SEWER SYSTEM MANAGEMENT PLAN (SSMP)

City of Banning
Public Works Department
176 East Lincoln Street
Banning, CA 92220

Adopted July 2009
Revisions:
5/2/2012
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E.0 EXECUTIVE SUMMARY

E.1 Introduction

The City of Banning (City) owns and operates a Water Reclamation Facility (WRF) at 2242 East Charles Street in Banning, California. The wastewater collection system to the Banning WRF includes 115 miles of gravity sewer mains, 5 miles of force mains, and 4 sewer lift stations.

On May 2, 2006, the California State Water Resources Control Board adopted Waste Discharge Order (WDR) No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (See Appendix A). This Order applies to all federal and state agencies, municipalities, counties, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California.

Ensuring proper funding, management, and operations of sanitary sewer systems is one means of achieving the state's goal of reducing SSOs. To accomplish this goal, the state is requiring that affected entities develop and implement system-specific Sewer System Management Plans (SSMPs). These plans will describe measures to provide effective management, operation, and maintenance of sanitary sewer systems. They will also detail spill response plans to establish standard procedures for proper and effective spill response and reporting.

The SSMP describes all planning, management and operational processes and procedures used that ensure effective management of the sewer collection system. This document contains existing planning documents (Sewer Master Plan); existing wastewater collection system operational and maintenance procedures; and new programs (i.e., Fats, Oils, and Grease (FOG) Control Program) and procedures necessary that all work toward the common goal of reducing the occurrence and impact of future Sanitary Sewer Overflows (SSOs).

SSOs are overflows from sanitary sewer systems of domestic, or other, wastewater, and often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease, and other pollutants. SSOs may pollute surface

water or groundwater, threaten public health, adversely affect aquatic life, and impair recreational waters. WDR 2006-0003-DWQ includes specific requirements related to each agencies responsibility for reducing the number of SSOs and thereby decreasing the risk to human health and the environment caused by such overflows.

WDR No. 2006-0003-DWQ requires all owners of sanitary sewer collection systems to submit a Notice of Intent (NOI) to apply for coverage under this new Order. The City filed for coverage the NOI dated July 27, 2006 (See Appendix B). The City received WDID No. 8SSO10636 from the State Water Resources Control Board, which tracks compliance with electronic SSO spill reporting; SSMP Progress; and Collection System Questionnaire and annual updates.

The SSO database is tracked using the California Integrated Water Quality System (CWIQS). One element of the Waste discharge Requirements (WDR) is the Sewer System Management Plan (SSMP). The SSMP provides methods for the City to identify, create, and incorporate a multitude of best management practices and procedures to maintain a well functioning collection system.

The twelve elements of the SSMP consist of existing plans, programs, standards, practices and procedures as well as new programs (e.g. Fats, Oils, and Grease (FOG) Control Program) that were required as conditions of the Statewide General WDR for Sanitary Sewer Systems. The legal authority for implementing the FOG Control Program is contained in the City's Wastewater Ordinance No. 1271 and Chapter 13.08 of the City's Municipal Code. All elements of the SSMP considered the following objectives during development:

1. Improved Customer Service
2. Improved Water Quality and Environmental Protection
3. Long Term Wastewater Collection and Treatment Service
4. Long Term Infrastructure Investment
5. Long Term Financial Stability
6. Workforce Planning and Development

E.2 Elements of the SSMP

The SSMP has twelve elements that must be completed and approved by deadlines listed in Order No. 2006-0003. The mandatory elements of the SSMP are:

1. Goals
2. Organization
3. Legal Authority

4. Operations and Maintenance Programs
5. Design and Performance Standards
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 Program Audits
11. Communication Program
12. SSMP Completion and Certification

E.3 Regulatory Deadlines

The Statewide General WDR contains the following schedule of milestone deadlines:

Task	WDR No. 2006-0003-DWQ Section	Deadline Date
Development Plan/Schedule Goals/Organizational Structure	D 13 (i) and (ii)	November 2, 2007
Overflow Emergency Response Program	D 13 (vi)	May 2, 2009
Legal Authority	D 13 (iii)	May 2, 2009
Operations & Maintenance Program	D 13 (iv)	May 2, 2009
Grease Control Program	D 13 (vii)	May 2, 2009
Design & Performance	D 13 (v)	August 1, 2009
System Evaluation & Capacity Assurance Plan	D 13 (viii)	August 1, 2009
Final SSMP	D 13 (all)	August 1, 2009

E.4 Definitions, Acronyms, and Abbreviations

Best Management Practices (BMP): Refers to the procedures employed in commercial kitchens to minimize the quantity of grease discharged to the sanitary sewer system. Examples include, but are not limited to, scraping food scraps into a garbage can and dry wiping dishes and utensils prior to washing.

