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County of Santa Cruz

FREEDOM COUNTY SANITATION DISTRICT

701 OCEAN STREET, ROOM 410, SANTA CRUZ, CA 95060-4070
(831) 454-2160 FAX (831) 454-2385 TDD (831) 454-2123

APPROVED AND FILED
BOARD OF SUPERVISORS
DATE: 11/15/11
COUNTY OF SANTA CRUZ
SUSAN A. MAURIELLO
EX-OFFICIO CLERK OF THE BOARD
BY _____ DEPUTY

JOHN J. PRESLEIGH
DISTRICT ENGINEER

NOV 2011
RECEIVED
PUBLIC WORKS DEPT
SANTA CRUZ, CA.

AGENDA: NOVEMBER 15, 2011

November 2, 2011

FREEDOM COUNTY SANITATION DISTRICT
BOARD OF DIRECTORS
701 Ocean Street
Santa Cruz, CA 95060

SUBJECT: PUBLIC HEARING TO ADOPT SANITARY SEWER MANAGEMENT PLAN FOR THE FREEDOM COUNTY SANITATION DISTRICT

Members of the Board:

On October 25, 2011, your Board set a public hearing for today to consider adoption of a proposed Sanitary Sewer Management Plan (SSMP). A copy of the proposed SSMP is attached for your review. As your Board may recall, the State Water Resources Control Board adopted Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems in its Water Quality Order No. 2006-0003 (Sanitary Sewer Systems WDRs) of May 2, 2006. The Sanitary Sewer Systems WDRs require public agencies that own or operate sanitary sewer systems to develop and implement an SMPP.

As required by that order, an SSMP was developed for the Santa Cruz County Sanitation District, Freedom County Sanitation District, Davenport County Sanitation District, and sanitation County Service Areas in one comprehensive document. The SSMP includes provisions that will provide proper and efficient management, operation, and maintenance of sanitary sewer systems. It also contains a spill response plan that establishes standard procedures for immediate response to a sanitary sewer overflow in a manner designed to minimize water quality impacts and potential nuisance conditions.

Agencies are required to certify that the SSMP and its constituent subparts are in compliance with the State Sanitary Sewer Systems WDRs. Prior to certification, however, agencies must obtain their governing Board's approval of the SSMP at a public hearing.

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It is therefore recommended that the Board of Directors take the following actions:

1. Open the public hearing to take public testimony on a proposed Sanitary Sewer Management Plan.

2. Close the public hearing.

3. Adopt the attached resolution approving the Sanitary Sewer Management Plan.

Yours truly,

JOHN J. PRESLEIGH
District Engineer

JJP:JES:rw

Attachments

RECOMMENDED FOR APPROVAL:

County Administrative Officer

Copy to: Public Works

	ROUTE DATA	COPY	ATT.
1	DIRECTOR	✓	
2	ASST. DIR. SPEC. SVCS.	✓	
	RECYCLING/SOLID WASTE		
	LANDFILL OPERATIONS		
	WATER CON/FLOOD CONT.		
	STORM WATER MANG.		
	CONSTRUCTION ENG.		
3	SANITATION ENG.	✓	✓
4	WATER & WASTEWATER	✓	✓
	ASST. DIR. TRANSPORT.		
	ROAD OPS. ENG.		
	PERMITS / ENCROACH.		
	DRAINAGE OPERATIONS		
	RD. MAINT. OPERATIONS		
	RDA ENG.		
	ROAD DESIGN ENG.		
	SURVEY / DEVELOPMENT.		
	TRANSP / RD. PLANNING		
	ASST. DIR. ADMIN. SVCS.		
	REAL PROPERTY / FLEET		
	CSA / PRGM ADMIN.		
	SAFETY OFFICER / LIVE OAK P.		
	PERSONNEL / MIS		

BEFORE THE BOARD OF DIRECTORS
OF THE FREEDOM COUNTYSANITATION DISTRICT
STATE OF CALIFORNIA

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RESOLUTION NO. 348-2011

On the motion of Directors Pirie
duly seconded by Directors Coonerty
the following resolution is adopted:

RESOLUTION APPROVING SANITARY SEWER MANAGEMENT PLAN
FOR FREEDOM COUNTY SANITATION DISTRICT

WHEREAS, the State Water Resources Control Board and the Regional Water Quality Control Board regulate the management, operation, and maintenance of the County's sanitary sewer system; and

WHEREAS, the State Water Resources Control Board and the Regional Water Quality Control Board Order No. 2006-0003-DWQ (General Waste Discharge Requirements) and Order No. 2008-0002-EXEC establish the requirement for a Sanitary Sewer Management Plan; and

WHEREAS, the State Water Resources Control Board and the Regional Water Quality Control Board further requires that the Sanitary Sewer Management Plan be approved by the governing agency.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED THAT, the Sanitary Sewer Management Plan for the Freedom County Sanitation District is hereby accepted and approved by this Board.

PASSED AND ADOPTED by the Board of Directors of the Freedom County Sanitation District, State of California, this 15th day of November, 2011, by the following vote:

AYES: DIRECTORS Leopold, Pirie, Coonerty, Caput and Stone

NOES: DIRECTORS None

ABSENT: DIRECTORS None

MARK W. STONE
Chairperson of said Board

ATTEST: TESS FITZGERALD
Clerk of said Board

STATE OF CALIFORNIA)
COUNTY OF SANTA CRUZ) ss
I, SUSAN A. MAURIELLO, County Administrative Officer and ex-officio Clerk of the Board of Supervisors of the County of Santa Cruz, State of California do hereby certify that the foregoing is a true and correct copy of the resolution passed and adopted by and entered in the minutes of the said board. In witness whereof I have hereunto set my hand and affixed the seal of the said Board on 11/17 20 11
SUSAN A. MAURIELLO, County Administrative Officer
By _____ Deputy

Approved as to form:
Office of County Counsel

Distribution: County Counsel
Public Works
free_ssmprw.doc

SSMP Document Version Control

0324

SSMP Copy Number: _____

This Copy Assigned to: _____

SSMP Section	Version Date	Comments
Introduction	June 3, 2009	
1. Goals	June 3, 2009	
2. Organization	June 3, 2009	
3. Legal Authority	June 3, 2009	
4. Operation and Maintenance Program	June 3, 2009	
5. Design and Performance Provisions	June 3, 2009	
6. Overflow Emergency Response Plan	June 3, 2009	
7. Fats, Oils and Grease (FOG) Control Program	June 3, 2009	
8. System Evaluation and Capacity Assurance Plan	June 3, 2009	
9. Monitoring, Measurement, and Program Modifications	June 3, 2009	
10. SSMP Audits	June 3, 2009	
11. Communications Program	June 3, 2009	

For information regarding the current version of this document please contact John Swenson at (831) 477-3907.

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Introduction

This Sewer System Management Plan (SSMP) was prepared to cover the management, operation, and maintenance of the Davenport, Freedom, and Santa Cruz County Sanitation District sanitary sewer systems. The three county sanitation districts are referred to as the Districts.

The Santa Cruz County Sanitation District (SCCSD) owns, operates, and maintains a sanitary sewer system that serves a portion of the unincorporated areas of Santa Cruz County. SCCSD is also the management, operations, and maintenance provider for the sanitary sewer systems that are owned by the Davenport County Sanitation District (DCSD) and the Freedom County Sanitation District (FCSD).

The County of Santa Cruz operates and maintains treatment plants, collection systems and pump stations in County Service Areas that do not discharge into any of the three Districts. This SSMP also covers these systems.

Sanitary Sewer System Description

The DCSD sanitary sewer system facilities include approximately 3 miles of gravity sewers, 1.3 miles of force main, and 3 pump stations. The DCSD does not own nor is it responsible for maintenance or repair of any portion of the sewer service laterals (the portion between the building and the public sewer main).

The FCSD sanitary sewer system facilities include approximately 15.3 miles of gravity sewers, 1.2 miles of force main, and 8 pump stations. The FCSD does not own nor is it responsible for maintenance or repair of any portion of the sewer service laterals.

The SCCSD sanitary sewer system facilities include approximately 188 miles of gravity sewers, 14 miles of force main, and 35 pump stations. The SCCSD does not own nor is it responsible for maintenance or repair of any portion of the sewer service laterals.

The unique features of the Districts' sanitary sewer systems must be taken into account when comparing it to other sanitary sewer systems. The Districts' sanitary sewer systems consist of geographically dispersed service areas with attendant travel time which results in reduced productivity and increased response time to unplanned events. The relatively large number of pump stations and attendant force mains increase staffing and cost. The force mains produce sulfides that cause downstream odor problems and potential corrosion problems necessitating odor and sulfide control systems. An estimated 80% of the gravity sewers are constructed of asbestos cement pipe installed in the 1950 to 1980 timeframe. These sewers are susceptible to structural failure due to internal corrosion and embrittlement. They are susceptible to blockages due to root intrusion at the joints. The majority of the sanitary sewer system facilities are located in close proximity to surface waters, increasing the likelihood that overflows will reach the surface waters.

The County of Santa Cruz maintains and operates six sewer treatment systems in the County Service Areas. This includes unincorporated areas of the County that do not discharge to the Sanitation Districts.

Regulatory Requirements

The State Water Resources Control Board (SWRCB) and the Central Coast Regional Water Quality Control Board (RWQCB) regulate the management, operation, and maintenance of the Districts' sanitary sewer systems. The Statewide General Waste Discharge Requirements for

Sanitary Sewer Systems, SWRCB Order No. 2006-0003-DWQ (GWDR) as amended by SWRCB Order No. 2008-0002-EXEC establishes the requirements:

- Sanitary Sewer Overflows (SSOs) are prohibited,
- All SSOs, irrespective of size, must be reported to the SWRCB electronically using the California Integrated Water Quality System, and
- The Districts must prepare and implement an SSMP.

The schedule for the SSMP is shown on Table I-1.

Table 1-1: SSMP Development and Implementation Schedule

Activity	Deadline
Complete, approve, and certify SSMP	8/1/2009

Future Deadlines

The deadlines included in this SSMP for actions through the first SSMP Update are shown on Table 1-2.

Table 1-2: Future Deadlines

Deadline	Activity	SSMP Section Number
3/31/2010	Annual sewer system performance report to Board of Directors	11.4
8/1/2010	Update District Code for each of the three Districts	3.3
8/1/2010	Prepare Critical Spare Parts inventory	4.9
12/31/2010	Complete sanitary sewer system capacity evaluation	8.3
3/31/2011	Annual sewer system performance report to Board of Directors	11.4
8/1/2011	Complete SSMP Audit	10.3
3/31/2012	Annual sewer system performance report to Board of Directors	11.4

Deadline	Activity	SSMP Section Number
8/1/2012	Complete first round of pump station facility inspections	4.4.2
3/31/2013	Annual sewer system performance report to Board of Directors	11.4
8/1/2013	Complete SSMP Audit	10.3
8/1/2013	Complete SSMP Update	9.6
8/1/2014	Complete development of the force main condition assessment program	4.4.3
12/31/2019	Complete first round of CCTV inspection	4.4.1

Organization of SSMP

The structure of this SSMP follows the section numbering and nomenclature specified in the GWDR. The SSMP includes eleven sections:

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

Definitions, Acronyms, and Abbreviations

Best Environmental Management Practices (BEMP) - Refers to the procedures employed in commercial kitchens to minimize the quantity of grease that is discharged to the sanitary sewer system. Examples include scraping food scraps into the garbage can and dry wiping dishes and utensils prior to washing.

Calendar Year (CY)

California Integrated Water Quality System (CIWQS) - Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system.

Capital Improvement Program (CIP) - Refers to the document that identifies planned capital improvements to the Districts' sanitary sewer systems.

Certification of SSO Reports - The SWRCB requires the Legally Responsible Official to login to CIWQS within a given time period to electronically sign submitted reports thereby stating that to the best of his/her knowledge and belief, the information submitted is true, accurate, and complete.

Closed Circuit Television (CCTV) - Refers to the process and equipment that is used to internally inspect the condition of gravity sewers.

Collection System – See Sanitary Sewer System.

Computerized Maintenance Management System (CMMS) - Refers to software and a database that is used to manage maintenance and condition assessment data including the production of work orders and the recording of work completed.

County - Refers to Santa Cruz County, California.

County Service Areas - Refers to specific areas within the County where the County operates and maintains sanitary sewer system facilities.

Districts - Refers to the Davenport, Freedom, and Santa Cruz County Sanitation Districts.

Davenport County Sanitation District (DCSD)

Environmental County Health - Refers to the Santa Cruz County Environmental Health Department.

Environmental Protection Agency (EPA) - Refers to the United States Environmental Protection Agency.

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

Field Report - Refers to the Sewer Field Crew Report Form.

Fiscal Year (FY)

Food Service Facility (FSF) - Refers to commercial or industrial facilities where food is handled/prepared/served that discharge to the sanitary sewer system.

Force Main - Refers to a pressure sewer used to convey wastewater from a pump station to the point of discharge.

Freedom County Sanitation District (FCSD)

Full-time Equivalent (FTE) - Refers to the equivalent of 2,080 paid labor hours per year by a regular, temporary, or contract employee.

General Waste Discharge Requirements (GWDR) - Refers to the State Water Resources Control Board Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated May 2, 2006, as revised on February 20, 2008.

Global Positioning System (GPS) - Refers to the handheld unit used to determine the longitude and latitude of sanitary sewer overflows for use in meeting the CIWQS online SSO reporting system requirements.

Grease Removal Device (GRD) - Refers to grease traps or grease interceptors that are installed to remove FOG from the wastewater flow at food service facilities.

Hotspot - A gravity sewer identified as requiring frequent preventive maintenance to reduce the likelihood of SSOs.

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

Lateral - See Sewer Service Lateral.

Legally Responsible Official (LRO) - Refers to the individual who has the authority to certify reports and other actions that are submitted through CIWQS, the online SSO reporting system.

Regional Water Quality Control Board (RWQCB) - Refers to the Regional Water Quality Control Board for the Central Coast Region (Region 3).

Manhole (MH) - Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection.

Monitoring, Measurement, and Program Modifications (MMPM)

National Pollution Discharge Elimination System (NPDES)

Not Applicable (NA)

Notification of an SSO - Refers to the time at which SCCSD becomes aware of an SSO event through observation or notification by the public or other source.

