operations and Maintenance
P3S	Pretreatment, Pollution Prevention, Storm Water
PACP	Pipeline Assessment Certification Program
PM	Preventive Maintenance
RWQCB	Regional Water Quality Control Board
SECAP	System Evaluation and Capacity Assurance Plan
Sonoma Water	Sonoma County Water Agency
PSZ	Penngrove Sanitation Zone
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow. Refers to any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system.
SWRCB	State Water Resources Control Board
W.A.	Water Agency

WDR	Refers to SWRCB Order No. 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems
Zone	Penngrove Sanitation Zone

Introduction

The introductory section provides background information on the purpose and organization of this Sewer System Management Plan (SSMP) and provides a brief overview of the Penngrove Sanitation Zone (PSZ or Zone) service area and sewer system. The Zone is managed and operated by the Sonoma County Water Agency (Sonoma Water).

SSMP Requirement Background

This SSMP has been prepared in compliance with requirements of the California State Water Resources Control Board (SWRCB) promulgated waste discharge requirements on May 2, 2006, to regulate sanitary sewer systems. This permit is known as SWRCB Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WDR). On July 30, 2013, Attachment A to the Order was promulgated and became effective on September 9, 2013, and is known as Attachment A, SWRCB Order No. WQO 2013-0058-EXEC, amending the Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

Documentation Organization

This SSMP is intended to meet the requirements of the Statewide WDR. The organization of this document is consistent with the SWRCB guidelines. The SSMP includes eleven elements, as listed below. Each of these elements forms a section of this document.

1. Goals
2. Organization
3. Legal Authority
4. Operations and Maintenance program
5. Design and Performance Provisions
6. Overflow Emergency Response Plan (OERP)
7. Fats, Oils, and Grease (FOG) Control Program
8. System Evaluation and Capacity Assurance Plan (SECAP)
9. Monitoring, Measurement and Program Modifications
10. SSMP Program Audits
11. Communications Program

Each element section is organized into sub-sections, as follows:

1. Description of the SWRCB requirement for that element.
2. Discussion of element. The discussion may be split into multiple sub-sections depending on length and complexity.

Supporting information for each element is included in an appendix, as applicable. In general, information expected to require relatively frequent updates (such as names and phone numbers of staff) are included in appendices, as well as other supporting information, such as forms or schedules. This main volume of the SSMP is available for review and download on Sonoma Water's website. The full SSMP including all appendices has been provided to the SWRCB as required and is also available for review by interested parties at Sonoma Water's offices.

Penngrove Sanitation Zone Service Area and Sewer System

The PSZ service area comprises 475 acres and serves a population of 1,264 (549 single-family dwelling unit equivalents). Construction of the collection system began in 1960, and the majority (80%) was constructed between 1960 and 1979. It includes 13.6 miles of sewers (9.4 miles of gravity sewer mains, 3.1 miles of force mains, and 1.1 miles of service laterals for which Sonoma Water is responsible) and 1 pump station. The collected sewage from the PSZ sewer system is routed through the PSZ's lift station and force main to the City of Petaluma's sewer system for conveyance to the Petaluma Wastewater Treatment Plant.

Chapter 1 Goal of SSMP

1.1 Regulatory Requirements for the Goal Element

The WDR includes the following goal for the SSMP:

The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system to prevent SSOs and mitigate any SSOs that do occur. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.

1.2 SSMP Goals

The goals of the Penngrove Sanitation Zone are to:

1. Properly manage, operate and maintain all parts of the wastewater collection system;
2. Provide adequate capacity to convey peak design flows;
3. Mitigate the impact of SSOs;
4. Protect the health and safety of the residents of Penngrove;
5. Maintain cost effectiveness while maintaining high efficiency;
6. Be responsive to customers.

Chapter 2 Organization

2.1 Regulatory Requirements for the Organization Element

The requirements for the Organization element of the SSMP are summarized below. The SSMP must identify:

(a) The name of the responsible or authorized representative;

(b) 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; and

(c) *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, Regional Water Board, and/or State Office of Emergency Services (OES)).*

2.2 Positions Responsible for SSMP Implementation

Error! Reference source not found. is the organizational chart and job descriptions for the Penngrove Sanitation Zone (Zone) employees who are involved in either preparing the Sanitary Sewer Management Plan or responding to sanitary sewer overflows. Please note that some of the job descriptions refer to "Water Agency". The Zone is managed by Sonoma Water. Therefore, the Zone's organizational chart is the same as Sonoma Water's organizational chart (see below). **Table 2-1** summarizes the roles and responsibilities relevant to the sanitary sewer system infrastructure of the key positions shown on the organization chart, and **Table 2-2** identifies the positions responsible for each element of the SSMP. The names and telephone numbers for management, administrative, and maintenance positions are included in Appendix C.