California Integrated Water Quality System (CIWQS): The State Water Resources Control Board's online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system. The electronic reporting requirement became effective on January 2, 2008 in Region 8.

Capital Improvement Plan (CIP): Refers to the document that identifies future capital improvements to the City's sanitary sewer system.

Category 1 SS0: An SSO resulting in a discharge of 1,000 gallons or more; or that results in a discharge to a drainage channel and/or surface water; or to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.

Category 2 SSO: All other discharges of sewage resulting from a failure in the sanitary sewer system.

City: Means the City of Banning.

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

County Health: Means the Riverside County Department of Health Services.

Environmental Compliance Section: Refers to the City of Banning's Pretreatment Program Services.

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.

Food Service Establishment (FSE): Refers to commercial or industrial facilities where food is handled, prepared, or served and where food-processing wastewater is discharge to the sanitary sewer system.

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.

Geographical Information System (GIS): Refers to the City's system that is used to capture, store, analyze, and manage geospatial data associated with the City's sanitary sewer system assets.

Global Positioning System (GPS): Refers to a handheld unit or computer program that is capable of producing longitude and latitude coordinates necessary to document the location of sanitary sewer overflows.

Private Lateral Sewage Discharges: Sewage discharges caused by blockages or other problems within a privately owned lateral

Sanitary Sewer Overflow (SSO): A sanitary sewer overflow (SSO) is any overflow, spill, release, discharge or diversion of wastewater from a sanitary sewer system. SSOs include:

- Overflows or releases of wastewater that reach waters of the United States;
- Overflows or releases of wastewater that do not reach waters of the United States; and
- Wastewater backups into buildings and on private property that are caused by blockages or flow conditions in a sanitary sewer, other than a building lateral. Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned is a SSO when sewage is discharged off a private property into streets, storm drains, or waters of the State.

Sanitary Sewer System: Any system of pipes, pump stations, sewer lines, etc., used to collect and convey sewage to a treatment plant. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, highlights, etc.) are considered part of the sanitary sewer system, and discharges of sewage to these facilities are not sanitary sewer overflows.

Sewage: Shall mean any liquid waste and water borne solid waste resulting from residential, commercial, industrial, or institutional activities or uses.

Surface Waters: All waters of the United States as defined in 40 CFR 122.2 such as navigable waters, rivers, streams, lakes, natural ponds, wetlands, etc. SSOs to storm drains tributary to surface waters shall be reported as discharges to surface waters.

Abbreviations/Acronyms

AB	Assembly Bill
BAT	Best Available Technology
CFR	Code of Federal Regulations
BMP	Best Management Practices
CAP	Capacity Assurance Plan
CIP	Capital Improvement Program
CM	Corrective Maintenance
CMMS	Computerized Maintenance Management System
CMOM	Capacity, Management, Operations and Maintenance
CWEA	California Water Environment Association
EDU	Equivalent Dwelling Unit
ERP	Enforcement Response Plan
FOG	Fats, Oils, Grease
FSE	Food Service Establishment
GWDR	General Waste Discharge Requirements
GIS	Geographical Information System
I/I	Inflow/Infiltration
MRP	Monitoring and Reporting Program
NPDES	National Pollution Discharge Elimination System
OERP	Overflow Emergency Response Plan
O&M	Operation and Maintenance
PM	Preventive Maintenance
PVC	Polyvinyl Chloride
RWQCB	Regional Water Quality Control Board
SWRCB	State of California Water Resources Control Board
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflows
WDR	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant

1. PURPOSE & GOALS

The City's Purpose and Goals address mandatory SSMP provisions outlined in Section D, 13 (i) Goals of SWRCB Order No. 2006-0003 (Order).

The City's mission is to provide water supply, wastewater disposal, and water resource management to the public in a safe, reliable, financially responsible, and environmentally sensitive manner. As such, the City is committed to the goal of developing an SSMP to properly manage, operate, and maintain all aspects of its sanitary sewer system to help reduce and prevent SSOs, as well as mitigate the impacts of any SSOs that may occur.

1.1 Purpose

The Order is consistent with State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California) in that the Order imposes conditions to prevent impacts to water quality. Further, it protects against the degradation of water quality that will unreasonably affect beneficial uses of water and result in a water quality less than prescribed in State Water Board or Regional Water Board plans and policies.

The purpose of the SSMP is to protect water quality, eliminate or substantially reduce preventable SSOs, and to protect public health and the environment. The SSMP provides a consolidated document that contains adequate policies, procedures, guidelines, planning documents, programs, and communication requirements that ensure the City properly funds, manages, operates and maintains, all parts of the sewage collection system owned and/or operated by the City. The City will employ adequately trained staff and contractors that posses the necessary knowledge, skills, and abilities to carry out the provisions of this document.