Office of Emergency Services (OES) - Refers to the California Governor's Office of Emergency Services.

Operations and Maintenance (O&M)

Overflow Emergency Response Plan (OERP)

Personal Protective Equipment (PPE)

Preventative Maintenance (PM) - Refers to maintenance activities intended to prevent failures of the sanitary sewer system facilities (e.g. cleaning, CCTV, inspection).

Private Lateral Sewage Discharges - Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

Property Damage Overflow - Property damage overflow refers to a sewer overflow or backup that damages private property.

Sanitary Sewer Overflow (SSO) - Any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:

(i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;

(ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and

(iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

Sanitary Sewer System - Refers to the portion of the sanitary sewer facilities that are owned the Districts and operated by SCCSD. Sanitary Sewer System can also refer to the portion of sanitary sewer facilities that are located in the County Service Areas and are maintained by the County of Santa Cruz.

Santa Cruz County Sanitation District (SCCSD)

Sensitive Area - Refers to areas where an SSO could result in a fish kill or pose an imminent or substantial danger to human health (e.g. parks, aquatic habitats, etc.).

Sewer Service Lateral - Refers to the piping that conveys sewage from the building to the Districts' sanitary sewer systems.

Sewer System Management Plan (SSMP)

Standard Operating Procedures (SOP) - Refers to written procedures that pertain to specific activities employed in the operation and maintenance of the sanitary sewer system.

State Water Resources Control Board (SWRCB) - Refers to the California Environmental Protection Agency (EPA) State Water Resources Control Board and staff responsible for protecting the State's water resources.

Surface Waters - See waters of the State.

System Evaluation and Capacity Assurance Plan (SECAP)

Volume Captured – Refers to the amount of spilled sewage that is returned to the sanitary sewer system. When recording the volume that is captured, the volume of water used for flushing and/or cleaning should not be included.

Water Body - A water body is any stream, creek, river, pond, impoundment, lagoon, wetland, or bay.

Waters of the State - Waters of the State (or waters of the United States) means any water, surface or underground, including saline waters, within the boundaries of California. In case of a sewage spill, storm drains are considered to be waters of the State unless the sewage is completely contained and returned to the sanitary sewer system and that portion of the storm drain is cleaned.

Work Order (WO) - Refers to a document (paper or electronic) that is used to assign work and to record the results of the completed work.

References

State Water Resources Control Board Order No. 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, California State Water Resources Control Board, May 2, 2006.

State Water Resources Control Board Monitoring and Reporting Program No. 2006-0003-DWQ (as revised by Order No. WQ 2008-0002-EXEC), California State Water Resources Control Board, February 20, 2008 (www.cwea.org/pdf/2008-0002-EXEC.pdf).

Section 1. Goals

1.1. Introduction

This section of the SSMP formally states the Districts' and County's goals for this SSMP.

1.2. Requirements for Goals Section

The regulatory requirements for the Goals section of the SSMP are:

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

1.3. SSMP Goals

The Districts' and County's goals are:

1. To properly manage, operate, and maintain all parts of the Districts' and County's sanitary sewer systems
2. To provide adequate capacity to convey the peak wastewater flows. Adequate capacity, for the purposes of this SSMP, is defined as the capacity to convey the peak wastewater flows that are associated with the design storm event.
3. To reduce the frequency of SSOs and, wherever possible, to prevent SSOs.
4. To mitigate the impacts that are associated with any SSO that may occur.
5. To meet all applicable regulatory notification and reporting requirements.

Section 2. Organization

2.1. Introduction

This section of the SSMP identifies Districts' and County's staff responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements.

2.2. Requirements for Organization Section

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

The SSMP must identify:

1. The name of the responsible or authorized representative;
2. 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
3. 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)).

2.3. Organization

The organization chart for the management, operation, and maintenance of the Districts' and County's sanitary sewer systems is shown on Figure 2-1. The contact information for key staff is shown in Appendix 2-A.

2.4. Authorized Representative

The Districts' Legally Responsible Official (LRO) in all sanitary sewer system matters is the Sanitation Operations Manager. He/she is authorized to submit verbal, electronic, and written spill reports to the SWRCB, RWQCB, County Environmental Health Services Agency, and Governor's Office of Emergency Services (OES). He/she is authorized to certify electronic spill reports submitted to the SWRCB.

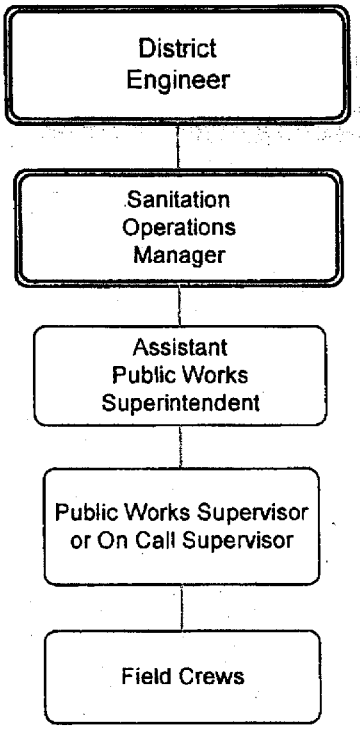
The Assistant Public Works Superintendent is authorized to act in the Sanitation Operations Manager's absence. He/she is authorized to submit verbal, electronic, and written spill reports to the SWRCB, RWQCB, County Environmental Health Services Agency, and OES. He/she is authorized to certify electronic spill reports submitted to the SWRCB.

The Director of Public Works is the Legally Responsible Official (LRO) in all sanitary sewer system matters for the County of Santa Cruz. The Assistant Director of Public Works is authorized to act in the Director's absence.

2.5. Responsibility for SSMP Implementation

The District Engineer/Director of Public Works is responsible for developing, implementing, and maintaining all elements of the Districts' SSMP. He/she has delegated responsibility of sections of the SSMP as shown in Appendix 2-B.

Figure 2-1: Organization Chart*



*District Engineer is also the County's Director of Public Works

2.6. SSO Reporting Chain of Communication

The SSO Reporting Chain of Communication follows the Organization Chart shown in Figure 2-1. The SSO Reporting process and responsibilities are described in detail in Section 6 of the SSMP – Overflow Emergency Response Plan.

Appendix 2-A: Key SCCSD Staff

Name	Job Title	Phone Number
John Presleigh	District Engineer/Director of Public Works	(831) 454-2160
John Swenson	Sanitation Operations Manager	(831) 477-3907
Rachel Lather	Senior Civil Engineer	(831) 454-2160
Gary Dubinsky	Assistant Public Works Superintendent	(831) 477-3907
Ed Luboff	Public Works Supervisor	(831) 477-3907
Amy Gross	Environmental Programs Coordinator	(831) 477-3907

Appendix 2-B: SSMP Responsibilities

Name	Job Title	SSMP Implementation and Maintenance Responsibility
John Presleigh	District Engineer/Director of Public Works	Overall SSMP Development and Implementation
John Swenson	Sanitation Operations Manager	1. Goals
John Swenson	Sanitation Operations Manager	2. Organization
John Swenson	Sanitation Operations Manager	3. Legal Authority
John Swenson	Sanitation Operations Manager	4. Operation and Maintenance Program
Rachel Lather	Senior Civil Engineer	5. Design and Performance Provisions
John Swenson	Sanitation Operations Manager	6. Overflow Emergency Response Plan
Amy Gross	Environmental Programs Coordinator	7. Fats, Oils and Grease (FOG) Control Program
Rachel Lather	Senior Civil Engineer	8. System Evaluation and Capacity Assurance Plan
John Swenson	Sanitation Operations Manager	9. Monitoring, Measurement, and Program Modifications
Rachel Lather	Senior Civil Engineer	10. SSMP Audits
Rachel Lather	Senior Civil Engineer	11. Communications Program
Note: All personnel are employees of SCCSD and/or the County of Santa Cruz		

Section 3. Legal Authority

3.1. Introduction

This section of the SSMP presents the Districts' and the County's legal authority to comply with the SSMP requirements.

3.2. Requirements for Legal Authority Section

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

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

(a) Prevent illicit discharges into its sanitary sewer 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 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.

The summarized requirements for the FOG Control Program element of the SSMP are:

(f) Authority to inspect grease producing dischargers; and

(g) Authority to enforce sewer-related ordinances.

3.3. Agencies Legal Authority

The Legal Authorities for each Agency are presented as follows:

- DCSD Legal Authority (Appendix 3-A)
- FCSD Legal Authority (Appendix 3-B)
- SCCSD Legal Authority (Appendix 3-C)
- County of Santa Cruz Legal Authority (Appendix 3-D)

3.4. Satellite Agencies

Neither the Districts nor the County have any satellite sewer systems that discharge to their sanitary sewer systems.

Appendix 3-A: DCSD Legal Authority

The ***Davenport County Sanitation District Code*** describes DCSD's current legal authorities. The legal authorities provided in the District Code that address the specific requirements for this SSMP are summarized in Table 3-A-1.

Table 3-A-1: Summary of DSCD's Legal Authority and Requirements

Requirement	District Code Reference	Meets Requirements?
General		
Prevent illicit discharges into the sanitary sewer system	4.04.370 4.04.410	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	4.04.410	Yes
Require that sewers and connections be properly designed and constructed	4.04.190	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	4.04.200	Yes
Laterals		
Clearly define District responsibility	4.04.220	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the County	NA	NA
Control infiltration and inflow (I/I) from private service laterals	4.04.447	Yes
FOG Source Control		
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BEMP requirements, record keeping and reporting requirements	4.04.470 A, C	Yes

Requirement	District Code Reference	Meets Requirements?
Authority to inspect grease producing facilities	4.04.520	Yes
Enforcement		
Enforce any violation of its sewer ordinances	4.04.440 4.04.530	Yes

Appendix 3-B: FCSD Legal Authority

The ***Freedom County Sanitation District Code*** describes FCSD's current legal authorities. The legal authorities provided in the District Code that address the specific requirements for this SSMP are summarized in Table 3-B-1.

Table 3-B-1: Summary of FCSD's Legal Authority and Requirements

Requirement	District Code Reference	Meets Requirements?
General		
Prevent illicit discharges into the sanitary sewer system	3.04.380 3.04.430	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	3.04.430 B	Yes
Require that sewers and connections be properly designed and constructed	3.04.280	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	3.04.280	Yes
Laterals		
Clearly define District responsibility	3.04.220	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the County	NA	NA
Control infiltration and inflow (I/I) from private service laterals	3.04.547	Yes
FOG Source Control		
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BEMP requirements, record keeping and reporting requirements	3.04.490 A	Yes

Requirement	District Code Reference	Meets Requirements?
Authority to inspect grease producing facilities	3.04.540	Yes
Enforcement		
Enforce any violation of its sewer ordinances	3.04.450 Article X	Yes

Appendix 3-C: SCCSD Legal Authority

The ***Santa Cruz County Sanitation District Code*** describes the SCCSD's current legal authorities. The legal authorities provided in the District Code that address the specific requirements for this SSMP are summarized in Table 3-C-1.

Table 3-C-1: Summary of SCCSD's Legal Authority and Requirements

Requirement	District Code Reference	Meets Requirements?
General		
Prevent illicit discharges into the sanitary sewer system	7.04.310	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	7.04.310	Yes
Require that sewers and connections be properly designed and constructed	7.04.140	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	7.04.140	Yes
Laterals		
Clearly define District responsibility	7.04.070	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the County	NA	NA
Control infiltration and inflow (I/I) from private service laterals	7.04.375A.1	Yes
FOG Source Control		
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BEMP requirements, record keeping and reporting requirements	7.04.340	Yes

Requirement	District Code Reference	Meets Requirements?
Authority to inspect grease producing facilities	7.04.340	Yes
Enforcement		
Enforce any violation of its sewer ordinances	1.12.010 7.04.545	Yes

Appendix 3-D: County of Santa Cruz Legal Authority

The ***County of Santa Cruz Code*** describes the County's current legal authorities. The legal authorities provided in the County Code that address the specific requirements for this SSMP are summarized in Table 3-D-1.

Table 3-D-2: Summary of the County of Santa Cruz Legal Authority and Requirements

Requirement	County of Santa Cruz Code Reference	Meets Requirements?
General		
Prevent illicit discharges into the sanitary sewer system	7.39.020 Ordinances Adopted by Reference. SCCSD	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	7.39.020 Ordinances Adopted by Reference.	Yes
Require that sewers and connections be properly designed and constructed	7.39.020 Ordinances Adopted by Reference.	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	7.39.020 Ordinances Adopted by Reference.	Yes
Laterals		

Requirement	County of Santa Cruz Code Reference	Meets Requirements?
Clearly define District responsibility	7.39.020 Ordinances Adopted by Reference.	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the County	NA	NA
Control infiltration and inflow (I/I) from private service laterals	7.39.020 Ordinances Adopted by Reference.	Yes
FOG Source Control		
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BEMP requirements, record keeping and reporting requirements	7.39.020 Ordinances Adopted by Reference.	Yes
Authority to inspect grease producing facilities	7.39.020 Ordinances Adopted by Reference.	Yes
Enforcement		

Requirement	County of Santa Cruz Code Reference	Meets Requirements?
Enforce any violation of its sewer ordinances	7.39.020 Ordinances Adopted by Reference.	Yes

Section 4. Operations and Maintenance Program

4.1. Introduction

This section of the SSMP provided an overview of the Districts' and County's operations and maintenance program.

4.2. Requirements for Operations & Maintenance Section

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- 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.

4.3. Collection System Maps

The Districts maintain collection system maps using GIS. Staff completed the maps for each of the District's boundaries in 2009.

The maps include all gravity line segments and manholes, pumping facilities, pressure pipes and valves. The field crews use hard copy maps that are produced from GIS. The hard copy maps are updated on an as-needed basis. Corrections that are identified by the field crews are forwarded to Public Works Sanitation Engineering for action. High priority corrections will be completed as soon as possible. High priority corrections refer to mapping information that

could cause the field crews to act in a manner that could cause an SSO. Low priority corrections will be completed once a year.