Figure 2-1: SSMP Organization Lines of Authority

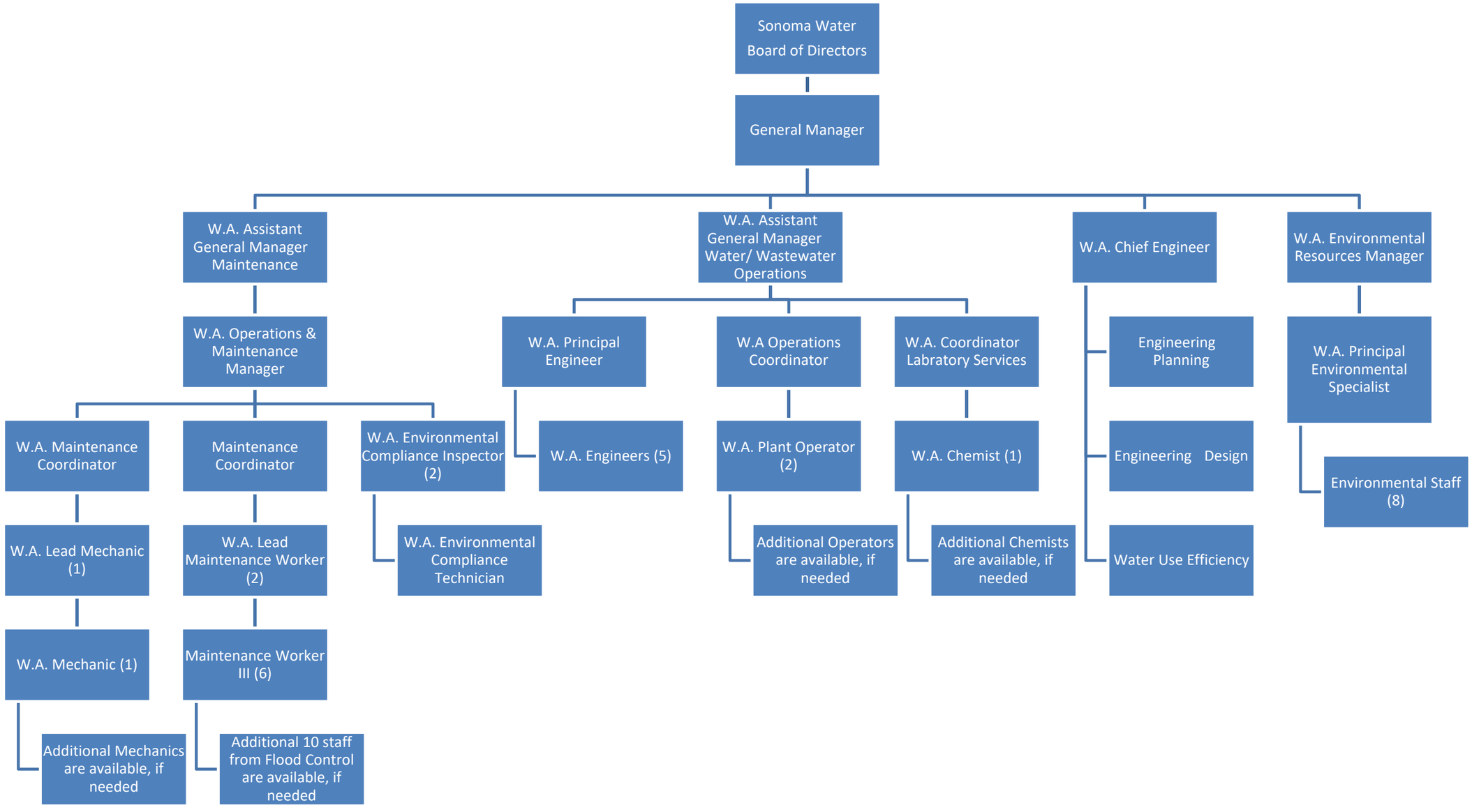


Table 2-1: Narrative Explanation of Responsibilities of SSMP Organization Positions

Position	Narrative Explanation
Board of Directors	Establishes policy and authorizes outside contractors to perform services for the Zone.
General Manager	The General Manager is the principal administrative person in overall charge of the Penngrove Sanitation Zone.
W.A. Chief Engineer	The Chief Engineer is professionally responsible for the engineering activities of the Zone, and reviews and approves all plans and specifications for engineered works and all reports requiring professional engineering judgment.
W.A. Assistant General Manager – Water/ Wastewater Operations	Plans, organizes, directs, and coordinates the Operations and Engineering section. Directs the operation of systems and facilities, for the collection, treatment, storage, and disposal of wastewater and the reuse of reclaimed water; reviews plans for the operation of new wastewater facilities. Directs the compliance with federal, state and local water quality related regulations and prepares action plans to ensure full compliance with those regulations. Directs negotiations of regulatory permits that relate to the operation of wastewater facilities. Prepares wastewater collection system planning documents, coordinates development and implementation of SSMP. The Assistant General Manager – Water/Wastewater Operations is a designated legally responsible official (LRO) for purposes of SSO reporting.
W.A Principal Engineer	Direct and supervise works on applicable permits, laws, and regulations. Provides support to all parts of operations. Responsible for preparing SSMP. The W.A. Principal Engineer is a designated legally responsible official (LRO) for purposes of SSO reporting
W.A. Operations Coordinator	The Water Agency Coordinator - Operations is expected to possess an understanding of the full spectrum of operations involved in wastewater systems. Responsible for providing relevant information to management, prepares and implements contingency plans, leads emergency response, investigates and reports SSOs. The Operations Coordinator is a designated LRO for purposes of SSO reporting.
W.A. Plant Operator	Manages field operations and maintenance activities, provides relevant information to management, prepares and implements contingency plans, collects and prepares samples.
W.A. Operations Coordinator – Laboratory Services	Coordinates, plans, organizes and directs and evaluates the activities of the water quality laboratory; performs difficult laboratory analyses related to the operation of secondary and tertiary wastewater treatment systems and a potable water supply system; and provides technical staff assistance. Develops and maintains water quality monitoring programs to meet wastewater and drinking water regulations and engineering needs.
W.A. Chemist	Collects and prepares samples of sanitary sewer overflows, when needed. Assists in setting up a county-wide effluent sampling program and industrial waste program, and ensures programs are carried out.