This SSMP includes City policies, procedures and information about the City's collection system.

The SSMP provides information to City personnel necessary for identifying and correcting deficiencies in the wastewater collection system. The main areas of program implementation are sewer line cleaning and video inspection, sanitary sewer overflow (SSO) response and mitigation, agency notification, fats, oils, and grease (FOG) control program to reduce or eliminate the discharge of FOG to the sewer, capital projects to replace and/or repair and expand the sewer collection system, employee training, and public awareness campaigns.

1.2 Goals

The general goals of the SSMP are:

- To effectively manage, operate, maintain, and improve the City's wastewater collection system;
- To provide adequate capacity to convey peak flows;
- To provide notifications and reports to all required regulatory agencies in a timely manner;
- To minimize the frequencies of preventable SSOs throughout the City's collection system;
- To effectively mitigate the effects of any SSO that may occur; and
- To provide public education to increase awareness of FOG issues and how they can impact the collection system.

Measurement of the above listed general goals is described in Section 9.1 – Performance Measures for specific goals that have been established for the various program elements of the SSMP.

2. ORGANIZATION

This section describes and identifies the City's SSMP organization and responsible or authorized representatives as required in Section J of SWRCB Order No. 2006-0003. It identifies the administrative, operations and maintenance positions responsible for implementing specific measures in the SSMP with descriptions, responsibilities of personnel, and authority for each position. The Organization element includes a chain of communication for reporting SSOs and line of authority with contact information.

2.1 Contact Information

Organization's Name: City of Banning

Address: 176 East Lincoln Street
Banning, CA 92220

2.2 SSMP Team

The following Table lists key personnel and contact information:

Positions	Office Phone No.	Cellular Phone No.
City Manager	(951) 922-3105	
Public Utilities Director	(951) 922-3266	(951) 232-7288
Contracts & Purchasing	(951) 922-3109	
Asst. Public Utilities Director		
Senior Engineer	(951) 922-3283	(951) 662-7690
Water/Wastewater Superintendent	(951) 849-3273	(951) 232-9236
FOG Control Program	(951) 849-3273	(951) 232-9236
Collection System Supervisor	(951) 849-3273	(951) 392-7177
Collection System Crew	(951) 922-3330	
Construction Inspector	(951) 922-3142	(951) 232-4017
Legal Counsel	(949) 223-1170 Ext. 5409	