4.4. Operation and Maintenance Program

The elements of the Districts' and County's sewer system O&M program include:

- Proactive, preventive, and corrective maintenance of gravity sewers;
- Ongoing CCTV inspection program to determine the condition of the gravity sewers;
- Rehabilitation and replacement of collection system facilities that are in poor condition; and
- Periodic inspection and preventive maintenance for pump station and force main facilities.

The details of the O&M program follow.

4.4.1. Gravity Sewers

The Districts and the County proactively clean all gravity sewers that are 12 inches in diameter and smaller every three years and it preventively cleans sewers with a history of problems every 1, 3, 6, or 12 months. SCCSD will visually inspect the condition of its larger sewers (larger than 12 inches) every three years and provide cleaning if needed. Two sewer-cleaning crews are assigned to these activities. SCCSD's standard operating procedure for sewer cleaning is included as Appendix 4-A. These procedures are identical for all three Districts and the County of Santa Cruz.

Gravity sewer cleaning is scheduled using work orders generated by SCCSD's computer-based maintenance management system (CMMS). Completed work is documented in the CMMS. The completed work orders include field crew observations on the nature and quantity of materials removed from the gravity sewers during cleaning. This information, along with field crew recommendations, is used to establish the cleaning method and frequency. The process flow chart for establishing gravity sewer cleaning frequency is shown on Figure 4-1.

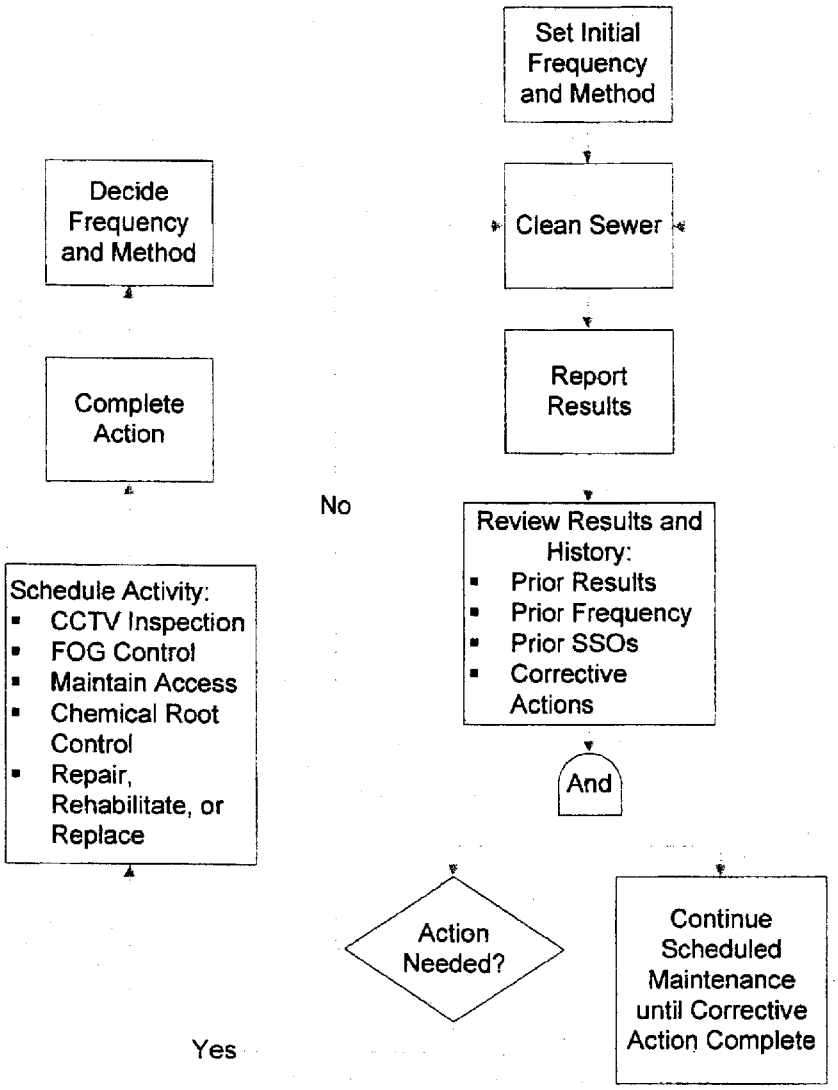
The Districts have a continuing contract for chemical root control throughout their systems on an as-needed basis. The City of Santa Cruz Regional Treatment Plan Facility must approve chemicals used by the root control contractor.

The Districts and County use CCTV to determine the condition of the gravity sewers and to determine the primary cause of blockages and SSOs. SCCSD intends to complete the first round of inspection using CCTV by December 31, 2019 and it intends to continue inspecting the gravity sewers thereafter on a ten-year cycle. One CCTV inspection crew is assigned to this activity. The inspection data is reviewed by the Public Works Supervisor to determine whether repair or rehabilitation/replacement is warranted.

The Districts and the County complete repairs in priority order.

Staff maintains a list of known structural problems for use in prioritizing repair activities and for use in providing input to Public Works Sanitation Engineering on the Capital Improvement Program.

Figure 4-1: Gravity Sewer Cleaning Frequency Process Flow Chart



4.4.2. Pump Stations

The Districts' and County's Pump Station O&M Program consists of monitoring, operational inspections, preventive maintenance, and corrective maintenance activities.

Staff monitors pump station operation using SCADA. Pump stations are visually inspected every week. Facility or equipment problems observed during the operational inspections are repaired at that time or noted in logs maintained at the pump stations and on work orders for follow-up action.

Emergency generators are exercised monthly.

The Districts and the County will formally inspect the condition of the large pump stations every two years and the remaining pump stations every three years. This inspection will be used to identify major maintenance and rehabilitation needs. The facility inspection will be completed by a team that includes collection system field staff and other SCCSD employees as appropriate to the size and complexity of the facility. The facility inspections will be documented using the checklist included in Appendix 4-B. Information from the checklist will be used to identify repairs, major maintenance, and capital improvement needs. SCCSD staff will complete repairs and major maintenance. Specialty repairs, maintenance, or rehabilitation/replacement will be completed by contract. Identified capital improvement needs will be included in the Capital Improvement Program.

The first biannual Pump Station facility inspections will be complete by August 1, 2012.

4.4.3. *Force Mains*

The Districts' and County's force main O&M program consists of periodic inspections, preventive maintenance, and corrective maintenance activities.

The Districts and County are members of Underground Service Alert and marks the location of the force mains to prevent damage by others during underground construction.

The force main right-of-ways are inspected quarterly to identify leakage and potential incursions associated with any nearby construction. Air relief valves are inspected and maintained annually. Force mains are cleaned when conditions warrant.

SCCSD is developing a program to assess the condition of the force mains. It intends to have this program in place by August 1, 2014.

4.4.4. *Non-Routine Maintenance*

Non-routine maintenance activities include investigation and response to any complaints regarding a manhole overflow, missing or shifted manhole covers, manhole covers that are excessively noisy, residential plumbing troubles, pump station malfunction, unexpected sewer odor, etc. Sewer complaints are investigated and appropriate actions are taken to resolve the source of the problem.

4.4.4.5 *Treatment Plants*

The County's O&M Program consists of daily monitoring, operational inspections, preventive maintenance, and corrective maintenance activities. The Districts do not own or maintain treatment plants.

Treatment plants are visually inspected every day. Facility or equipment problems observed are repaired at that time or noted in logs maintained at the plants for follow-up action. Samples are taken daily to ensure that the plants are operating in compliance with State regulations.

4.5. Rehabilitation and Replacement Plan

The Districts' and County's Rehabilitation and Replacement Programs (Programs) are driven by the condition of the sewer system assets. The condition of the gravity sewers is established using closed circuit television (CCTV) inspection. The condition of the pump stations is established during annual facility inspections.

SCCSD has an ongoing CCTV inspection program and has completed the inspection of 75 miles to date. SCCSD plans on completing the inspection of the entire gravity sewer system by December 31, 2019. The CCTV inspections will be based on the Pipeline Assessment and Certification Program (PACP) standards: structural and maintenance defects will be logged according to location and they will be assigned a severity grade of 1 to 5 (1 indicates a minor defect and 5 indicates defects where failure is imminent). SCCSD will base its future CCTV inspection frequency based on the structural conditions identified during the first round. The condition-based inspection frequencies are shown in Table 4-1.

Table 4-1: Condition-Based CCTV Inspection Frequencies

Maximum PACP Structural Severity Index/Line Segment	CCTV Re-Inspection Frequency
1 or no defects logged	20 years
2	15 years
3	10 years
4	5 years
5	2 years

As stated earlier, pump station condition will be evaluated during periodic facility inspections.

Force main condition will be based on the future force main condition assessment program.

Public Works Sanitation Engineering is responsible for compiling condition and maintenance information for use in preparing and updating the Districts' Five Year Capital Improvement Program (CIP). Identified projects will be placed in priority order and the highest priority projects will be selected for inclusion in the CIP.

The funds that support the CIP come from the Districts' Sewer Funds. The Sewer Funds are enterprise funds that include revenues from sewer service charges, connection fees, and interest. The fees that provide the revenues are periodically reviewed and set based on identified capital improvement needs.

The sewer system projects that are included in the Five Year Capital Improvement Program are shown in Appendix 4-C.

4.6. Training Program

SCCSD uses a combination of in-house classes, on-the-job training, conferences, seminars, and other training opportunities to train its sanitary sewer system staff. County of Santa Cruz Staff whom maintain the treatment plants are also trained on spill response.

Equipment and operations training is initially provided by the vendor or manufacturer of the equipment. Ongoing technical training is provided through on-the-job training and rotation among the different maintenance crews and equipment. SCCSD also relies on regional and statewide training available through seminars and conferences. The training resources are shown in Table 4-2.

Table 4-2: Training Resources (Conferences, Seminars, and Materials)

Sponsor	Event	Timeframe	Reference
Bay Area Clean Water Agencies	Collection System Committee	Monthly	http://www.bacwa.org
California Water Environment Association	State Conference	April	www.cwea.org
	Northern Regional Training Conference	September	
	Monterey Bay Section	Semi-Annually	
	San Francisco Bay and Santa Clara Valley Section Collection System Committees	Quarterly	
California State University, Sacramento	Videos, manuals, home study courses		www.owp.csus.edu

4.7. Contractors Working on Districts' and County Projects

Districts' and County contract language requires contractors working in the sanitary sewer system to provide training for their employees regarding the potential of their work to cause SSOs.

SCCSD's construction specifications require that all contractors and subcontractors be experienced with sanitary sewer work and that they fully comply with all laws, regulations, and standards governing sewer work, sanitation, and public health.

4.8. Major Production Equipment

The list of the major production equipment that SCCSD uses in the operation and maintenance of the Districts' and County sewer systems is included in Appendix 4-D.

4.9. Critical Spare Parts

SCCSD will prepare an inventory of its critical spare parts. The inventory form is included in Appendix 4-E.

Appendix 4-A: Standard Operating Procedure for Sewer Cleaning

Purpose

The purpose of this Standard Operating Procedure is to ensure that sewer cleaning is performed in a manner that will produce a high quality result. Quality is important because it ensures that the sanitary sewers will not experience problems prior to their next scheduled cleaning.

Goal

The goal of cleaning a gravity sewer is to restore the flow area to 95% of the original flow area of the pipe.

Required Equipment and Tools

1. Personal protective equipment (hardhat, steel toe boots, gloves, eye protection, face protection, hearing protection)
2. Calibrated gas detector
3. Proper safety cones, barricades, flagging, signs or other traffic control devices
4. Confined space equipment (tripod, harness, and ventilation blower)
5. Sanitary sewer system map book
6. Combo sewer cleaner
7. Stone Age Tools Warthog or Enz Bulldog sewer cleaning nozzle
8. Six-wire skid ("proofer") in sizes that will be encountered during the day
9. Root saw
10. Debris traps in the sizes that will be encountered during the day
11. Manhole hook or pick-axe
12. Measuring wheel
13. Disinfectant

Required Forms

1. Cleaning Work Order
2. Pre-Trip Inspection Form
3. Injury/Damage Report Form

Procedures for Sewer Cleaning Crew

Prior to Leaving the Yard

1. Plan the work so that it starts in the upstream portion of the area and moves downstream.
2. Wherever possible, plan to clean sewers from the downstream manhole.
3. Inspect the sewer cleaning nozzles for wear. Replace nozzles that are excessively worn.
4. If this is the first day that this cleaning unit is being used this week, inspect the first 200 feet of hose and couplings for damage or wear.

At the Jobsite

1. Wear proper personnel protective equipment (PPE).
2. Fill the water tank at or near the first jobsite.
3. Determine and confirm location of upstream and downstream manholes (use street addresses, if possible).
4. Look for any overhead utilities that may come into contact with the vacuum boom during the cleaning operation.
5. Set up proper traffic control by placing traffic signs, flags, cones, and other traffic control devices.
6. Move the cleaning unit into the traffic control so that the hose reel is positioned over the manhole.
7. Open the manhole and use the gas detector to determine if it is safe to proceed with the cleaning operation.

Cleaning Operation

1. Insert the debris trap.
2. Start the auxiliary engine.
3. Lower the hose, with a guide or roller to protect the hose, into the manhole and direct it into the sewer to be cleaned.
4. Start the high-pressure pump and set the engine speed to provide adequate pressure for the sewer cleaning operation.
5. Open the water valve and allow the hose to proceed up the sewer. The hose speed should not exceed 2-3 feet per second.
6. Allow the hose to proceed 25% of the length of the sewer and pull the hose back.
7. Observe the nature and the quantity of debris pulled back to the manhole.
8. If there is little or no debris, allow the hose to proceed to the upstream manhole.

9. If there is moderate to heavy debris, clean the remaining portion of the sewer in steps not to exceed 25% of the length of the sewer.
10. Open the upstream manhole and verify that the nozzle is at or past the manhole.
11. The sewer has been adequately cleaned when:
    - Successive passes with a cleaning nozzle do not produce any additional debris, and
    - The sewer is able to pass a full size, six-wire skid ("proofer") for its entire length.
12. Determine the nature and quantity of the debris removed during the cleaning operation. Use the codes in Table 4-A-1 to report the nature and quantity of debris. Figure 4-A-1 is an excerpt from the CWEA "Best Practices Cleaning Results" publication and sets guidelines for coding debris found during fieldwork.