Position	Narrative Explanation
W.A. Assistant General Manager – Maintenance	Plans, organizes, directs, and coordinates the maintenance-oriented sections within Sonoma Water. Directs the maintenance of systems and facilities for the collection, treatment, storage, and disposal of wastewater and the reuse of reclaimed water; directs the reviews plans for maintenance of wastewater facilities. The Assistant General Manager – Maintenance is a designated LRO for purposes of SSO reporting.
W.A. Operation and Maintenance Manager	Directs the maintenance of systems and facilities for the collection, treatment, storage, and disposal of wastewater and the reuse of reclaimed water; directs the reviews plans for maintenance of wastewater facilities. The Operation and Maintenance Manager is a designated LRO for purposes of SSO reporting.
W.A. Maintenance Coordinator	The Water Agency Maintenance Coordinator investigates and reviews SSOs reports, and trains field crews. The Water Agency Maintenance Coordinator is a designated LRO for purposes of SSO reporting.
W.A. Lead Mechanic	Plans, schedules, assigns, and reviews the work of assigned crews and contracted workers; in conjunction with management functions as a project manager by establishing work priorities, monitoring and adjusting timelines, and coordinating the required staffing and equipment needs; coordinates the day-to-day operations of crews performing maintenance, repair, installation, and construction work on the Water Agency's wastewater collection systems and water distribution systems, wastewater treatment facilities,
Maintenance/Industrial Waste Coordinator	Plans, assigns, schedules and prioritizes the work of personnel engaged in flood control, the industrial waste program, and building maintenance and sanitation services. Typical duties include: construction, inspection, maintenance, monitoring and repair of flood control channels, water transmission systems, industrial waste facilities and wastewater collection systems
W.A. Lead Maintenance Worker	The Water Agency Lead Maintenance Worker is responsible for directly leading a crew of employees engaged in the overall technical maintenance and repair of the wastewater treatment and collection systems. Leads emergency response, investigates and reports SSOs to Water Agency Coordinator, and trains field crews. The Water Agency Lead Maintenance Worker is a designated LRO for purposes of SSO reporting.
W.A. Maintenance Workers (II & III)	Maintenance Workers participate in the installation, maintenance and repair of wastewater treatments systems. Determine appropriate action of day to day operations and in emergency situations in the field. Mobilize and respond to notification of stoppages and SSOs (mobilize sewer cleaning equipment, by-pass pumping equipment, and portable generators, etc.).
W.A. Environmental Compliance Inspector	Collects and prepares samples of sanitary sewer overflows, when needed. Assists in setting up a county-wide effluent sampling program and industrial waste program, and ensures programs are carried out.

Position	Narrative Explanation
W.A. Environmental Compliance Technician	The Water Agency Environmental Compliance Technician is a paraprofessional-level class performing technical work. An employee in this class works initially under close and later under general supervision assisting with inspections and evaluations and learning to ensure that wastewater discharge meets mandated requirements.
W.A. Environmental Resources Manager	The Water Agency Environmental Resources Coordinator plans, directs, manages, coordinates, and supervises the work of the Environmental Resources Division of Sonoma Water; coordinates and participates in Federal and State legislative efforts; recommends, develops, implements and evaluates policies and procedures; and performs related duties as required.
W.A. Principal Environmental Specialist	Plans, organizes, and supervises the activities of a single section in the Environmental Resources Division in Sonoma Water engaged in environmental related planning or other services such as fish and wildlife; botanical, wetland resource, and soil morphology; arboriculture/revegetation; and environmental document analysis; recommends and implements changes, policies, and procedures; prepares and/or oversees the preparation of related environmental reports; and performs related duties as required.

Table 2-2: Positions Responsible for SSMP Implementation

SSMP Element	Responsible Party (Position)
Introduction	Water Agency Principal Engineer
1 – Goals	Water Agency Principal Engineer
2 – Organization	Water Agency Principal Engineer
3 – Legal Authority	Water Agency Principal Engineer
4 – O&M Program	Maintenance/Industrial Waste Coordinator
5 – Design & Performance Provisions	Water Agency Principal Engineer
6 – Overflow Emergency Response Program	Maintenance/Industrial Waste Coordinator
7 – FOG Control Program	Maintenance/Industrial Waste Coordinator
8 – SECAP	Water Agency Principal Engineer
9 – Monitoring, Measurement, and Program Modifications	Maintenance/Industrial Waste Coordinator
10 – SSMP Program Audits	Water Agency Principal Engineer
11 – Communication	Water Agency Principal Engineer
Change Log	Water Agency Principal Engineer
Appendices	Water Agency Principal Engineer

2.3 Notification and Reporting of SSOs

Information in this section is from Section 3 of the Sewer System Overflow Emergency Response Plan (OERP), which defines the Sonoma Water's chain of communications for reporting spills from sanitary sewers and lift stations. It includes information about overflow notification and reporting procedures.

2.3.1 Notification

The following overflow notification procedures will be followed.

1. The Water Desk Operator shall use Attachment 3-1 (Reporting Procedures for SSO) of the OERP to categorize the overflow and determine the appropriate persons and organizations to report the overflow to.