Table 2-1 Key Personnel & Contact Information

2.3 SSMP Organizational Chart

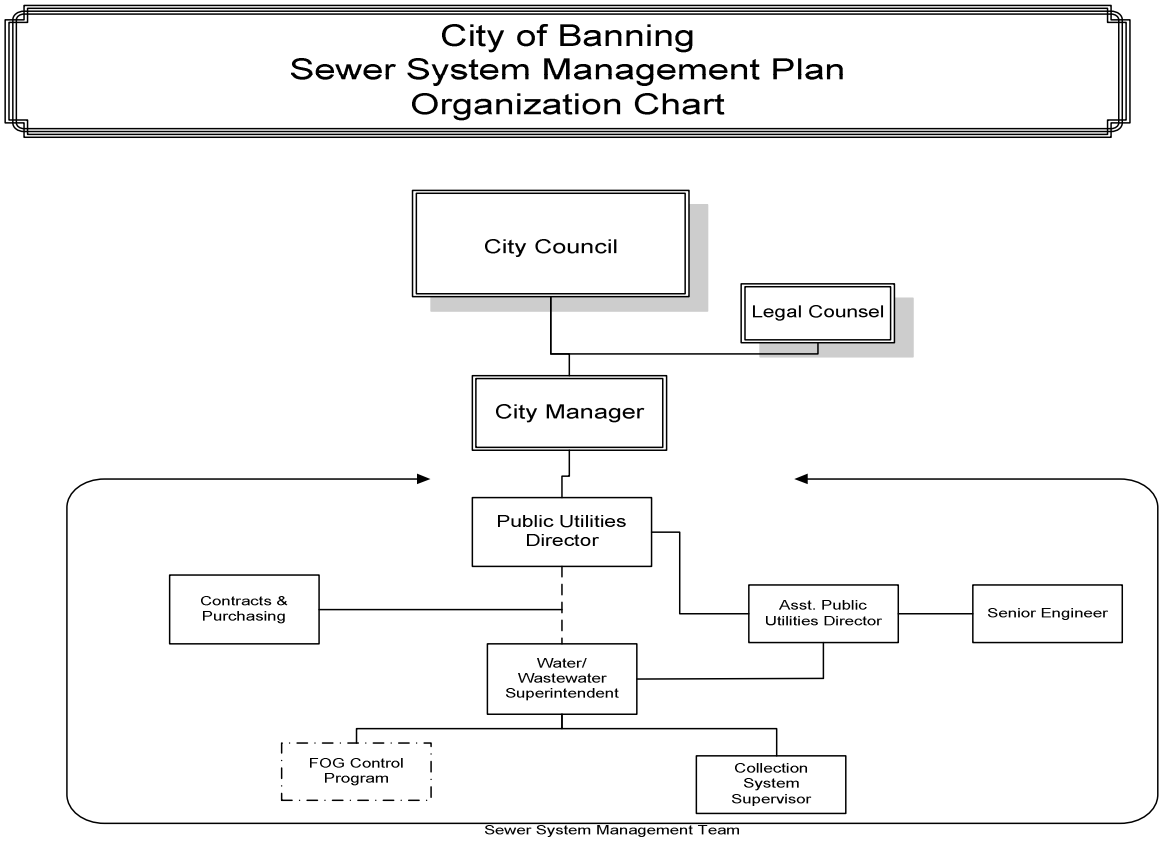

Figure 2-1Organization Chart

2.4 SSMP Regulatory Deadlines

Task	WDR No. 2006-0003-DWQ Section	Completion Deadline
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Table 2-2 Regulatory Deadlines

2.5 Roles and Responsibilities

City Council - Policy makers; approves city budget allocations; and SSMP and legal authority approval.

City Manager – Recommends policy, plans organizes, and directs the activities of all City Departments including the Public Works Department. Reviews budgets and recommends financing related to wastewater system infrastructure. Reports and advises the City Council regarding financial impacts of city and regulatory programs on the citizens and businesses within the City.

Legal Counsel – Reviews and recommends appropriate legal authority language needed for Ordinances, Municipal Codes, and advises the City on a wide range of legal issues pertaining to City management.

Public Works Director - Under general policy direction, plans, organizes, directs and implements the City's Public Works Department activities and operations. Prepares wastewater collection system planning documents, manages capital improvement delivery system, documents new and rehabilitated assets and assists in coordinating the development and implementation of SSMP.

Asst. Public Works Director - Under general policy direction, plans organizes, directs and implements comprehensive strategies and programs for the operation of a large potable water distribution and wastewater collection and treatment system. The Asst. Public Utilities director also assists in coordinating the development and implementation of SSMP.

Senior Engineer – Provides engineering expertise to the review of projects; conformance with standards; develops and approves new standards; and ensures wastewater system integrity is maintained in a manner that provides a reliable infrastructure for the transportation, treatment, and disposal or re-use of wastewater.

Water & Wastewater Superintendent – Under the general direction of the Public Works Director plans, organizes, and supervises the operations and maintenance for the City's Water & Wastewater Division. The Water and Wastewater Superintendent develops procedures and plans (including the SSMP) to ensure safe, effective, and compliant operational programs.

Wastewater Collection System Supervisor - Assists in coordinating the development and implementation of the City's SSMP. Manages field operations and maintenance activities, provides relevant information to agency management, prepares and implements contingency plans, leads emergency response, investigates and reports SSOs and trains field crews. Supervises the operation, maintenance, and cleaning of lift stations domestic sewer systems and contract wastewater systems.

Collection System Crew - Performs a wide variety of preventive maintenance activities, mobilizes and responds to notification of stoppages and SSOs (mobilize sewer cleaning equipment, by-pass pumping equipment, and portable generators). Assists with sewer line cleaning, inspects, repairs sewer lift stations and performs required maintenance.

Construction Inspector - Ensures that new and rehabilitated assets meet City standards, works with field crews to handle emergencies when contractors are involved, and provides verbal reports to Senior Engineer.

FOG Control Program Services – Manages and assists in administering the approved Pretreatment Program. Assist the City in complying with Federal, State and local environmental laws and regulations. Develop FOG Control Program and conduct inspections, provide educational material, and recommend non-compliance remedies for businesses not conforming to Ordinances or the City's Municipal Code. .

2.6 Communications

The reporting of SSOs is detailed in Section 6 - Overflow Emergency Response Plan. A copy of the SSO response is maintained by the City's Wastewater Department located at 176 East Lincoln Street. The following items are included in the document:

- List of regulators, individuals, agencies, and public stakeholders to be notified if there is a potential exposure to SSO pollutants;
- Name, title, phone, and location of the person reporting SSO's to the OES, OCHCA, and RWQCB;
- List of records maintained in support of SSO reporting;
- Policies and procedures that identify roles and responsibilities, documentation requirements, and the process for collecting and retaining SSO records;
- Procedure for immediate notification of SSO's to the RWQCB;
- Procedure for reporting overflows to storm drains and tributaries to Waters of the United States;
- Procedures for reporting overflows of 1,000 gallons or greater to the OES;
- Procedures for submitting electronic SSO reports;
- Procedures, roles, and responsibilities for personnel responsible for completing the SSO report forms and forwarding them to the RWQCB;
- Procedure, roles, and responsibilities for developing and submitting monthly reports; and
- Procedures for submitting no-spill certification reports.