Table 4-A-1: Criterion for Coding Debris Found During Cleaning

Type of Debris	Clear (no debris)	Light	Moderate	Heavy
Sand, grit, rock	CLR	DL	DM	DH
Grease	CLR	GL	GM	GH
Roots	CLR	RL	RM	RH
Other (specify)	CLR	OL	OM	OH

13. Remove the debris from the manhole using the vacuum unit.
14. Rewind the hose on the reel.
15. Remove the debris trap.
16. Clean the mating surface and close the manhole. Ensure that the manhole is properly seated.
17. Enter the results on the Work Order.
18. Move the cleaning unit, break down and stow the traffic controls.
19. Proceed to the next cleaning jobsite.

At the End of the Day

1. Inspect the equipment and tools for problems.
2. Report any problems with equipment, tools, or sewers that were cleaned during the day to the Public Works Supervisor.
3. Turn in all completed Cleaning Work Orders to the Public Works Supervisor at end of shift.

Figure 4-A-1: Excerpt from CWEA publication, "Best Practices Cleaning Results"

Standard Measures of Observed Results

Next to cleaning the sewer line, effective observation of results is the most important work product of the crew. This information is the basis for defining future maintenance activities. Consistency is important. The standards for "results" for six- and eight-inch diameter sewers are:

	Clear	Moderate	Heavy
Grit	No observable grit	Less than 5 gallons 15-20 minutes to clean 1-2 passes required Requires cleaning twice or less per year Only fine grit	More than 5 gallons More than 30 minutes to clean More than 4 passes required Requires cleaning four times per year
Grease	No observable grease	Small chunks/no "logs" 15-20 minutes to clean 1-2 passes required Requires cleaning twice or less per year	Big chunks/"logs" Operator concern for downstream plugging More than 30 minutes to clean More than 4 passes required
Liquefied grease		Vacuuming not required	Vacuuming not required
Roots	No observable roots	Thin/stringy roots present No large "clumps" 15-20 minutes to clean 1-2 passes required	Thick roots present Large "clumps" More than 30 minutes to clean More than 4 passes required
Other condition observations: - Pipe material fragments - Soil/dirt - Rock (pipe bedding) - Lost nozzle			

Appendix 4-B: Pump Station Inspection Checklist

Inspection Information

Inspection date	
Inspection participants	
Facility name	
Facility address	
Comments	

Summary of Recommended Actions (in Priority Order)

Recommended Action(s)	Priority

Background Information (Prior 12 Months)

SSOs	
Equipment failures	
Alarm history (attach copy)	
Major maintenance activities completed (attach list if applicable)	
Pending work orders (attach copies)	
Operating problems (attach copy of operating log)	
Comments	

Security Features

Fence and gate	
External lighting	
Visibility from street	
Doors and locks	
Intrusion alarm(s)	
Signs with emergency contact information	
Other security features	
Comments	

Safety Features and Equipment	
Signage (confined space, automatic equipment, hearing protection, etc.)	
Fall protection	
Emergency communication	
Equipment hand guards	
Hand rails and kickboards	
Platforms and grating	
Tag out and lock out equipment	
Hearing protection	
Eye wash	
Chemical storage	
Comments	

External Appearance	
Fence	
Landscaping	
Building	
Control panels	
Other external features	
Comments	

Building/Structure

Pump station building	
Control room	
Dry well	
Wet well	
Other structures	
Comments	

Instrumentation and Controls (I&C)
Including Supervisory Control and Data Acquisition (SCADA) Facilities

Control panel	
Run time meters	
Flow meter	
Wet well level	
Alarms	
SCADA	
Other I&C	
Comments	

Electrical and Switch Gear	
Power drop	
Transformers	
Transfer switches	
Emergency generator and generator connection	
Starters	
Variable frequency drives	
Electrical cabinets	
Conduit and wireways	
Other electrical	
Comments	

Motors	
Lubrication	
Insulation	
Operating current	
Vibration and alignment	
Comments	

Pumps

Lubrication	
Vibration and alignment	
Seals	
Indicated flow and discharge pressure	
Shutoff head	
Corrosion and leakage evidence	
Drive shaft	
Casing wear (thickness)	
Other	
Comments	

Valves and Piping

Valve operation	
Valve condition	
Pipe condition	
Pipe support	
Other	
Comments	

Other

Lighting	
Ventilation	
Support systems (air, water, etc)	
Signage	
Employee facilities	
Sump pump	
Overhead crane/lift points	
Portable pump connections	
Portable pumps	
Comments	

Aerial Photo of Pump Station Site (from Google Maps)

Photos of Major Equipment/Condition Issues

Appendix 4-C: Condition-Based Capital Improvement Program

Project Number	Project Title	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13

Appendix 4-D: Major Production Equipment

Number	Major Equipment Type	Year Purchased
2	Combination Sewer Cleaning Units	2003, 2005
2	CCTV Inspection Unit	2006, 2010

Appendix 4-E: Critical Spare Parts Inventory

Inventory/Condition Checked by: SCCSD Staff **Inventory Date: June 2011**

Description/Associated Equipment	Number in Stock	Location
Portable generators ranging from 1-400 kilowatts. Used to supply power to small stations and package plants in the event of a power failure.	10	Lode St.
Portable trash pumps ranging from 2" to 6" Hose 2"-4"	8	Lode St.
Television Inspection Van	2	Lode St.
John Deere back hoe	1	Lode St.
Dump Truck	1	Lode St.
Crane Truck	1	
Flush and Vacuum trucks (2 Combo)	5	Lode St.
Air Compressor 185 Sullair	1	Lode St.
Hymax Clamps for pipe repair, replacement pipe (4"-6") 36" replacement pipe.		Lode St.
Station replacement pumps- (18)Flygt 2.3HP-20HP,(1)Little Giant .5HP,(1)Myers 5HP, (1)Cornell 25HP, (1)Gorman-Rupp 6.2HP, (4)Barnes .5 Sump Pump-3HP,(3)BJM 2HP, (1)AC 40HP, (1)Berkeley .5 sump pump	31	Pump Stations
Confined Space entry equipment Night lighting		Lode St.
Spill response van equipped with plugs, berms, spill mats and an air compressor.	1	Lodes St.

Section 5. Design and Performance Provisions

5.1. Introduction

This Section identifies the Districts' and the County's design, construction, and acceptance standards for new and rehabilitated sanitary sewer system facilities.

5.2. Requirements for Design and Construction Standards Section

The summarized requirements for the Design and Construction Standards element of the SSMP are:

- The Agency must have design and construction standards and specifications for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems.
- The Agency must also have procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances; and for rehabilitation and repair projects.

5.3. Design Criteria

Sanitary Sewer System Design Criteria are specified in the ***Santa Cruz County Design Criteria***, June 2006.

Section 6. Overflow Emergency Response Plan

6.1. Introduction

The purpose of the Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for Districts' and County of Santa Cruz Staff to follow in responding to, cleaning up, and reporting SSOs that may occur within the three Districts' service areas.

6.2. Requirements for OERP Section

The summarized requirements for the OERP element of the SSMP are:

The collection system agency 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:

(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.

6.3. Goals

The Districts' and County's goals with respect to responding to SSOs are:

- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;

- Mitigate the impact of the SSO; and
- Meet the regulatory reporting requirements.

6.4. SSO Detection

The processes that are employed to notify SCCSD of the occurrence of an SSO include observation by the public, receipt of an alarm, or observation by SCCSD or County of Santa Cruz staff during the normal course of their work.

6.4.1. Public Observation

Public observation is the most common way that SCCSD is notified of blockages and spills. Contact information for reporting sewer spills and backups is in the phone book and on SCCSD's website: http://www.dpw.co.santa-cruz.ca.us/sanitation.htm. SCCSD's telephone number for reporting sewer problems is (831) 477-3907.

6.4.1.1. Normal Work Hours

SCCSD's regular working hours are Monday through Thursday from 7:00 a.m. to 4:30 p.m. and Friday from 7:00 a.m. to 3:30 p.m., except holidays. When a report of a sewer spill or backup is made during normal work hours, SCCSD's dispatcher receives the call, takes the information from the caller, and communicates it to a field crew.

6.4.1.2. After Hours

Service calls are received by SCCSD's Dispatcher who takes the information from the caller, and communicates it to SCCSD's On Call Personnel.

6.4.2. Districts' and County Staff Observation

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

6.4.3. Alarms

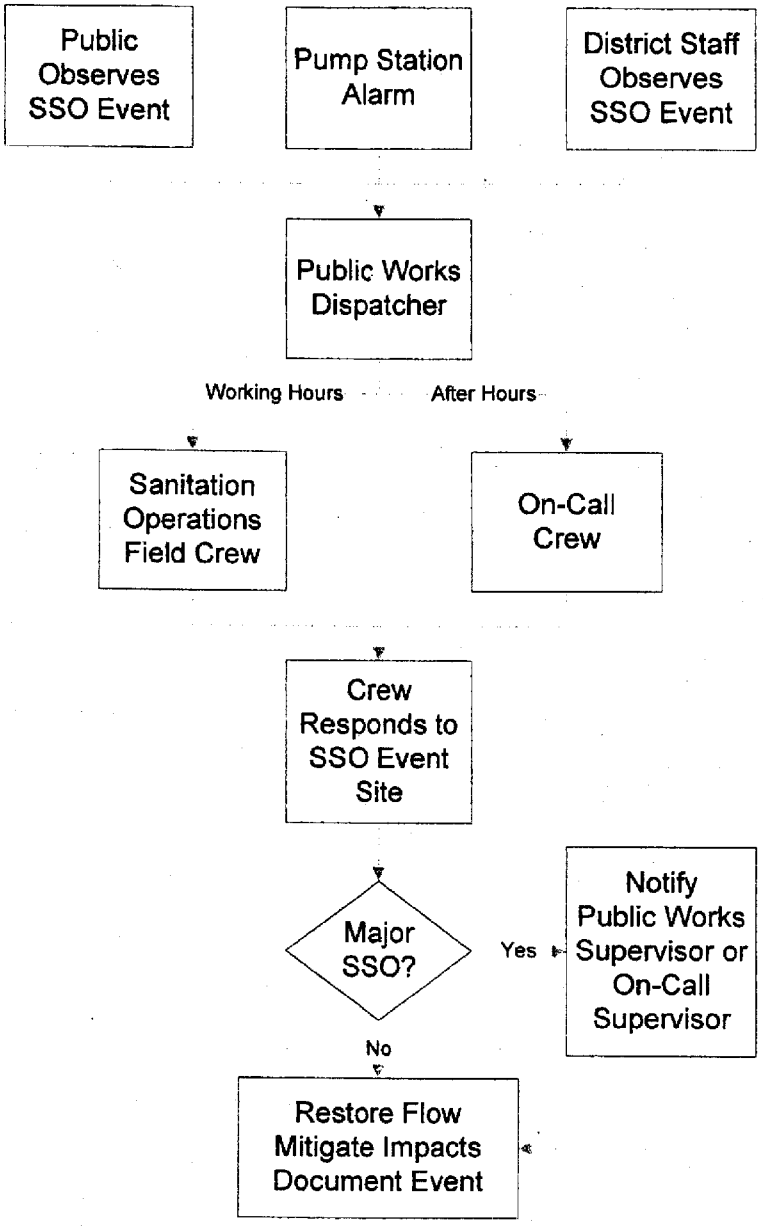
Pump station alarms are monitored by SCCSD's Dispatcher using SCADA. Alarm information is communicated to field crews (working hours) or On Call Personnel (after hours) for response.

Treatment plant alarms are monitored by SCCSD's Dispatcher. Alarm information is communicated to field crews (working hours) or On Call Personnel (after hours) for response.

6.5. SSO Response Procedures

Sewer service calls are considered high priority events that demand a prompt response. The notification and response procedure flow chart is shown in Figure 6-1.

Figure 6-1: Notification and Response Procedure Flow Chart



6.5.1. First Responder Priorities

The first responder's priorities are:

- To follow safe work practices.
- To respond promptly with the appropriate equipment.
- To contain the spill wherever feasible.
- To restore the flow as soon as practicable.
- To minimize public access to and/or contact with the spilled sewage.
- To promptly notify the Public Works Supervisor (working hours) or the On Call Supervisor (after hours) in event of major SSO.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).

6.5.2. Safety

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work.

There may be times when SCCSD personnel responding to a sewer system event are not familiar with potential safety hazards peculiar to sewer work. In such cases it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before starting the job.

6.5.3. Initial Response

The first responder must respond to the reporting party/problem site and visually check for potential sewer stoppages or overflows.

The first responder should:

- Note arrival time at site using Sewer Field Crew Report form. A sample report is included as Appendix 6-A.
- Verify the existence of a sewer system spill or backup.
- Identify and assess the affected area and extent of spill.
- Contact caller if time permits.
- Notify the Public Works Supervisor (working hours) or the On Call Supervisor (after hours).
    - o If the spill appears to be large, flowing to a storm drain, in a sensitive area, or there is doubt regarding the extent, impact, or how to proceed.
    - o If additional help is needed.
- If the spill is large or in a sensitive area, document conditions upon arrival with photographs. Decide whether to proceed with clearing the blockage to restore the flow or to initiate containment measures. The guidance for this decision is:
    - o Small spills – proceed with clearing the blockage.

- Moderate or large spill where containment is anticipated to be simple – proceed with the containment measures.
- Moderate or large spills where containment is anticipated to be difficult – proceed with clearing the blockage; however, after 15 minutes without clearing the blockage, call for additional assistance and implement containment measures.

6.5.4. *Restore Flow*

Using the appropriate cleaning equipment set up downstream of the blockage and hydro clean upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not recur downstream.

If the blockage cannot be cleared within a reasonable time (15 minutes), or the sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, and equipment suppliers.

6.5.5. *Initiate Spill Containment Measures*

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 air plugs, sandbags, and/or plastic mats to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Pump around the blockage/pipe failure/pump station.

6.6. *Water Quality Sampling and Testing*

Water quality sampling and testing is required whenever 1,000 gallons or more of spilled sewage enters a water body to determine the extent and impact of the SSO. The water quality sampling procedures are:

- The first responder should collect the samples or notify the Environmental Compliance Officer during regular working hours or the On-call Operator after hours to collect samples. Samples should be collected as soon as possible after the discovery of the SSO event.
- The water quality samples should be collected from upstream of the spill, from the spill area, and downstream of the spill in flowing water (e.g. creeks). The water quality samples should be collected near the point of entry of the spilled sewage and every 100 feet along the shore for stationary water bodies.
- The Santa Cruz County Environmental Health Department will analyze the results to determine the nature and impact of the discharge. Additional samples will be taken to determine when posting of warning signs can be discontinued. The basic analyses should include total coliform, fecal coliform.