2. The Operations Coordinator shall notify the people listed on Attachment 3 of the OERP. The Assistant General Manager - Maintenance shall be responsible for notifying the General Manager and the Sonoma Water Board of Directors if the spill size and impact warrant notification.

3. The Collection System Maintenance Coordinator shall complete a Maintenance Crew Report of Overflow or Stoppage form (See Appendix A of the OERP, included in Appendix D) within 24 hours of the reported overflow confirmation. The Maintenance Crew Report of Overflow or Stoppage shall be submitted to the appropriate RWQCB. Attachment 3-1 summarizes, in part, the regulatory notification and reporting requirements.

4. Similar to overflows from collection systems, notification of a lift station overflow is received from the Water Desk Operator by the Collection System Maintenance Coordinator who coordinates with the Mechanic Coordinator. The Mechanic Coordinator shall initiate the investigation and correction of the cause of the overflow. The Collection System Maintenance Coordinator will coordinate any overflow cleanup and communicate to the Operations Coordinator if the overflow reached surface water or a storm drain.

2.3.2 Reporting

Significant Overflow to Surface Water and/or Drainage Inlet

In the event of a significant overflow of 1,000 gallons or more to surface water and/or a drainage inlet, a report to California Office of Emergency Services (Cal OES) is necessary within 2 hours in addition to regular overflow response actions.

Major Overflow to Surface Water and/or a Drainage Inlet

In the event of a major overflow of 50,000 gallons or more to surface water and/or a drainage inlet, a report to California Office of Emergency Services (Cal OES) is necessary within 2 hours and sampling must be performed within 48 hours of initial overflow notification in addition to regular overflow response actions.

Chapter 3 Legal Authority

This section of the SSMP discusses the Sonoma Water's legal authority to comply with the SSMP requirements, as provided in its Sanitation Code.

3.1 Regulatory Requirements for the Legal Authority Element

The requirements for the Legal Authority element of the SSMP are summarized below:

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

(a) 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.);

(b) Require that sewers and connections be properly designed and constructed;

(c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;

(d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages; and

(e) Enforce any violation of its sewer ordinances.

3.2 Sanitation Code Ordinance

The Zone's legal authority derives from Sonoma Water's Sanitation Code Ordinance. The Sanitation Code Ordinance sets forth uniform requirements for contributors to the wastewater collection and treatment system, and enables Sonoma Water to comply with all applicable State and Federal laws required by the Clean Water Act of 1977, as amended, and the General Pretreatment Regulations (40 CFR Part 403) which are on file at the Sonoma Water office. The Sonoma Water Sanitation Code Ordinance can be found at the following: http://www.scwa.ca.gov/sanitation-codes/. **Table 3-1** summarizes the key legal authorities contained in the Ordinance.

Table 3-1: Summary of Legal Authorities

Requirement	Enrollee Code Reference[a]
PUBLIC SEWERS	
Ability to prevent illicit discharges into the wastewater collection system	Article I – General Provisions
Ability to require that sewers and connections be properly designed and constructed	Article IV – Terms and Conditions for Construction of Sanitation Facilities
LATERALS	
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the Enrollee	Article VI – Source Control Program
FOG SOURCE CONTROL	
Ability to limit the discharge of FOG and other debris that may cause blockages	Article X – Grease, Oil, and Sand Interceptor Program
ENFORCEMENT	
Ability to enforce any violation of the Enrollee's sewer ordinances	Article VII - Enforcement

Requirement	Enrollee Code Reference[a]
OTHER RELEVANT CODE SECTIONS	
PUBLIC SEWERS	
Ability to require proper installation, testing, and inspection of new and rehabilitated sewers	Article III – General Conditions for Sewer Service
LATERALS	
Provide clear delineation of Enrollee responsibility (e.g., mains and lower laterals) and policies (e.g., courtesy cleaning, repair, cleanout installation)	Article III – General Conditions for Sewer Service
Define lateral ownership and maintenance responsibility	Article III – General Conditions for Sewer Service
FOG SOURCE CONTROL	
Requirements for the installation of GRDs	Article X – Grease, Oil, and Sand Interceptor Program
Ability to set design standards for GRDs	Article X – Grease, Oil, and Sand Interceptor Program
Authority to inspect grease producing facilities	Article X – Grease, Oil, and Sand Interceptor Program
ENFORCEMENT	
Prescribe prohibited actions (e.g., illicit connections, discharges)	Article VII - Enforcement
Provide notice of alleged violations to sewer user	Article VII - Enforcement

*All codes references can be found in the Sonoma Water's Sanitation Code Ordinance

Chapter 4 Operations and Maintenance Program

This section of the SSMP provides an overview of the Zone's sewer system operations and maintenance (O&M) program. The elements of the Zone's sewer system O&M Program include maintenance of gravity sewers, operational inspection and maintenance of pump stations, and sewer and manhole inspection, rehabilitation and replacement. The details of the Zone's O&M programs are described in this section.

4.1 Regulatory Requirements for Operations and Maintenance Program Element

The summarized requirements for the Operations and Maintenance Program are:

(a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;

(b) 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 preventative maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;

(c) 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-term and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;

(d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and

(e) Provide equipment and replacement part inventories, including identification of critical replacement parts.

4.2 Sanitary Sewer System Mapping

Sonoma Water maintains an up-to-date GIS map of the PSZ collection system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable facilities.