2.7 Sanitary Sewer Overflow (SSO) Reporting

Specific SSO response procedures are covered in Section 6 of this document – Overflow Emergency Response Program. The chain of communication for reporting SSOs is as follows:

Staff	Responsibility
First Responder	• Provide initial evaluation of spill severity and classify accordingly. • Call emergency services, as required • Notify Spill Response Supervisor • Stop spill and secure area as instructed by Spill Response Supervisor
Spill Response Supervisor (Collection System Supervisor)	• Direct First Responder in initial actions to control spill and prevent public exposures to spill • Evaluate spill and determine actions to control and cleanup • Notify Operations Superintendent • Mobilize City personnel/equipment to respond to spill • Contact and direct outside services, as required, to respond to spill • Complete Reportable Incident Notification Log and provide agency notifications as required to: • CA Office of Emergency Services • RWQCB • Riverside County Department of Environmental Health • SWRCB
Water & Wastewater Superintendent	• Authorize City resources to respond to spill • Communicate with General Manager, Public Information Officer, and Chief Financial Officer as required
Pretreatment Services	• Determine required sampling for spill

Table 2-3 Chain of Communication

The individual with primary responsibility for ensuring adequate response to SSOs during normal business hours is the Wastewater Operations Manager. On weekends and after hours the primary responsibility for response to SSOs is assigned to call personnel.

3. LEGAL AUTHORITY

This Section describes how the City's legal authority addresses those mandatory SSMP provisions outlined in Section D, 13 (iii) Legal Authority of SWRCB Order no. 2006-0003.

The City has sufficient legal authority contained in several documents and codes that enable designated personnel to protect the collection system against harmful wastewater discharges or activities, storm water infiltration and inflows (I/I). City adopted standards, policies are used to ensure sewers, sewer appurtenances, and lateral connections are properly designed and constructed. The following is a discussion of those documents.

- Illicit discharges are prohibited from entering into the City's sewer system by Ordinance No. 1271 and Municipal Code Section 13.20.050 Prohibited discharges. This section has prohibitions against the discharge of any material or waste that could harm the collection system, wastewater treatment plant or jeopardize the safety of the City's collection system personnel.
- Sewers and sewer connections are required to meet the criteria contained in the *Greenbook: Standard Specifications for Construction* & Standard Drawings for Water & Sewer Facilities, and the latest City approved edition of the Uniform Plumbing Code.
- The City has sewer easements in place to ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City. The City has a variety of methods for obtaining easements to construct and maintain sewer lines through private property:

  1. Acquisition of the easement through voluntary purchase from the owner

  2. Acquisition through condemnation for a sewer line easement.

  3. As a condition of development, the property owner is requested to dedicate or grant an easement to the City for sewer line installation.

These easements permit the City to conduct periodic and scheduled sewer line cleaning to prevent SSO's.

If the City is unable to obtain an easement, or is otherwise prevented from entering onto private property to maintain its sewer line through the easement, and a problem arises with the sewer line, the City, by contacting Riverside County Dept. of Health could request that the house to be vacated because the lack of sewer services renders it uninhabitable.

- The City's Municipal Code Title 13 has several sections that prohibit or limit the discharge of fats, oils, greases and other debris that may cause blockages. These sections are:

  1. 13.20.050 (D)
  2. 13.20.050 (H)
  3. 13.20.060 (A)(1)

- The City has the authority to restrict or prohibit the discharge of storm water into the collection system. This authority is granted through Ordinances No. 1206 and 1271 Specific Discharge Prohibitions.

- The City's Pretreatment Services is authorized to enforce Ordinances No. 1260 and 1271 and seek penalties and remediation actions against user found in violation and any permits or control documents issued pursuant to either Ordinance. The City is preparing a consolidated Ordinance that incorporates provisions from both existing Ordinances in addition to new Pretreatment Program "streamlining" program changes adopted by the US EPA.

City Ordinance No. 1206, Section 31A-25 states that the City may adopt procedures and rules for determining the appropriate enforcement actions related to non-compliance with City wastewater discharge requirements. When the City applies for an approved Pretreatment Program with the State of California Regional Water Quality Control Board, part of the submittal package is an Enforcement Response Plan (ERP) that will describe the procedures and rules for implementing a progressive enforcement response for violations of the wastewater rules and regulations. A Pretreatment Program approval package is being prepared for the City at this time. The Pretreatment Program approval package has been drafted and should be submitted to the Regional Water Quality Control Board - Colorado River Basin Section around September 2009.