6.7. Recovery and Clean-Up

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 clean-up procedures follow.

6.7.1. Estimate the Volume of Spilled Sewage

Use the methods outlined in Appendix 6-F 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.

6.7.2. Recovery of Spilled Sewage

Vacuum up and/or pump the spilled sewage and discharge it back into the sanitary sewer system.

6.7.3. Clean-up

Clean-up 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. Where clean-up is beyond the capabilities of SCCSD staff, a clean-up contractor will be used.

6.7.3.1. Private Property

Districts' and County Staff will follow the protocol outlined in Appendix 6-C. The incident will be documented using the Private Property SSO Incident Form included as Appendix 6-D.

6.7.3.2. Hard Surface Areas

Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms.

Wash down the affected area with clean water until the water runs clear. Take reasonable steps to contain and vacuum up the wastewater.

Allow area to dry. Repeat the process if additional cleaning is required.

6.7.3.3. Landscaped and Unimproved Natural Vegetation

Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms.

Wash down the affected area with clean water until the water runs clear. The flushing volume should be approximately three times the estimated volume of the spill.

Either contain or vacuum up the wash water so that none is released.

Allow the area to dry. Repeat the process if additional cleaning is required.

6.7.3.4. Natural Waterways

The California Department of Fish and Game should be notified in the event an SSO impacts any riparian habitat. Fish and Game will provide the professional guidance needed to effectively clean-up spills that occur in these sensitive environments.

Clean-up should proceed quickly in order to minimize negative impact. Any water that is used in the clean up should be de-chlorinated prior to use.

6.7.3.5. Wet Weather Modifications

Omit flushing and sampling during heavy storm events with heavy runoff where flushing is not required and sampling would not provide meaningful results.

6.8. Public Notification

Post signs and place barricades to keep vehicles and pedestrians away from contact with spilled sewage. Do not remove the signs until directed by the Sanitation Operations Manager. A sample warning sign is included as Appendix 6-H.

Creeks, streams and beaches that have been contaminated as a result of an SSO 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.

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

Major spills may warrant broader public notice. The District Engineer will authorize contact with local media when significant areas may have been contaminated by sewage.

6.9. Failure Analysis Investigation

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

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

- Reviewing and completing the Sewer Field Crew Report form,
- Reviewing past maintenance records,
- Reviewing available photographs,
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs, and
- Interviewing staff that responded to the spill.

The product of the failure analysis investigation should be the determination of the root cause and the identification of corrective actions. The Collection System Failure Analysis Form (Appendix 6-E) should be used to document the investigation.

6.10. SSO Categories

The California State Water Resources Control Board (SWRCB) has established guidelines for classifying and reporting SSOs. Reporting and documentation requirements vary based on the type of SSO.

There are three categories of SSOs as defined by the SWRCB[1]:

- Category 1 - All discharges of sewage resulting from a failure in the Districts' sanitary sewer systems that:
  - A. Equal or exceed 1,000 gallons, or
  - B. Result in a discharge to a drainage channel and/or surface water; or
  - C. Discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.
- Category 2 - All other discharges of sewage resulting from a failure in the Districts' sanitary sewer system.
- Private Lateral Sewage Discharges - Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

6.11. SSO Documentation and Reporting

All SSOs should be thoroughly investigated and documented for use in managing the sewer system and meeting established notification and reporting requirements. The procedures for investigating and documenting SSOs are:

6.11.1. Internal SSO Reporting Procedures

6.11.1.1. Category II SSOs

The field crew will fill out the Sewer Field Crew Report form and turn it in to the Public Works Supervisor. The Public Works Supervisor or On Call Supervisor will forward the report to the Assistance Public Works Superintendent.

6.11.1.2. Category I SSOs

The field crew will immediately notify the Public Works Supervisor (working hours) or the On Call Supervisor (after hours). The Public Works Supervisor or On Call Supervisor will notify the Assistant Public Works Superintendent or the Sanitation Operations Manager.

The Public Works Supervisor (working hours) or the On Call Supervisor (after hours) will meet with field crew(s) at the site of the SSO event to assess the situation and to document the conditions with photos.

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[1] *State Water Resources Control Board Monitoring and Reporting Program No. 2006-0003-DWQ (as revised by Order No. WQ 2008-0002.EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*, California State Water Resources Control Board, February 20.

The field crew will fill out the Sewer Field Crew Report form and turn it in to the Public Works Supervisor or On Call Supervisor. The Public Works Supervisor or On Call Supervisor will forward the report to the Assistant Public Works Superintendent.

In the event of a very large overflow or an overflow in a sensitive area, the Sanitation Operations Manager will notify the District Engineer. The District Engineer may notify the County Administrative Officer.

6.11.2. External SSO Reporting Procedures[2]

The California Integrated Water Quality System (CIWQS) electronic reporting system should be used for reporting SSO information to the SWRCB whenever possible. A flow chart and checklist are included as Figure 6-2 showing the external reporting response requirements based on the type of SSO.

6.11.2.1. Category 1 SSOs that reach Waters of the State

If a Category I SSO results in a discharge to **waters of the State** (a drainage channel or a surface water, if not fully recovered), the following reporting requirements apply:

- Within two hours of notification of the spill event the Public Works Supervisor or On Call Supervisor will:
  - Notify the RWQCB Electronic Reporting System,
  - Notify OES (and obtain spill number for use in other reports), and
  - Notify the County Environmental Health Services Agency.
- Within 24 hours of notification of the spill event, the Sanitation Operations Manager or his/her designee will certify to the RWQCB that OES and the County Environmental Health Services Agency were notified within two hours.
- Within 3 business days of the spill event, the Sanitation Operations Manager or his/her designee will certify the initial report using CIWQS.
- Within 15 calendar days of the conclusion of SSO response and remediation, the Sanitation Operations Manager or his/her designee will submit the Final Certification to the RWQCB.
- The Sanitation Operations Manager or his/her designee will attach additional information to the certified report, in the form of an attachment, as needed at any time.

6.11.2.2. Category 2 SSOs

Within 30 calendar days after the end of the calendar month in which the SSO occurs, the Public Works Supervisor will submit an electronic report to SWRCB (using CIWQS). The Sanitation Operations Manager or his/her designee will certify the report.

6.11.2.3. Private Lateral Sewage Discharges

The Sanitation Operations Manager may report private lateral SSOs to the SWRCB (using CIWQS) **at the Districts' or County's discretion**, specifying that the sewage discharge

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[2] Ibid.

occurred and was caused by a private lateral and identifying the responsible party (other than the Districts' or the County), if known.

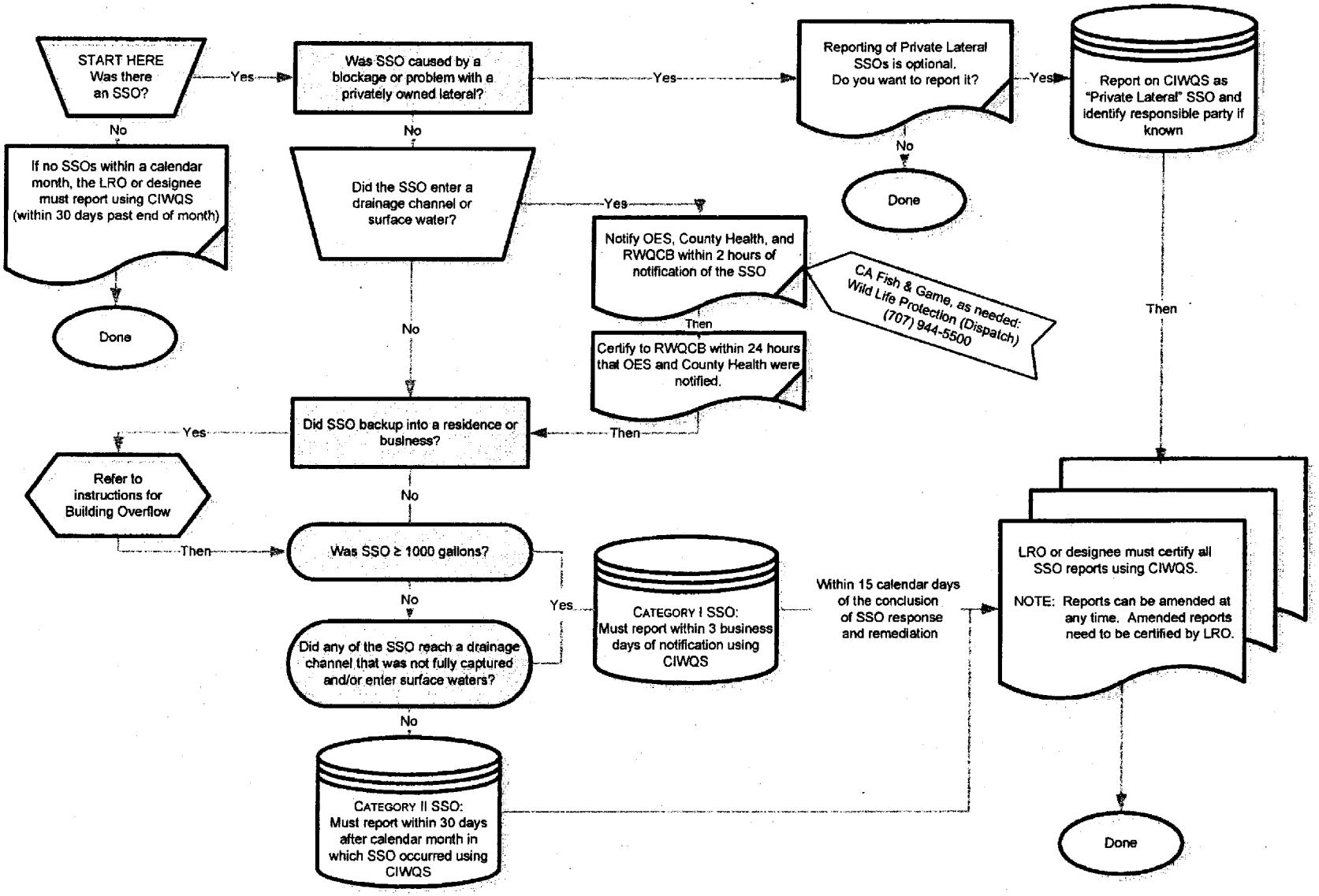
6.11.2.4. No Spill Certification (Monthly)

If there are no SSOs during the calendar month, then the Public Works Supervisor will submit an electronic report that Districts' and County did not have any SSOs. The Sanitation Operations Manager or his/her designee will certify the report **within 30 calendar days after the end of each calendar month.**

6.11.2.5. CIWQS Not Available

In the event that CIWQS is not available, the Public Works Supervisor will fax all required information to the RWQCB office in accordance with the time schedules identified above. In such event, SCCSD will submit the appropriate reports using CIWQS as soon as practical. The RWQCB fax number is (805) 543-0397. A sample form for SSO reporting via fax is included as Appendix 6-B.

Figure 6-2: External Reporting Requirement Flow Chart



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Reporting and Certification Checklist	Two-Hour Notification / 24-Hour Certification & SWRCB
Category 1 SSOs that reach Surface Waters **2-Hour Notification:** √ Regulatory Agencies (OES, County Health, and RWQCB) must be notified within two hours of ANY discharge of sewage (untreated/partially treated) to a surface water or drainage channel (that is not fully captured and returned to sewer). **24-Hour Certification:** √ Any SSO requiring notification based on the two-hour rule must be followed up with a certification submitted to the RWQCB within 24 hours. **Within 3 Business Days of Notification:** √ As a Category I SSO, it must be reported to SWRCB using CIWQS. **Within 15 Calendar Days of Conclusion of Response/Remediation:** √ Must be certified by LRO using CIWQS.	1) **OES** (916) 845-8911 or (800) 852-7550 Make sure you ask for an "OES Control Number" (for RWQCB). 2) **County Health Officer or Environmental Health Office** □ Phone Number: □ After Hours: 3) **RWQCB – Region 3 –** Phone in the 2-Hour notification and follow up within 24 hours using the online certification or utilize the online feature for both. o Phone (2-Hour Notification) □ Phone & Voice Mail: (805) 542-4782 Cecile De Martini □ Alternate Number: □ Fax Number: (805) 543-0397
Category 1 SSOs that do not reach Surface Waters **Within 3 Business Days of Notification (SWRCB/CIWQS):** √ As a Category I SSO, it must be reported to SWRCB using CIWQS. **Within 15 Calendar Days of Conclusion of Response/Remediation:** √ Must be certified by LRO using CIWQS.	**California Integrated Water Quality Systems (CIWQS)** SWRCB Reporting Timeframes Depend on the Size and Final Destination of the SSO. o CIWQS must be used for reporting if the website is available □ http://ciwqs.waterboards.ca.gov □ User Name: _____ □ Password: _____ □ Waste Discharge Identification Number (WDID) #. _____ o RWQCB Fax is only for use if the CIWQS website is down
Category 2 SSOs (<1,000, no Property Damage or Surface Waters) **Within 30-Days After End of Calendar Month with SSO Event:** √ Must be reported to SWRCB using CIWQS. √ Must be certified by LRO using CIWQS.	
Negative Reporting (No SSOs in Month) **Within 30 days past the end of the month** √ The LRO or designee must report using CIWQS	**Sanitary Sewer Overflow (SSO)** Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system that: (i) Reach waters of the United States (including storm drains, unless fully captured and returned to sanitary sewer sytem); (ii) Do not reach waters of the United States; and (iii) Backs up into buildings and on private property that are caused by City-owned lines.
Private Lateral SSOs (Reporting is Optional) √ If reporting is desired, report to SWRCB as "Private Lateral" SSO and identify responsible party, if known (not the City), using CIWQS. √ Must be certified by LRO using CIWQS.	

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6.11.3. Internal SSO Documentation

6.11.3.1. Category I and II SSOs

The first responder will complete a work order and the Sewer Field Crew Report form and provide copies to the Public Works Supervisor or On Call Supervisor.