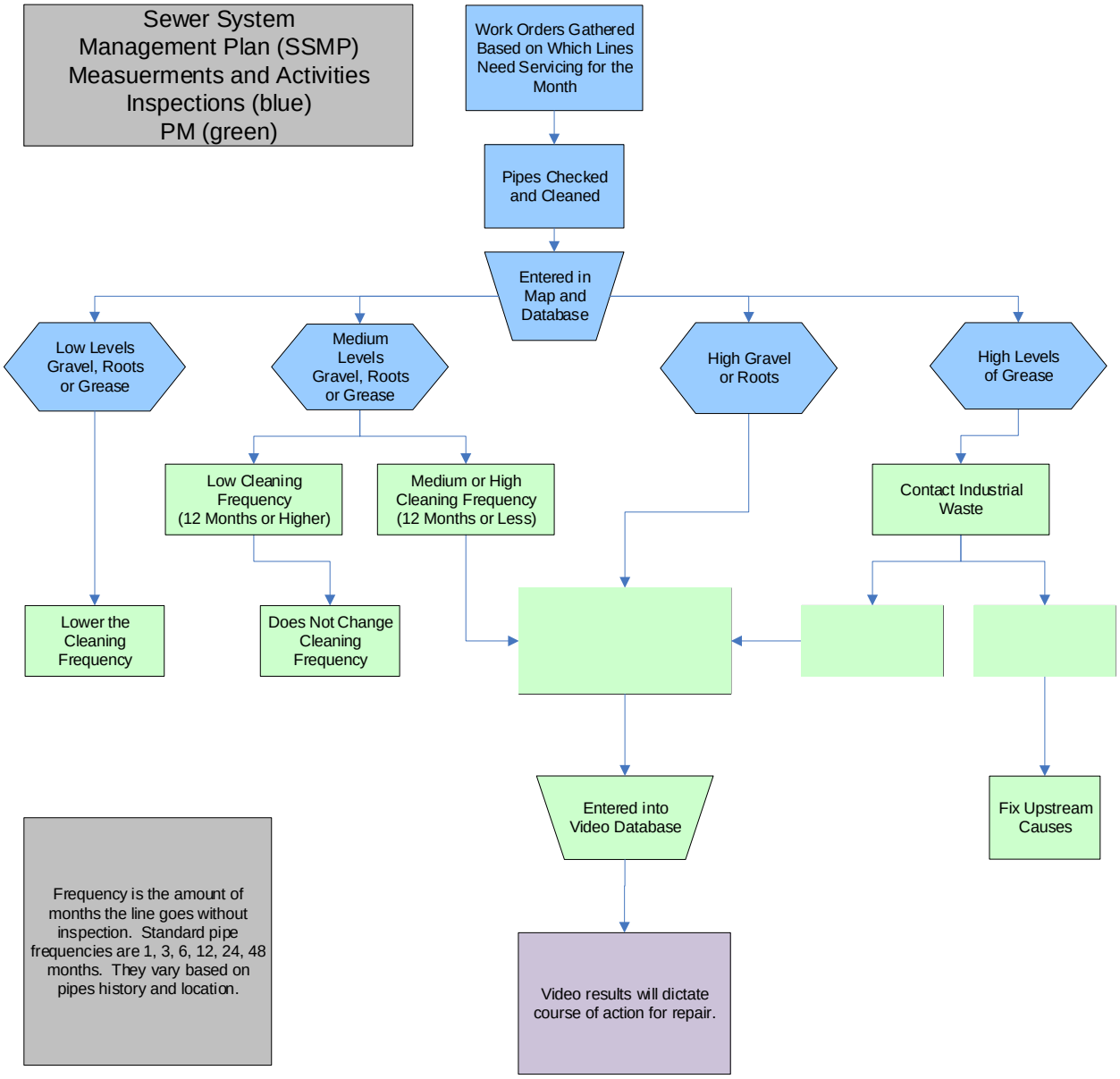
4.3 Preventive Operation and Maintenance

In order to maintain the health of the sewer lines, a step-by-step process is being implemented to ensure that not only will damaged facilities will be fixed quickly but they will be prevented in the future. Although the management of the sewer lines is systematic, subjectivity and maintenance expertise is needed for the evaluation of the lines. All lines are put on an evaluation/cleaning schedule when they are first cleaned. Evaluation/cleaning frequencies start at every month and increase to intervals of 3, 6, 12, 24 and 48 months. Sonoma Water use the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) rating criteria when evaluating its pipelines.

At the beginning of the month sewer lines that are due to be evaluated according to the schedule are placed on a list which is given to the Sonoma Water maintenance crew. These sewer lines are then evaluated and cleaned and, depending on the level of intrusion, evaluation/cleaning frequencies are updated. Sewer lines are evaluated based on low medium or high amounts of gravel, roots and grease intrusion. Sewer lines with low amounts of intrusions are less prone to SSOs, so the frequency of evaluation/cleaning is reduced. Depending on the area and history of the pipe, an evaluation revealing medium intrusion will either result in the same evaluation/cleaning frequency or an increase in the evaluation/cleaning frequency. Any high intrusion result requires further attention.