3.1 Compliance Documents

The legal authority for enacting the SSMP programs and policies are included in the following documents:

- Sewer Use Ordinances No. 1206 and 1271

- Fats Oils and Grease (FOG) Control Program

4. OPERATIONS AND MAINTENANCE PROGRAM

The City's Operating and Maintenance Program addresses those mandatory SSMP provisions outlined in Section D, 13 (iv) Operation and Maintenance Program of SWRCB Order No. 2006-0003. This Section describes the City's measures and activities regarding operations and maintenance, management of engineering data, capacity assurance, training programs, and communication programs.

4.1 Treatment Facility

The City owns and operates one wastewater treatment plant (hereinafter referred to as a Publicly Owned Treatment Works (POTW), with the following specifications:

A. Facility Design capacity = 3.6 MGD
B. Average Daily Flow = 2.4 MGD
C. Average Dry Weather Flow = 2.3 MGD

4.2 Collection System Overview

There are approximately 2,000 manholes and no air vacuum relief valves. There are no combined storm/sanitary sewers within the City's jurisdiction. While there are some areas in the collection system that lay beneath private property the City requires easements, right of ways, and complete access to all new connections. In the areas that are currently difficult to access, arrangements are made for inspection and line cleaning on an as need basis.

Table 1 Conveyance and Pumping

	Gravity Sewers	Force Mains	Pump Stations
Length/Quantity			
0-25 years old, %	75%	80%	89%
26-50 years old, %	25%	20%	11%
51-75 years old, %	-	-	-
> 76 years old, %	-	-	-

Table 2 Service Area Characteristics

Characteristic	Quantity
Service Area	23 square miles
Population	30,325
Annual Average Precipitation	19.30 inches
Residential Sewer Connections	10,422
Commercial/Industrial Sewer Connections	591

Table 3 Pipe Diameters

Pipe Diameter (in)	Gravity Mains (mi)	Force Mains (mi)	Total Mains (mi)
4	0.1	1.0	1.1
6	6.4	0.4	6.8
8	85.0	0.0	85.0
10	1.0	0.2	1.2
12	8.6	0.0	8.6
15	8.6	0.0	8.6
18	1.2	0.0	1.2
21	3.3	0.0	3.3
24	0.1	0.0	0.1
30	0.4	0.0	0.4
Totals:	**114.6**	**1.6**	**116.2**

4.3 Collection System Maps

System mapping is a means to provide access to sewer plans, drawings, and electronic records. Section 6.16 includes detailed information on the types and available of all sewer collection system maps. Hard copies of the collection system maps are located in the office and in each sewer utility vehicle. The electronic version of the sewer atlas is available on employee desktop computers using Geoviewer.

All manholes have a unique identifying number and the sewer lines between manholes are identified by pipe size and material, length between manholes and upper and lower elevations.

4.4 Sewer Cleaning

The current goal is to have the City's entire sewer collection system cleaned every year. Progress with this goal is tracked by updating an Excel

Spreadsheet. Data is input for various parameters including: location of sewer cleaning; notes regarding any problems; total sewer line cleaned (in feet); CCTV footages, etc.

The Wastewater Department also tracks the following Collection System maintenance areas:

A. Routine cleaning
B. Preventative cleaning and maintenance
C. Repairs
D. High frequency cleaning and maintenance
E. Roach control
F. CCTV (Routine and new lines for acceptance)

A Work order system is used to track time spent cleaning the City sewer system. The scheduled cleaning is based upon the date last cleaned. The goal is to have the entire sewer system cleaned every 12 months so the last cleaned date is typically 12 months prior to the current date. The last cleaned date could also change depending upon need based cleaning, e.g. to remove a blockage. At the beginning of each week, the collection crew is informed what lines require servicing in that week. When a section of the sewer is cleaned, the collection crew completes a cleaning record of that section of sewer including:

- Date and time of the cleaning
- Method of cleaning
- Identity of the cleaning personnel
- Cause of any stoppages
- Location of stoppage or routine cleaning activity
- Any further actions that are necessary or taken

When the job is completed, the collection crew writes their findings on the work order and all the completed work orders are returned at the end of the day with the statistics for the day. (e.g., sewer line footage cleaned; CCTV footage; etc.) The information contained in the work orders are entered into the sewer maintenance log. Trends can be identified for a wide variety of sewer problems, e.g. roots, grease accumulations, hydraulic restrictions and surcharge conditions. The information from the work orders also determines if an area is in need of high frequency cleaning due to periodic obstructions, e.g. roots, grease.