The Public Works Supervisor or On Call Supervisor will complete the Private Property SSO Incident Form (Appendix 6-D) if an SSO has occurred in a residence or building.

The Public Works Supervisor will create and maintain a file for each individual SSO. The file should include the following information:

- Initial service call information
- Sewer Field Crew Report form
- Copies of the CIWQS report forms
- Volume estimate
- Failure analysis investigation results

The following are for Category I SSOs, but optional for Category II SSOs:

- Appropriate maps showing the spill location
- Photographs of spill location
- Water quality sampling and test results, if applicable

6.11.3.2. Private Lateral SSOs

The first responder will complete the Sewer Field Crew Report form and provide copies to the Public Works Supervisor or On Call Supervisor.

A separate file will be prepared for each individual SSO, at the Assistant Public Works Superintendent's discretion. The file should include any relevant information from the above list.

6.11.4. External SSO Record Keeping Requirements[3]

Individual SSO records must be maintained by SCCSD for a minimum of **five years** from the date of the SSO. This period may be extended when requested by a RWQCB Executive Officer.

All records shall be made available for review upon SWRCB or RWQCB staff's request.

Records shall be retained for all SSOs, including but not limited to the following when applicable:

- CIWQS Certified report;
- All original recordings for continuous monitoring instrumentation;
- Service call records and complaint logs of calls received by SCCSD;
- SSO calls;

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[3] Ibid.

- SSO records;
- Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps;
- Work orders, work completed, and any other maintenance records from the previous five years which are associated with responses and investigations of system problems related to SSOs;
- A list and description of complaints from customers or others from the previous five years; and
- Documentation of performance and implementation measures for the previous five years.

If water quality samples are required by an environmental or health regulatory agency or State law or if voluntary monitoring is conducted by SCCSD or its agent(s) as a result of any SSO, 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.

6.12. Post SSO Event Debriefing

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

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

6.13. Equipment

The specialized equipment that is required to support this Overflow Emergency Response Plan is:

Closed Circuit Television (CCTV) Inspection Unit – A CCTV inspection unit is required to determine the root cause for all SSOs from gravity sewers.

Camera – A digital or disposable camera is required to record the conditions upon arrival, during clean up, and upon departure.

Emergency Response Truck – A utility body pickup truck is required to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools should include containment and clean up materials.

Global Positioning System (GPS) Unit – A hand held GPS unit is required to determine the coordinates of spills for use in meeting RWQCB SSO reporting requirements.

Portable Generators, Portable Pumps, Piping, and Hoses – Portable generators, portable pumps, piping, and hoses ranging in size from 2 to 6 inches in diameter are required to pump spilled sewage and/or contaminated water back into the sewer system.

Combination Sewer Cleaning Truck – A combination high velocity sewer cleaning truck with vacuum tank is required to clear blockages in gravity sewers, vacuum spilled sewage, and wash down the impacted area following the SSO event.

6.14. SSO Response Training

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

6.14.1. Initial and Annual Refresher Training

All 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 Plan. 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.

6.14.2. SSO Response Drills

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

6.14.3. 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 should include date, time, place, content, name of trainer(s), and names of attendees.

6.15. Contractors Working on Districts' and County Sewer Facilities

All contractors working on the Districts' sewer facilities will be required to develop a project-specific OERP that is subject to Districts' and County's approval. All contractor personnel will be required to receive training in the contractor's OERP and to follow that OERP in the event that they cause or observe an SSO.

Appendix 6-A: Sewer Field Crew Report Form

SEWER FIELD CREW REPORT

SSO EVENT ID: _____

SPILL DATE: ____/____/____

ESTIMATED START TIME OF SPILL: _____ AM☐ PM☐

ESTIMATED TIME OF CREW ARRIVAL: _____ AM☐ PM☐

SPILL RESPONSE COMPLETION TIME: _____ AM☐ PM☐

STREET ADDRESS: _____

CROSS STREET: _____

CITY: _____ ZIPCODE: _____

OVERFLOW LOCATION: LATITUDE: ____._____ LONGITUDE: -____._____

SPILL DETAILS:

SSO SOURCE: MANHOLE☐ GRAVITY MAIN☐ FORCE MAIN☐ CLEAN OUT☐ PRIVATE LATERAL☐
PUMP STATION☐ OTHER _____

SSO DESTINATION: STORM DRAIN☐ CAPTURED FROM STORM DRAIN (100%)☐ BUILDING☐ YARD/LAND☐
SURFACE WATERS☐ NO SURFACE WATERS INVOLVED☐ OTHER _____

ESTIMATED SPILL VOLUME: _____ GALLONS

ESTIMATED VOLUME OF SPILL RECOVERED: _____ GALLONS

VOLUME NOT RECOVERED FROM STORM DRAIN/SURFACE WATERS _____ GALLONS

METHOD USED TO ESTIMATE VOLUME: EYEBALL☐ MEASURED☐ OTHER: _____

POSSIBLE CAUSE: ROOTS☐ GREASE☐ DEBRIS☐ BROKEN PIPE☐ VANDALISM☐ PRIVATE LATERAL☐
CAPACITY (HEAVY RAIN)☐ CONSTRUCTION DAMAGE☐ PUMP STATION FAILURE☐ POWER FAILURE☐
OTHER _____

RESPONSIBLE PARTY (ONLY IF KNOWN) : _____

DID SSO ENTER DRAINAGE CHANNEL OR SURFACE WATERS? YES☐ NO☐

WAS 100% OF THE SSO RECOVERED AND RETURNED TO SEWER? YES☐ NO☐

WERE BEACHES IMPACTED? YES☐ NO☐ WAS SSO POSTED? YES☐ NO☐

NAMES OF CREW RESPONDING TO SPILL: _____

OTHER INFORMATION: _____

_____

_____

Appendix 6-B: Sample Fax Form for SSO Reporting

THIS FORM IS BEING SUBMITTED TO REPORT AN SSO TO SATISFY THE CALIFORNIA SWRCB 2-HOUR/24-HOUR REPORTING REQUIREMENT OR BECAUSE THE CIWQS WEBSITE IS UNAVAILABLE.

TO: RWQCB, REGION: 3 **REPORTING AGENCY:** SANTA CRUZ COUNTY SANITATION DISTRICT

FAX NUMBER: (805) 543 - 4623 **WDID:** _____

COUNTY WHERE SSO OCCURRED: _____ ONGOING INVESTIGATION: YES ☐ NO / COMPLETE ☐

FAX SENT AT: ___/___/___ AT ___:___ (24-HOUR) VOICE MESSAGE: ___/___/___ AT ___:___

OES CONTROL NUMBER: _____ COUNTY HEALTH CALLED: ___/___/___ AT ___:___

OVERFLOW LOCATION: LATITUDE: _____._____ LONGITUDE: -_____._____

STREET ADDRESS: _____

CROSS STREET: _____

CITY: _____ ZIPCODE: _____

DATE/TIME AGENCY WAS NOTIFIED OF SSO: ___/___/___ AT ___:___

AGENCY STAFF ARRIVED: ___/___/___ AT ___:___ SSO ENDED: ___/___/___ AT ___:___

WAS A PRIVATE LATERAL THE CAUSE OF THE SSO?	YES ☐ NO ☐
DID SSO ENTER DRAINAGE CHANNEL OR SURFACE WATERS?	YES ☐ NO ☐
WAS 100% OF THE SSO RECOVERED AND RETURNED TO SEWER?	YES ☐ NO ☐
WERE BEACHES IMPACTED?	YES ☐ NO ☐
WAS SSO POSTED?	YES ☐ NO ☐

ESTIMATED SSO VOLUME TOTAL: _____(GALLONS) VOLUME RECOVERED: _____(GALLONS)

ESTIMATED SPILLED SEWAGE VOLUME THAT REACHED SURFACE WATERS: _____(GALLONS)

SSO SOURCE: MANHOLE ☐ GRAVITY MAIN ☐ FORCE MAIN ☐ CLEAN OUT ☐ PRIVATE LATERAL ☐
PUMP STATION ☐ OTHER _____

SSO DESTINATION: STORM DRAIN ☐ CAPTURED FROM STORM DRAIN (100%) ☐ BUILDING ☐ YARD/LAND ☐
SURFACE WATERS ☐ NO SURFACE WATERS INVOLVED ☐ OTHER _____

SSO CAUSE: ROOTS ☐ GREASE ☐ DEBRIS ☐ VANDALISM ☐ CONSTRUCTION DAMAGE ☐ PIPE FAILURE ☐
PUMP STATION FAILURE ☐ POWER FAILURE ☐ CAPACITY (HEAVY RAIN) ☐
OTHER _____

DESCRIBE RESPONSE AND CORRECTIVE ACTION TAKEN: _____

_____

WERE SAMPLES TAKEN? NO ☐ YES: _____ (AGENCY/LABORATORY)

IF YES, TESTING FOR: TOTAL COLIFORM ☐ FECAL COLIFORM ☐ BOD ☐ DISSOLVED OXYGEN ☐ AMMONIA ☐

REPORTING PERSON NAME: _____ PHONE NUMBER: _____

LRO'S NAME: _____ LRO'S PHONE NUMBER: _____

Revised June 2009

Appendix 6-C: Private Property SSO Protocol

Districts' and County Staff will follow the protocol outlined in Appendix 6-C. The incident will be documented using the Private Property SSO Incident Form included as Appendix 6-D.

Private Sanitary Sewer Systems

A. All sewer lines and lift stations from the building wall to and including the connection to the sewer main are the property of the owner of the connected building. All property owners whose properties are connected to a sewer or main or otherwise connected to the District's sewer system by sewer lateral shall, at their own expense, maintain the private sanitary sewer collection system and private sewer lateral in a fully functioning condition and ensure the lines are free of cracks, leaks, inflow or infiltration of extraneous water, root intrusion or open joints. Property owners shall ensure that lines drain freely to the sewer main without excessive sags that collect grease and sediments. Owners shall also ensure that pump or lift stations are maintained in proper working order.

B. Owners of Private Sanitary Sewer Systems shall ensure that they are maintained to prevent sanitary sewer overflows. If a sanitary sewer overflow occurs, the property owner shall cause the overflow to stop immediately and have sewer blockages, breaks, and other deficiencies permanently repaired by a licensed plumber within ten working days.

   1. If a sanitary sewer overflow occurs that flows off of the property, and response from the property owner is not immediate, or the property owner is unable to stop the overflow immediately, District staff may enter onto the property and access to the sewer system to attempt to stop the overflow. The cost of material and labor for stopping the overflow shall be paid by the property owner. The District will not be held liable for any damage to the sewer system while attempting to stop an overflow.

   2. The property owner shall be required to reimburse the District for any fines levied against the District by regulatory agencies as a result of failure of the Private Sanitary Sewer System.

SCCSD Code Section 7.04.375, FCSD Code Section 3.04.465, DCSD Section 4.04.445, County of Santa Cruz adopted by reference SCCSD code 7.04.375

Appendix 6-D: Private Property SSO Incident Form

PRIVATE OVERFLOW REPORTING PROPERTY SSO INCIDENT FORM

COMPLETE THIS FORM IF AN OVERFLOW (SSO) HAS OCCURRED IN A BUILDING OR RESIDENCE

AGENCY STAFF ARRIVED ON-SITE: ____/_____/_____ TIME:_____:_____ EMPLOYEE NAME: _____

RESIDENT NAME: _____ PROPERTY OWNER/MANAGER:_____

STREET ADDRESS: _____ MAILING ADDRESS: _____

CITY AND ZIPCODE: _____ CITY AND ZIPCODE: _____

PHONE: _____ PHONE: _____

YEAR HOME WAS BUILT: _____ # OF BATHROOMS: _____ # OF ROOMS AFFECTED: _____

NUMBER OF PEOPLE LIVING AT THIS ADDRESS: _____ APPROXIMATE TIME SEWAGE WAS SITTING: _____

APPROXIMATE AMOUNT OF SPILL: _____ *(GALLONS)* NUMBER OF PICTURES TAKEN:_____ ☐ DIGITAL ☐ FILM

CUSTOMER CLEAN OUT: ☐ NON-EXISTENT ☐ FULL ☐ EMPTY

AGENCY CLEAN OUT: ☐ NON-EXISTENT ☐ FULL ☐ EMPTY

LOCATION/SEWER: ☐ STREET ☐ REAR EASEMENT ☐ MANHOLE #_____ TO _____

☐ MAINLINE ☐ SERVICE LINE ☐ DOUBLE-WYE

DAMAGE: ☐ BLACK WATER ☐ GREY WATER ☐ FRESH WATER

CLEANING COMPANY CONTACTED BY OWNER: ☐ NO ☐ YES/TIME CALLED: ____:____ (WAIT FOR COMPANY TO ARRIVE)

CLEANING COMPANY CONTACT INFORMATION: _____

IS MANHOLE VISIBLY HIGHER THAN THE DRAIN THAT OVERFLOWED? ☐ YES ☐ NO

IS FINISHED FLOOR 12" OR MORE BELOW NEAREST UPSTREAM MANHOLE? ☐ YES ☐ NO

DOES THE CUSTOMER HAVE A BACKFLOW PREVENTION DEVICE (BPD)? ☐ YES ☐ NO

IF YES, WAS THE BPD OPERATIONAL AT THE TIME OF THE OVERFLOW? ☐ YES ☐ NO

TYPE OF FLOORING IN THE AREAS AFFECTED AND CONDITION (CRACKING, VISIBLE OPEN SPACES, ETC.)