For high levels of grease, Sonoma Water's Industrial Waste staff is contacted in order to inspect upstream discharges. High levels of gravel, roots or grease also requires the sewer lines to be videoed to check for needed maintenance. All of the cleaned sewer lines that have no maintenance or video orders issued are entered into the computer database. Any lines that require video inspection are then entered into the video list database. If a video shows any slight offsets then no repair order is issued but the evaluation/cleaning frequency of the sewer line is increased. If there is a severe obstruction or offset then the sewer line needs repairing and entered into the repair database. These separate databases offer easy access and history to each of the sewer lines in the system. When the sewer line is repaired, a summary, the date and the crew are entered into the database and it then goes on the completed construction list. After repair the sewer line is checked within one month. At that time, the evaluation/cleaning frequency will either be changed or remain the same (See **Figure 4-1** below).

Figure 4-1: Prioritize Preventative Maintenance (PM) and Scheduled Inspections



4.4 Rehabilitation and Replacement Plan

Assessments of pipelines is conducted by closed circuit television (CCTV). Pipeline structural conditions are assigned a grade based on the PACP rating system. Sonoma Water considers a pipeline to be significantly defective if its condition receives a grade of 4 or 5 based on the PACP rating system. The PACP assigns grades based on the significance of the defect, extent of damage, percentage of flow capacity restriction, and/or the amount of pipe wall loss due to deterioration. Grades are assigned as follows:
5 – Most significant defect
4 – Significant defect
3 – Moderate defect
2 – Minor to moderate defect
1 – Minor defect

A pipeline that receive a grade of a 4 or 5 is immediately scheduled for repair and/or rehabilitation. Most repair and/or rehabilitation occur within two weeks. Some require longer period due to the complexity of the issue.

Each year Sonoma Water evaluates potential projects. While some projects may remain in the Capital Project Plan (CPP), others may be dropped for a higher priority project. The CPP is a living document and is constantly changing. Sonoma Water uses the CPP as a planning document. Perspective readers should be aware that this document changes annually. To see the most current version, click on the following link: http://www.scwa.ca.gov/capital-projects/ and select “View Capital Projects Plan”.

4.5 Staff Training

The Zone is operated by Sonoma Water. Sonoma Water’s maintenance staff is required to complete 12 Continuing Education Units (CEUs) annually. Workshops and/or conferences must be accredited by the California Water Environment Association (CWEA). Several of the accredited workshops are held at Sonoma Water offices by Sonoma Water staff who are accredited by CWEA. Workshops such as Confined Space, Air Monitoring, CPR, Excavation/Trenching Safety, Hazardous Energy Control, Traffic Control, and Fall Control are available to the maintenance staff.

Maintenance staff are also encouraged to attend workshops and/or conferences on topics such as Collection System Maintenance, Environmental Compliance, Plant Maintenance, and Mechanical Technology.

4.6 Equipment and Parts Inventory

Sonoma Water maintains an inventory of contingency equipment in order to lessen equipment or facility downtime. Contingency equipment such as portable pumps and generators are also kept on hand so as to insure proper response to emergencies. Along with the pumps and generators, other equipment, such as vactor trucks, a router, back hoes, a dump truck, bobtails, a wacker, viber plates, and ten wheelers are kept in inventory. These preparatory measures are made in order to guarantee that in the event of a failure, the Zone will experience minimal service interruptions. A current list of contingency equipment is included in Appendix E.

Chapter 5 Design and Performance Provisions

This element of the SSMP presents Sonoma Water's Design and Construction Standards for sewer systems.

5.1 Regulatory Requirements for the Design and Performance Provisions Element

The requirements for the Design and Performance Provisions element of the SSMP are summarized below:

(a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and

(b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

5.2 Design and Construction Standards

Sonoma Water's Design and Construction Standards apply to the design and construction of all public sewerage facilities and are consistent with rules and regulations in Sonoma Water's Sanitation Zones and County Sanitation Districts, whether privately financed and/or constructed under permits issued by Sonoma Water or publicly financed and constructed under contract with Sonoma Water.

Sonoma Water's jurisdiction includes the entire sewerage system and its appurtenances from the point of connection with the building plumbing to the discharge terminus of the final disposal or use. Maps showing the sanitation boundaries are available for inspection at Sonoma Water's office.

When deemed necessary by the General Manager or Chief Engineer, special provisions, specifications addenda, and/or notes on the plans shall be provided and shall be considered as part of the specifications for the work.

The Sanitation Code of the Water Agency and County Sanitation Districts comprises Sonoma Water's rules and regulations with respect to the construction and use of sanitary sewerage facilities. In general, the ordinances: 1) provide the Board of Directors for Sonoma Water and the County Sanitation Districts policy and authority of the General Manager; 2) provide regulations for lateral sewer construction and for the use and construction of public sewers; 3) provide for annexation, plan checking, and permit and inspection fees; and 4) provide the establishment of connection charges. A knowledge of the ordinance provisions and polices is essential to those proposing to design and construct sewerage facilities under permit in Sonoma Water's sanitation districts and zones.

Sonoma Water's Design and Construction Standards can be found at: http://www.scwa.ca.gov/sanitation-codes/

Chapter 6 Overflow Emergency Response Plan

The Sewer System Overflow Emergency Response Plan (OERP) defines Sonoma Water's plans, procedures and requirements for responding, remediating and reporting spills from sanitary sewers and lift stations.