One of the primary goals of the SSMP is to reduce the number of sanitary sewer overflows (SSOs). The Water & Wastewater department has several activities and programs that contribute to the reduction of SSOs:

- A sewer inspection program has been developed that will document chronic sewer problems and makes recommendations for increased cleaning frequencies for problematic areas. Additionally, the source(s) of the chronic sewer problem(s) will also be determined and addressed. These problematic sites are added to the high frequency cleaning list until effective mitigation of the problem is accomplished.

- The City has a Fats, Oil, and Grease (FOG) program to prevent excessive accumulations of FOG that can lead to SSO's. On-site interceptor inspections, education regarding best management practices, and the Collection System's CCTV program, which is used to document and prioritize FOG Control Program efforts before actual SSOs occur.

- SSO's are plotted based upon geographical location noted by address, if possible. The sewer line affected is provided and the cause of the blockage is provided.

4.5 Manhole Inspection and Assessment

The City's Wastewater Department and contractors also inspect manholes as part of the cleaning activities. If deficiencies are found, then a work order is created to correct the problem. There is no set goal for the inspection of manholes and there is no grouting program. When the manholes and the sewer lines are inspected the following observations are recorded:

- Conditions of the manhole frame and cover
- Evidence of surcharge
- Offsets or misalignments
- Details of the primary cause of cracks or breaks in the manhole or pipe, including blockages
- Presence of corrosion (only if extreme)
- If repairs are necessary
- Manhole identifying number and location
- Wastewater flow only if surcharged or backed up
- Presence of infiltration, location, and estimated quantity
- Accumulations of grease, debris, or grit

4.6 Sewer Lift Stations

The City has four (4) sewer lift stations. All lift stations have permanent back-up generators. The only restriction is air quality permit related (run-times) and the City would run the generator as long as needed and apply for an emergency variance. In all instances if power is lost and if the station(s) cannot pump the wastewater, then several vacuum truck companies are

called to pump the station(s) wet well until the station can become operational.

At all stations the pumps are staggered between lead and lag positions. The height of the wet well engages pump operations to either cycle on (at high levels) or cycle off (at low levels). All but one of the pump stations has a minimum of two pump motors. Pumps are rotated in the lead/lag positions to ensure operation integrity. Should the second pump be required for operation, the station electronically will engage the second pump.

4.7 Sewer Line Video Inspection (CCTV)

The City's closed circuit television (CCTV) inspection crew and contractor perform video inspections of City sewer lines. The City crews are trained in the use of the equipment. The video inspections address the following:

- Pipe size, type, length, and joint spacing
- Distances are recorded
- Structural deficiencies
- Corrosion
- Inflow/Infiltration
- Illegal connections
- Results of the video inspection
- CCTV operator name
- Cleanliness of the line
- Location and identification of the line and manholes being examined

Once the CCTV examination is completed, the sewer line rated based upon the defects discovered during the video examination. The City recognizes that the CCTV program is vital in the effective management and maintenance of the sewer collection system.

4.8 Customer Service Requests

As part of the customer service program, the Wastewater department personnel accept service requests from City customers. These service requests describe sewer problems the customer is having or has observed. Problems related to the homeowner's private lateral, foul odors, or other private property problems with a sewer line are reviewed to determine the responsible party (i.e., Property owner or City) When a service request call is received, a service request form is generated and distributed. This form includes the following information:

- City personnel who received the complaint or request
- Nature of the complaint or request
- To whom the follow-up action was assigned

- Date of the complaint or request
- Date the complaint or request was resolved
- Name, address, and telephone number of the complainant or requestor
- Location of the complaint or request
- Date the follow-up action was assigned
- Cause of the problem
- Investigation findings
- Corrective actions taken

In most all cases, the outdoor exposed impervious surface areas that were contaminated with sewage are contained and washed down and the wastewater is removed by a combination truck. The Water & Wastewater department personnel respond as soon as the call is received during working hours and after hours, the standby crew is in route to the incident within sixty minutes of notification. The goal for resolution of each service request is to have all matters related to the service request concluded by the day's end.

4.9 Training

The City uses the California Water Resources Control Board mandatory certification program for wastewater operators. The City requires the possession of a voluntary certification obtained from the California Water Environment Association (CWEA) for many positions in the Water & Wastewater department. These certifications are for entry level to management. The certification is available in a variety of disciplines, in addition to wastewater.

All employees in the Wastewater department are evaluated annually for performance. On-the-job-training is critical for many specific activities of some positions in the Water & Wastewater department. Specifically, the collection system personnel receive on-the-job-training for the use of various kinds of sewer cleaning equipment and devices. Demonstrations, drills, and periodic testing are used to evaluate the skill sets of the employees.

4.10 Equipment and Replacement Parts

The Wastewater department collection has two vehicles for the care and maintenance of the sewer system. Two high-pressure hydro trucks have sewer line cleaning capabilities.