☐ TILE ☐ CARPET ☐ WOOD ☐ OTHER: _____

DESCRIBE CONDITION: _____

ARE THERE BASEBOARDS: ☐ NO ☐ YES / BASEBOARD MATERIAL: _____

☐ BASEBOARD BOTTOM HAS TIGHT SEAL WITH FLOOR ☐ BASEBOARD TOP HAS TIGHT SEAL WITH WALL

☐ BASEBOARD HAS SPACE BETWEEN BOTTOM & FLOOR ☐ BASEBOARD HAS SPACE BETWEEN BASEBOARD & WALL

HAS THE RESIDENT HAD ANY PLUMBING WORK DONE RECENTLY? ☐ YES ☐ NO ☐ UNKNOWN

HAS THE AREA BEEN REMODELED? ☐ YES ☐ NO ANY ACTIVE PLUMBING PROJECTS OBSERVED? ☐ YES ☐ NO

ANY PLUMBING PROJECTS WITHIN THE LAST 3 YEARS? _____

HAVE THERE BEEN ANY PREVIOUS SPILLS AT THIS LOCATION? ☐ YES ☐ NO ☐ UNKNOWN

ADDITIONAL INFORMATION: _____

_____

_____

REVIEWED BY:_____ REVIEW DATE: _____/_____/_____

Appendix 6-E: Collection System Failure Analysis Form

COLLECTION SYSTEM FAILURE ANALYSIS FORM

INCIDENT REPORT #: _____ PREPARED BY: _____

ADDRESS/LOCATION OF SSO: _____

TOTAL SSO VOLUME: _____ (GALLONS) VOLUME RECOVERED: _____ (GALLONS)

CAUSE: ROOTS ☐ GREASE ☐ DEBRIS ☐ VANDALISM ☐ CONSTRUCTION DAMAGE ☐ PIPE FAILURE ☐
PUMP STATION FAILURE ☐ POWER FAILURE ☐ CAPACITY (HEAVY RAIN) ☐ OTHER _____

SUMMARY OF HISTORICAL SSOS, BACKUPS, SERVICE CALLS, OTHER PROBLEMS

RECORDS REVIEWED BY: _____ RECORD REVIEW DATE: _____

EVENT DATE	CAUSE/PROBLEM	DATE PREVIOUSLY CLEANED	CREW RESPONDING TO CALL

SUMMARY OF CCTV INFORMATION

CCTV INSPECTION DATE: _____ TAPE NAME/NUMBER: _____

CCTV TAPE REVIEWED BY: _____ CCTV REVIEW DATE: _____

CCTV OBSERVATIONS: _____

RECOMMENDATIONS

☐ NO CHANGES OR REPAIRS REQUIRED

☐ MAINTENANCE EQUIPMENT _____

☐ MAINTENANCE FREQUENCY _____

☐ REPAIR (LOCATION AND TYPE) _____

☐ ADD TO CAPITAL IMPROVEMENT REHABILITATION/REPLACEMENT LIST _____

ADDITIONAL INFORMATION: _____

REVIEWED BY: _____ REVIEW DATE: ____/____/____

Appendix 6-F: Method for Estimating SSO Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available.

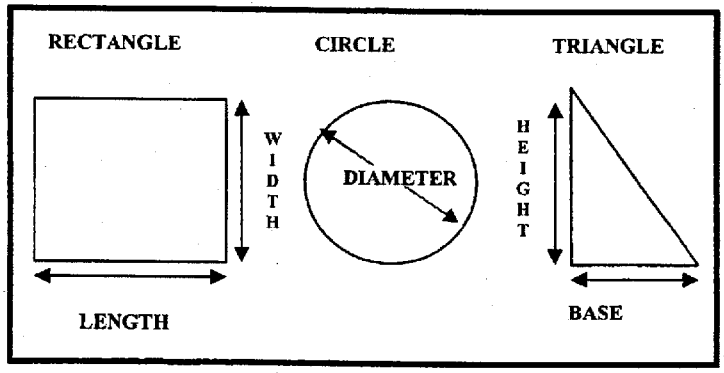
Method 1 Visual Estimate

The volume of small spills can be estimated using an "eyeball estimate". To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

Method 2 Measured Volume

The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Common Shapes and Dimensions



Step 1 Sketch the shape of the contained sewage (see figure above).

Step 2 Measure or pace off the dimensions.

Step 3 Measure the depth at several locations and select an average.

Step 4 Convert the dimensions, including depth, to feet.

Step 5 Calculate the area in square feet using the following formulas:

Rectangle: Area = length (feet) x width (feet)

Circle: Area = diameter (feet) x diameter (feet) x 0.79

Triangle: Area = base (feet) x height (feet) x 0.5

Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.

Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons

Method 3 Duration and Flow rate

Calculating the volume of larger spills, where it is difficult or impossible to measure the area and depth, requires a different approach. In this method, separate estimates are made of the duration of the spill and the flow rate. The methods of estimating duration and flow rate are:

Duration: The duration is the elapsed time from the time the spill started to the time that the flow was restored.

Start time: The start time is sometimes difficult to establish. Here are some approaches:

- Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.
- Changes in flow on a downstream flowmeter can be used to establish the start time. Typically the daily flow peaks are "cut off" or flattened by the loss of flow. Comparing hourly flow data during the spill event with flow data from prior days can identify the loss of flow.
- Conditions at the spill site change over time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. After a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process.
- It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). In this case the spill would occur during the peak flow periods (typically 10:00 to 12:00 and 13:00 to 16:00 each day). Spills that occur due to peak flows in excess of capacity will occur only during, and for a short period after, heavy rainfall.

End time: The end time is usually much easier to establish. Field crews on-site observe the "blow down" that occurs when the blockage has been removed. The "blow down" can also be observed in downstream flowmeters.

Flow Rate: The flow rate is the average flow that left the sewer system during the time of the spill.

There are three common ways to estimate the flow rate:

- The San Diego Manhole Flow Rate Chart: This chart, included as Appendix 6-G, shows sewage flowing from manhole covers at a variety of flow rates. The observations of the field crew can be used to select the appropriate flow rate from the chart. If possible, photographs are useful in documenting basis for the flow rate estimate.
- Flowmeter: Changes in flows in downstream flowmeters can be used to estimate the flow rate during the spill.
- Counting Connections: Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of

connections by 200 to 250 gallons per day per connection or 8 to 10 gallons per hour per connection.

For example: 22 upstream connections x 9 gallons per hour per connection

= 198 gallons per hour / 60 minutes per hour

= 3.3 gallons per minute

Spill Volume: Once duration and flow rate have been estimated, the volume of the spill is the product of the duration in hours or days and the flow rate in gallons per hour or gallons per day.

For example:

Spill start time = 11:00

Spill end time = 14:00

Spill duration = 3 hours

3.3 gallons per minute x 3 hours x 60 minutes per hour

= 594 gallons

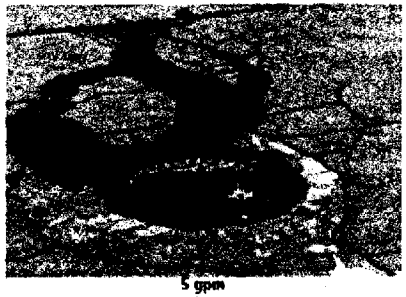
Appendix 6-G: Manhole Overflow Flowrate Guide

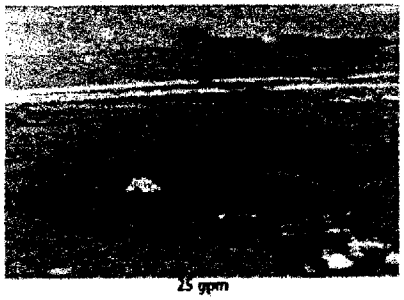
City of San Diego
Metropolitan Wastewater Department

Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)

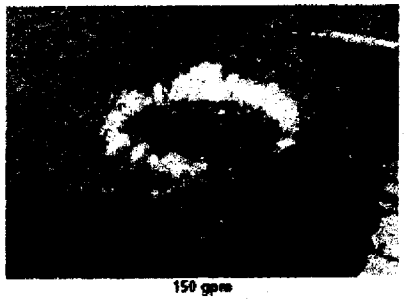
Wastewater Collection Division
(619) 654-4160

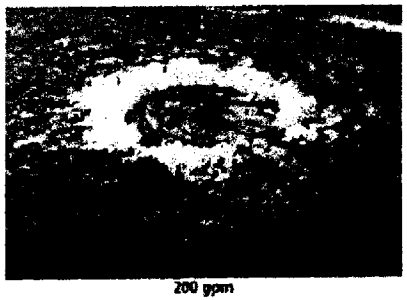

5 gpm


25 gpm


50 gpm

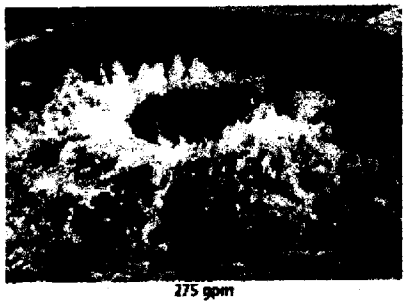

100 gpm


150 gpm


200 gpm


225 gpm


250 gpm


275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4/99

0396

Appendix 6-H: Sample Warning Sign

DANGER!
CONTAMINATED WATER
KEEP OUT

AGUA CONTAMINADA
ALEJESE
PELIGRO!

Contact Santa Cruz County Sanitation District Operations at:

(831) 477-3907

For Additional Information

Section 7. FOG Control Program

7.1. Introduction

This section of the SSMP presents the Districts' and County's approach to preventing FOG-related SSOs.

7.2. Requirements for FOG Control Section

The summarized 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, Best Management Practices requirements, record keeping and reporting requirements;

(e) Authority to inspect grease producing facilities, enforcement authorities, and determination of whether the 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.

7.3. Nature and Extent of FOG Problem

The Districts had two FOG-related SSOs for the period between January 2010 and May 2011. The conclusion is that the current FOG Source Control Program, along with the O&M Program described in Section 4 of the SSMP – Operations and Maintenance Program, are effective at minimizing FOG-related SSOs.

7.4. FOG Source Control Program

The Districts' and the County have a FOG Source Control Program that is administered, along with the pretreatment program, by the Environmental Compliance Unit. The FOG Source Control Program has been in place since 1977. The program elements include:

7.4.1. Residential FOG Control

The residential FOG outreach program consists of advertising in local newspapers and mailers, as well as door hangers used in areas where known grease problems exist. The focus of the program is to educate residents and small businesses on the proper disposal of FOG and about the consequences of discharging grease and other harmful wastes into the sewer.

Currently, the public outreach program contains several elements designed to help educate the public about FOG issues.

- The bilingual "Drain Etiquette" mailer is sent out once a year or more often if residential areas are consistently having problems. This mailer details what is and what is not appropriate to be sending down residential sinks, and why these issues are important. Along with specifying how to properly dispose of paints and identifying items that should not be put into the sewer system, the "Drain Etiquette" mailer details explicitly what causes FOG problems, how to reduce FOG loads on the sewer lines, and why it is important to eliminate FOG from sewer lines.
- Additional public outreach materials include bilingual (Spanish and English) residential door hangers that are distributed to residential areas where sewer maintenance workers and repeat spills indicate there are FOG problems in sewer lines. As with the "Drain Etiquette" mailers, the door hangers identify the problems associated with FOG and how these problems can be mitigated. The door hangers state that there is a problem in the neighborhood where the door hangers are being distributed.
- Twice a year SCCSD publishes an educational grease ad in several local papers to reduce residential sources of grease in our sanitary sewer. The ad is published before Thanksgiving and Christmas in order to reduce problems associated with grease from deep frying turkeys and details ways in which people can reduce FOG in sewers and properly dispose of cooking grease.

7.4.2. Commercial FOG Control

All food service facilities (FSFs) must have pretreatment devices (grease interceptors or traps) on all drains from their kitchens. Grease interceptors or traps must meet sizing requirements and design criteria set forth by SCCSD. All grease interceptors and traps must be maintained according to a pump schedule specified by the District Engineer. Invoices and manifests of pumping must be sent to SCCSD as proof of maintenance. The maximum allowable pump schedule is every 180 days, but may be more frequent if necessary. All food establishments are inspected at least once a year.

Best Environmental Management Practices (BEMPs) requirements for food service facilities include installing screens on all sink drains used for dishwashing, eliminating the use of grease interceptor/trap additives, eliminating the use of garbage disposal units, scraping all plates prior

to the primary rinse, and proper storage of used deep-fryer oil. SCCSD staff developed a bilingual "Restaurant Wastewater" BEMP pamphlet detailing appropriate ways to reduce the FOG loads on private laterals and the Districts' sewer lines. It also details proper janitorial cleaning methods, differences between interior and exterior grease interceptors, and the proper way to self clean interior grease interceptors. The BEMP includes a list of local liquid waste haulers authorized to discharge at the City of Santa Cruz Wastewater Treatment Plant.

7.4.3. Fryer to Fuel Program

SCCSD participated in a program funded by the Environmental Protection Agency (EPA), Region 9 to collect used fryer oil from local restaurants, turn it into biodiesel, and use the resulting blended biodiesel product in heavy equipment in the Department of Public Works. The Program, called the Fryer to Fuel Program, resulted in 9,947 gallons of waste oil collected over an eight-week period, improved storage practices of tallow, offered dramatic improvements in the ongoing threat to water quality, and increased collaboration and communication between the food service and tallow collection industries. The pilot program enrolled 31 of the largest waste oil producers in Santa Cruz County including UCSC, the Santa Cruz Wharf, the Capitola Mall, and multiple strip malls and large shopping complexes.

7.4.4. Green Business Program

Commercial outreach has also taken the form of the Monterey Bay Green Business Program. Goals of the green business program include promoting pollution prevention, waste minimization, and implementation of best management practices that go above and beyond the regulatory standards.

The program began certifying restaurants in July of 2004. A significant portion of the program for restaurants, hotels, and plumbers is dedicated to minimizing fats, oils, and grease into the sanitary sewer.

Several new jurisdictions joined the program in 2008, including San Benito County, several areas in Monterey County, and the City of Santa Cruz.

A Task Force consisting of multimedia regulators (stormwater, air, hazardous materials, as well as wastewater) and several non-profit organizations continues to meet every quarter to coordinate the program.

7.4.5. Inspection and Enforcement

During the annual inspections, all grease interceptors, traps, and drains are visually inspected to see if grease and/or solids are being allowed to enter the sanitary sewer. Additionally, pump records are reviewed to ensure that industrial users are complying with the Districts' and County Codes.

SCCSD uses its CMMS (GBA) to filter through the database and sort out all problems and stoppages associated with grease. SCCSD staff uses the data to identify and track problem areas and they implement the appropriate source control measures, ranging from public outreach in residential areas to inspection and monitoring of FOG producing facilities and their pretreatment devices, in an effort to become more efficient in eliminating FOG from sewer lines.