6.1 Regulatory Requirements for OERP Element of SSMP

The WDR includes the following requirements for the development of an Overflow Emergency Response Plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;

(b) A program to ensure appropriate response to all overflows;

(c) 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 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 Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;

(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;

(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

(f) 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 Overflow Emergency Response

The purpose of the OERP is to assure a prompt and appropriate level of response is made to every reported sewage spill in the Zone received by Sonoma Water so that adverse effects to public health, water quality, the environment, and public and private property can be minimized. The OERP further includes provisions to ensure notifications and reports are made to the appropriate local, state and federal authorities, and that response actions taken are properly documented. By responding promptly with adequate resources to sewage spills, and providing regulatory agencies with required spill notification and spill reports, the risk of enforcement actions against Sonoma Water can be minimized.

The core elements of the OERP are the spill response procedures, and the regulatory agency spill notification and reporting requirements. The OERP provides continuity between primary elements, from the initial receipt of a spill notification through completion of the regulatory spill report. In addition to these primary elements, the OERP also addresses public notification procedures, public education, public outreach, training and OERP updating. These additional elements are essential to the maintenance and development of the OERP.

Sonoma Water's OERP is included in Appendix D.

Chapter 7 Fats, Oils, and Grease (FOG) Control Program

This section presents Sonoma Water's Fats, Oils, and Grease (FOG) Control Program.

7.1 Regulatory Requirements for the FOG Control Program Element

The WDR requirements for the FOG Control element of the SSMP are:

The collection system agency shall evaluate its service area to determine whether a FOG control program is needed. If the collection system agency determines that a FOG program is not needed, the collection system agency must provide justification for why it is not needed. If FOG is found to be a problem, the collection system agency 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:

(a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;

(b) 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;

(c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;

(d) 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;

(e) Authority to inspect grease producing facilities, enforcement authorities, and determination of whether the collection system Agency has sufficient staff to inspect and enforce the FOG ordinance;

(f) An identification of sewer system sections subject to FOG blockages and the establishment of a cleaning maintenance schedule for each section; and

(g) Development and implementation of source control measures, for all sources of FOG discharged to the sewer system, for each sewer system section identified in (f) above.

7.2 Fats, Oils, and Grease (FOG) Legal Authority

Under Sonoma Water's Sanitation Code Ordinance, Article X, "Grease, Oil, and Sand Interceptor Program", the agency is granted the authority to implement a FOG Program. Article X discusses grease traps, oil and sand interceptors, administration of the interceptor program, and enforcement.

Ordinance, Article X, Section 10.01 states that "All non-domestic users, including restaurants, gas stations, and auto repair establishments with floor drains located in service areas and auto or vehicle washing facilities, shall be required to install and maintain a grease, oil, and sand interceptor at the users own expense when the General Manager finds that it is necessary for the proper handling of (a) liquid waste containing grease, (b) flammable waste, (c) sand, or (d) other harmful constituents which may be properly eliminated from the sewerage system by use of an interceptor or trap.

Sonoma Water's Ordinance, Article X, "Grease, Oil, and Sand Interceptor Program" can be found at the following link: http://www.scwa.ca.gov/sanitation-codes/ within the Water Agency Sanitation Code.

7.3 FOG Control Measures

In an effort to prevent blockages in the Zone's collection system from Fats, Oils and Grease (FOG) generated by commercial food service facilities, Sonoma Water requires food service establishments to install grease removal devices. Details of the FOG program are outlined in Article X of the Sanitation Code.

Since 2016 the Zone has had no SSOs attributed to FOG. The data illustrates that FOG is not an issue and that the current FOG control program is sufficient at this time. Sonoma Water has increased routine inspections of food facilities and is developing a new database to better track inspections and FOG related issues. When a spill occurs that is the result of FOG, Sonoma Water's Industrial Waste staff walks the area and places FOG door hangers letting residents know the problems FOG can have on the sewer collection system. As a part of Sonoma Water's normal inspection routine of businesses, a grease scrapper and a guide on "Food Facility Storm Water Pollution Prevention" guidelines are handed out to each home. The guidelines contain information on grease handling as well as spill clean-up, hazardous waste, and the importance of grease traps/interceptors maintenance. In addition, businesses are told of agencies in the area that accept FOG.

Sonoma Water participates in the Pretreatment, Pollution Prevention, Storm Water (P3S) working group in the North Bay. P3S is a group of public agencies (Air Resources Board, Certified Unified Program Agencies, Storm Water, Regional Board, Hazardous Waste, and Local Authorities) in the North Bay that discusses a number of issues, of which FOG is one of them. The group meets every other month, which allows for a consistent message to be told in the North Bay.

Chapter 8 System Evaluation and Capacity Assurance Plan

This section of the SSMP presents Sonoma Water's approach to ensuring that the PSZ sanitary sewer system has adequate hydraulic capacity through a System Evaluation and Capacity Assurance Plan (SECAP).

8.1 Regulatory Requirements for the SECAP Element

The WDR requirements for the SECAP element of the SSMP are:

The Agency shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:

(a) ***Evaluation:*** *Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;*

(b) ***Design Criteria:*** *Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and*

(c) ***Capacity Enhancement Measures:*** *The steps needed to establish a short- and long-term 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 capital improvement plan shall include an implementation schedule and shall identify sources of funding.*

(d) ***Schedule:*** *The Agency shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a) - (c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements in Section D. 14.*

8.2 Capacity Evaluation and CIP

The PSZ sanitary sewer collection system includes primarily small diameter sewer pipelines ranging in size from 6 to 10 inches in diameter. Wastewater generated in the system is conveyed to a lift station, which pumps the flows through a 6-inch diameter force main to the City of Petaluma's collection system, from where it is conveyed to Petaluma's wastewater treatment plant for treatment and disposal. The lift station has been subject to flooding due to its location adjacent to a creek, and the force main will eventually need structural upgrades and possible relocation. The PSZ collection system has not experienced any SSOs due to hydraulic deficiencies in the system. Therefore, no formal capacity evaluation or capacity enhancement measures are required. Sonoma Water's CIP includes a lift station flood protection project as well as an annual budget allocation for sewer and lift station replacements to address any identified deficiencies.