The Environmental Compliance Unit staff has developed an Enforcement Response Plan (ERP) in accordance with Federal Pretreatment guidelines that details timelines and enforcement actions that are specifically aimed at FOG compliance issues and violations. The Districts' and the County are prepared to bring repetitive non-compliant dischargers before the Board of Directors for the appropriate assessment of monetary penalties.

7.4.6. Sanitary Sewer Overflow Enforcement Response

The Districts and the County have the authority to take action and levy fines on property owners when an SSO has occurred that impacts the public, public property, public right-of-way, or surface water. Additionally, SCCSD has developed a Private Sanitary Sewer Overflow Prevention Pamphlet that details the District and County's Code that addresses private sanitary sewer systems. The pamphlet explains the ways in which property owners should maintain their sewer lines and develop a sewer system management plan. It also gives information about notifying SCCSD if an overflow has occurred. The pamphlets have been distributed to most property management companies and residents in the three Districts and the County.

7.4.7. Pollution Prevention

Districts' and County personnel continue to educate light industries operating in Santa Cruz County on process-specific pollution prevention and waste minimization opportunities. During audits, Best Environmental Management Practices (BEMP) pamphlets and demonstrations for each particular industry are relayed to business owners, managers, and employees.

Pollution prevention workshops are held periodically for restaurants and plumbers. The workshop for plumbers focused on sanitary sewer overflow prevention and sewer spill notification. The workshops were held to get feedback on regulating private sewer systems such as commercial shopping centers, high density housing, and residential laterals.

7.5. Staffing

SCCSD has one Pretreatment Program Coordinator and two Pretreatment Program Specialists to support the Pretreatment Program, which includes the FOG Source Control Program. All three employees are certified Environmental Compliance Inspectors under the California Water Environment Association Technical Certification Program. SCCSD deems this level of staffing to be adequate.

7.6. Commercial FOG Disposal Sites

SCCSD believes that there are adequate disposal sites for the FOG generated within its service areas. The County's sewer systems (the CSA systems) do not serve commercial enterprises.

As described above, SCCSD participates in the FOG outreach and the Green Business Program in order to reduce FOG in sewers. In addition to this program, there are a variety of options available for commercial FOG disposal:

- The jointly owned and operated (City and County) wastewater treatment facility in Santa Cruz has a disposal facility for FOG from commercial grease interceptors or traps. This facility has the capacity to handle FOG generated in both the City and

County. The FOG is blended with the sludge generated from treatment processes and then put through a digestion system that recovers methane produced from the breakdown of the sludge. This in turn helps to generate the electrical power needed to run the treatment facility.

- The wastewater treatment plant located in the City of Watsonville has a similar FOG disposal facility and energy co-generation program.
- Additional disposal facilities (for deep fryer-type cooking oil only) are available to residents at the Household Hazardous Waste disposal facilities in Ben Lomond, Buena Vista, and City of Santa Cruz landfills.
- Facilities that accept cooking oil from commercial sources are located at the County landfill sites.

Section 8. System Evaluation and Capacity Assurance Plan

8.1. Introduction

This section of the SSMP presents the Districts' programs and activities to provide adequate sewer system capacity. Staff monitors the County's systems to ensure that they posses adequate capacity to serve those systems users.

8.2. Requirements for System Evaluation and Capacity Assurance Plan Section

The summarized requirements for the System Evaluation and Capacity Assurance Plan (SECAP) element of the SSMP are:

The Agency shall prepare and implement a capital improvement plan (CIP) that will provide 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. 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.

(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, inflow and infiltration (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.

(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 as described in Section D. 14 (of the GWDR).

8.3. Evaluation, Design Criteria, Capacity Enhancement Measures

The Districts sewer systems have not experienced any SSOs that were caused by flows exceeding the capacity of the sewer system facilities suggesting that there is adequate capacity to transport current peak flows.

The Districts and County have an ongoing program of flow monitoring and hydraulic modeling to evaluate the capacity of their sanitary sewer system facilities. The capacity evaluation was completed and the report will be finished in 2011. The results of the evaluation will be used to identify capacity enhancement projects and changes to the County's design criteria.

Section 9. Monitoring, Measurement, and Program Modifications

9.1. Introduction

This section presents the Districts' and County's approach to Monitoring, Measurement, and Program Modifications.

9.2. Requirements for Monitoring, Measurement, and Program Modifications Section

The requirements for the Monitoring, Measurement, and Program Modifications (MMPM) section of the SSMP follow.

The Enrollee shall:

(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.

9.3. Performance Measures

The indicators that the Districts will use to measure the performance of their sanitary sewer systems and the effectiveness of the SSMP are:

- Total number of SSOs;
- Number of SSOs for each cause (roots, grease, debris, pipe failure, capacity, pump station failures, and other);
- Portion of sewage contained compared to total volume spilled;
- Volume of spilled sewage discharged to surface water; and
- Comparison of planned to actual performance for preventive maintenance.

9.4. Baseline Performance

The baseline performance is the Districts sanitary sewer system performance for the period prior to the development and implementation of the SSMP. There have been no reported SSOs for the DCSD or FCSD for the period January 1, 2008 through March 30, 2009. The baseline performance data for SCCSD is shown in Table 9-1.

Table 9-1: SCCSD Baseline Performance for Jan 1, 2008 – March 30, 2009

Performance Indicator	Value
Number of SSOs*	4
Volume, gallons	475
Median Volume, gallons	100
Volume Recovered, gallons	50
Portion Recovered	11%
Volume to Surface Waters, gallons	225
Portion to Surface Waters	47%
Primary Causes of SSOs	Grease – 50% Roots – 50%
Size of System, miles	202
SSO Rate, SSOs/100 Miles/Year	2.0
Volume Rate, Gallons/100 Miles/Year	235

9.5. Performance Monitoring and Program Changes

The Districts and the County will evaluate the performance of their sanitary sewer systems at least annually using the performance measures identified in Section 9.3 of the SSMP – Performance Measures, above. SCCSD will update the data and analysis of performance measures at the time of the evaluation.

The Districts and County may use other performance measures in the evaluation and will prioritize actions and initiate changes to this SSMP and the related programs based on the results of the evaluation.

9.6. SSMP Updates

The Districts and County will update the SSMP at least every five years. The first update will be completed on or before August 1, 2013.

The Districts and County will determine the need to update the SSMP more frequently based on the results of the annual audit and the performance of their sanitary sewer systems using information from the Monitoring and Measurement Program. In the event that the Districts decide that an update is warranted, the process to complete the update will be identified at that time. SCCSD will complete the update within one year following identification of the need for the update.

Staff will seek the approval from the District and County Boards for any significant changes to the SSMP. The authority for approval of minor changes such as employee names, contact information, or limited procedural changes is delegated to the District Engineer.

Section 10. SSMP Program Audits

10.1. Introduction

This section of the SSMP presents the process that the Districts and County will follow to audit the SSMP.

10.2. Requirements for SSMP Program Audits

The summarized regulatory requirements for the SSMP are:

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 compliance with the SSMP requirements identified in this subsection (D.13 of the GWDR), including identification of any deficiencies in the SSMP and steps to correct them.

10.3. SSMP Audits

The Districts and the County will audit the SSMP every two years. The audit will determine whether the SSMP meets the GWDR, whether the SSMP reflects SCCSD's current practices, and whether SCCSD is following the SSMP. The first audit will be completed by August 1, 2011 and will cover CY 2008 and CY 2009.

A team consisting of SCCSD staff will coordinate the audit process. The audit team will include representatives from the County, DCSD and FCSD and may also include members from other areas of the County, outside agencies, and/or contractors.

The scope of the audit will cover each of the sections of the SSMP. The SSMP Audit Checklist, based on the GWDR, will be used for the audit (included as Appendix 10-A).

The results of the audit will be included in an SSMP Audit Report. The SSMP Audit Report will focus on the effectiveness of the SSMP program, compliance with the GWDR, and identification of any deficiencies in the SSMP. The SSMP Audit Report will identify revisions that may be needed for a more effective program. Information collected as part of Section 9 of the SSMP – Monitoring, Measurement, and Program Modifications, will be used in preparing the audit. Tables and figures or charts will be used to summarize information about these indicators.

Appendix 10-A: SSMP Audit Checklist

	Element 1 – Goals	Yes	No
A	Are the goals stated in the SSMP still appropriate and accurate?		

	Element 2 – Organization	Yes	No
A	Is the Key Staff Contact Information current?		
B	Is the SSO responder telephone list current?		
C	Is SSO reporting and response "Chain of Communication" current?		
D	Are the position descriptions an accurate portrayal of staff responsibilities?		

	Element 3 – Legal Authority	Yes	No
Does the SSMP cite the Districts' legal authority to:			
A	Prevent illicit discharges?		
B	Require proper design and construction of sewers and connections?		
C	Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Districts?	NA	
D	Limit discharges of fats, oil, and grease?		
E	Enforce any violation of its sewer ordinances?		
F	Require the installation of grease removal equipment?		
G	Provide access for inspection of grease dischargers?		

	Element 4 – Operations and Maintenance	Yes	No
Collection System Maps			
A	Does the SSMP reference the current process and procedures for maintaining the Districts' sanitary sewer system maps?		
B	Are the Districts' sanitary sewer system maps complete, current, and sufficiently detailed?		
Resources and Budget			
C	Do the Districts and the County allocate sufficient funds for the effective operation, maintenance, and repair of their sanitary sewer systems and are the current budget structures documented in the SSMP?		
Prioritized Preventive Maintenance			
D	Does the SSMP describe current preventive maintenance activities and the system for prioritizing the cleaning of sewer lines?		
E	Are SCCSD's preventive maintenance activities sufficient and effective in minimizing SSOs and blockages?		
Scheduled Inspections and Condition Assessments			
F	Is there an ongoing condition assessment program sufficient to develop a capital improvement program addressing the proper management and protection of sanitary sewer system assets? Are the current components of this program documented in the SSMP?		
Contingency Equipment and Replacement Inventory			
G	Does the SSMP list the major equipment currently used in the operation and maintenance of the sanitary sewer systems and does it document the procedures for inventory management?		
H	Are contingency equipment and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?		
Training			
I	Is the training calendar current?		
J	Does the SSMP document current training expectations and programs?		

	Element 4 – Operations and Maintenance	Yes	No
Outreach to Plumbers and Building Contractors			
K	Does the SSMP document current outreach efforts to plumbers and building contractors?		

	Element 5 – Design and Performance Standards	Yes	No
A	Does the SSMP contain current design and construction standards for the installation of new sanitary sewer systems, pump stations, and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?		
B	Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines?		

	Element 6 – Overflow and Emergency Response Plan	Yes	No
A	Does the Overflow Emergency Response Plan establish procedures for the emergency response, notification, and reporting of SSOs?		
B	Are staff and contractor personnel appropriately trained on the procedures of the Overflow Emergency Response Plan?		
C	Is the Overflow Emergency Response Plan effective in handling SSOs in order to safeguard public health and the environment?		

	Element 7 – Fats, Oils, and Grease (FOG) Control Program	Yes	No
A	Does the Fats, Oils, and Grease (FOG) Control Program include efforts to educate the public on the proper handling and disposal of FOG?		
B	Does the FOG Control Program identify sections of the sanitary sewer system subject to FOG blockages, establish a cleaning schedule and address source control measures to minimize these blockages?		
C	Are requirements for grease removal devices, best environmental management practices (BEMP), record keeping, and reporting established in the FOG Control Program?		

	Element 7 – Fats, Oils, and Grease (FOG) Control Program	Yes	No
D	Do the Districts and the County have sufficient legal authority to implement and enforce the FOG Control Program?		
E	Is the current FOG Control Program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system?		

	Element 8 – System Evaluation and Capacity Assurance Plan	Yes	No
A	Does the hydraulic capacity evaluation identify deficiencies in the sanitary sewer systems, establish sufficient design criteria and recommend both short-term and long-term capacity enhancement and improvement projects?		
B	Does the capital improvement program (CIP) establish a schedule of completion dates for both short-term and long-term improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment?		

	Element 9 – Monitoring, Measurement, and Program Modifications	Yes	No
A	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?		
B	Are the Districts and the County able to sufficiently evaluate the effectiveness of SSMP elements based on relevant information?		

	Element 10 – SSMP Audits	Yes	No
A	Did the Districts and the County conduct SSMP audits and utilize the information from the audits to improve the performance of the SSMP?		

	Element 11 – Communication Program	Yes	No
A	Do the Districts and the County effectively communicate the performance of their sanitary sewer systems with the public?		

Section 11. Communication Program

11.1. Introduction

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

11.2. Requirements for the Communications Program

The requirements for the Communication Program section of the SSMP are:

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.

11.3. Communication during SSMP Development and Implementation

The County's Department of Public Works posted a notice on its website to inform interested members of the public it is developing an SSMP. The notice is:

> Santa Cruz County is developing and implementing a Sewer System Management Plan (SSMP) pursuant to State Water Resources Control Board Order 2006-003, Statewide General Discharge Requirements of Sanitary Sewer Systems. The goal of the SSMP is to minimize the frequency and severity of sanitary sewer overflows (SSOs). The SSMP will cover the management, planning, design, and operation and maintenance of the County's sanitary sewer systems. The development process began in January 2009 and it is expected to be complete by May 2011. The SSMP Development Plan and Schedule are available for review at 701 Ocean Street Room 410, Santa Cruz, CA 95060 during normal business hours. Interested parties can contact Rachel Lather at (831) 454-2637 or dpw139@co.santa-cruz.ca.us for additional information.

11.4. Communicating Sanitary Sewer System Performance

The Districts and the County report SSOs electronically to the California Integrated Water Quality System (CIWQS). The electronic SSO data, as well as information regarding regulatory actions, is available at: http://www.waterboards.ca.gov/ciwqs/publicreports.html. The County of Santa Cruz Department of Public Works placed a notice on its website that the sanitary sewer performance information is available at the CIWQS public access website.

The Districts and County will report their performance annually, using the parameters listed in Section 9 of the SSMP – Monitoring, Measurement, and Program Modification, at a regularly scheduled meeting of their District Boards. The annual report will cover a calendar year. The reports will be presented by March 31 of the following year.

11.5. Communication with Satellite Sanitary Sewer Systems

There are no satellite sanitary sewer systems.