8.3 Design Criteria

Design criteria for sewer system facilities are contained in Sonoma Water's Design and Construction Standards (refer to Chapter 5, Design and Performance Provisions).

Chapter 9 Monitoring, Measurement, and Program Modifications

This section of the SSMP discusses how Sonoma Water measures the effectiveness of SSMP elements and monitors their implementation.

9.1 Regulatory Requirements for the Monitoring, Measurement, and Program Modifications Element

The requirements for the Monitoring, Measurement, and Program Modifications element of the SSMP are to:

(a) *Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;*

(b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;

(c) Assess the success of the preventative maintenance program;

(d) Update program elements, as appropriate, based on monitoring or performance evaluations; and

(e) Identify and illustrate SSO trends, including: frequency, location, and volume.

9.2 Key Performance Indicators

The effectiveness of SSMP elements is measured by developing and tracking performance indicators on a regular basis. Sonoma Water maintains and tracks information on routine maintenance activities and SSO abatement programs that allows analysis and evaluation of changed conditions.

Key performance indicators incorporated include:

- Number of dry weathers SSOs over the past 12 months, (12-month average)
- Number and characteristics of wet weather SSOs over the past 12 months,
- SSOs by cause (e.g. roots, grease, debris, pipe failure, pump station failure, capacity, other)
- Volume distribution of SSOs (e.g. number of SSOs < 100 gallons, 100 to 999 gallons, 1,000 to 9,999 gallons, > 10,000 gallons)
- Annual volume of SSOs
- Average time to respond to an SSO
- Total feet inspected by year
- Record of past repair, rehabilitation, and replacement projects
- Record of planned repair, rehabilitation, and replacement projects
- Plans developed for, or implementation of, activities to target specific problems identified, such as roots, structural deficiencies, or fats, oil, and grease (FOG)
- Record of FOG outreach and corrective actions

9.3 SSMP Performance Review

Sonoma Water senior staff and management utilize this information, as well as the other data products produced throughout the year, to periodically review performance of the SSMP elements. There is a focus on the preventative maintenance program to ensure that the agency's resources are being allocated efficiently. The SSMP performance review also looks at SSO trends including frequency, location, volume, and cause. This helps the agency to analyze hotspot locations and cleaning frequency, resources, and

general areas where additional attention is required. The outcome of the review may lead to changes in the SSMP to continue to improve collection system performance in a fiscally responsible manner.

Chapter 10 SSMP Program Audits

This section of the SSMP presents the process Sonoma Water will follow to audit its SSMP and related programs.

10.1 Regulatory Requirements for the SSMP Program Audits Element

> *As part of the SSMP, the Enrollee 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 Agency's compliance with the SSMP requirements identified in this subsection (D.13 of the WDR), including identification of any deficiencies in the SSMP and steps to correct them.*

10.2 General

The SSMP Audits element of the SSMP requires that the agency conduct a biennial audit of the PSZ SSMP that identifies any deficiencies, and steps to correct them that are appropriate to the size of the Zone's system and the number of overflows.

This audit contains information about successes/failures in implementing the most recent version of the Zone's SSMP and identifies any revisions necessary for a more effective program.

10.3 SSMP Audits Discussion

Monitoring and measurements data, as are recorded in accordance with Section 9 of this plan, will be used in preparation of the audit. An explanation of the Zone's SSMP development and accomplishments in improving the sewer system will be included in the audit report, including:

1. Progress made on development of SSMP elements.
2. Comparison of progress with planned schedule.
3. Justification on any delays with development of the SSMP.
4. Sonoma Water's implementation of SSMP elements in the past year.
5. The effectiveness of implementing SSMP elements.
6. Description of the additions and improvements made to the sanitary sewer collection system in the past reporting year.
7. Description of the additions and improvements planned for the upcoming reporting year with an estimated schedule for implementation.

Appendix F includes a copy of the most recent audit report.

Chapter 11 Communication Program

This section of the SSMP outlines the process involved in communicating with interested members of the public regarding the development, implementation, and performance of this plan.

11.1 Regulatory Requirements for the Communication Program Element

The Agency shall:

a. *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 Agency as the program is developed and implemented.*

b. *Create a plan of communication with systems that are tributary and/or satellite to the Agency's sanitary sewer system.*

11.2 Communication Program

Sonoma Water will include SSMP updates annually in one of its sanitation newsletters. The public has an opportunity for input into the process at any of the Sonoma Water Board meetings. Currently, there are no publicly owned sewer collection systems that are tributary and/or satellite to the PSZ sewer collection system. If a collection system becomes tributary and/or satellite to the PSZ collection system, Sonoma Water will develop and maintain regular communication on sewer system issues with that system's staff.

The public may find information about the SSMP by going to the Sonoma Water website (sonomawater.org). Persons who have further questions and comments may email Kevin Booker at Kevin.Booker@scwa.ca.gov.