The Water & Wastewater department maintains some of the expendable parts for the combination trucks. These parts include nozzles, and root cutters. Some light preventive maintenance is performed by City staff.

5. DESIGN AND PERFORMANCE PROVISIONS

Design and performance provisions address mandatory SSMP provisions outlined in Section D, 13 (v) Design and Performance Provisions of SWRCB Order No 2006-0003. This section references the design and construction standards & specifications that the City uses for new sewer systems, pump stations, and other appurtenances, and for the rehabilitation and repair of existing sewer systems. Also included are the procedures and standards for the inspection and testing of these facilities.

The Public Works Director works closely with the City's Engineering Department in coordinating capital sewer projects that include the repair, replacement and installation of new sewer line(s) and sewage lift stations.

5.1 Design Criteria and Standard Construction Design

The City uses two primary resources to design and review sewer construction drawings. These are:

A. Standard Drawings for sewer line construction (Appendix D)

B. Greenbook Standard Specifications for Public Works Construction, latest edition.

5.2 Sewer Construction Design Review

The City's Standard Drawings and the Greenbook are used to review sewer construction blueprints.

5.3 Water & Wastewater Staff Involvement in Sewer Construction Design Review

Staff in the City's Water & Wastewater Department is involved in the design review process by reviewing new and tenant improvement projects and by providing historical and current use information for the Public Works Director. This information is valuable in the design of sewer lines and appurtenances to ensure that the project will meet expectations.

5.4 Testing and Inspection Procedures

The City uses the Greenbook, Section 306, UNDERGROUND CONDUIT CONSTRUCTION, to obtain procedures for inspecting and testing new and rehabilitated sewer projects, both during and after construction. The methods used are video inspection with inclinometer, air test, and water tightness.

5.5 City Inspection Personnel

The City inspects all construction job sites during and after the construction is complete. These inspectors ensure that the projects are built according to approved plan specifications.

5.6 Inflow and Infiltration Manhole Testing

The new manholes that are installed are visually tested to determine if there are any conditions of inflow or infiltration. This activity is particularly important in areas with traditionally shallow groundwater tables and if groundwater is detected in the construction trenches during the project life.

5.7 Closed Circuit Television (CCTV) Inspection

The video inspection and inclinometer testing are conducted on an as-needed basis to determine if sewer systems were built according to design and that all construction debris has been removed from the sewer line(s).

5.8 Private Sewer Service Lateral Design and Inspection

The City uses the Greenbook, Standard drawings, and the Uniform Plumbing Code to detail the specifications and construction for private sewer lateral design and construction. The plans are reviewed by the Engineering Division and Wastewater Operations. The City also distributes a Sewer Lateral Maintenance Policy to all property owners, which provides information related to private lateral responsibilities and contact information for reporting stoppages. A copy of the Policy is included in Appendix E. The owner is responsible for the sewer lateral from the point of origin on their property to the connection point to the City's sewer line, including all sections of sewer lateral line that may be under City sidewalks, curbs, streets, or alleyways.

5.9 Standardizations of Equipment and Sewer System Components

The City strives to standardize the equipment used in the sewer systems and the component parts to the sewer system. The criteria used for this standardization comes from the City's Standard Drawings (See Appendix D). Standardization of the equipment and components serves to improve the operations, repair, and maintenance of the sewer system by eliminating dissimilar sewer system components and materials.

6. OVERFLOW EMERGENCY RESPONSE PLAN

The City's Collection System Division has an SSO Procedures document that provides specific instructions for responding to SSO's. The City's Overflow Emergency Response Plan provides specific instructions for responding to Sanitary Sewer Overflows (SSOs). The SSOs are classified in accordance with SWRCB Order No. 2006-0003. The categories of spills, the response and reporting requirements are detailed in the remainder of this section.

SSO's can be either: Category 1 - Greater than 1,000 gallons or that results in a discharge to a drainage channel and/or surface water; or to a storm drainpipe that was not fully captured and returned to the sanitary sewer system; Category 2 - Less than 1,000 gallons; or private sewer systems and laterals.

Possible SSOs occur in one of three areas of the collection/treatment system as follows:

1. Collection System;
2. Lift Station; or
3. Treatment Plant

The response procedures for SSOs are determined by the classification and location of the SSO. While the objectives of the response remain the same, the coordination and personnel chain of communication is slightly different.

For spills on City property (i.e., at the Wastewater Reclamation Facility) on-site personnel report the spill to the Wastewater Reclamation Manager who makes operational decisions regarding the containment, recovery, and clean-up. All documentation and reporting of the spill (SSO Report Form) is performed by the Wastewater Operation Manager or their designee.

For spills in the public area (lift station or collection system), notifications are made to appropriate response personnel. Upon arrival at the site, said personnel collection essential information regarding SSO location, potential cause(s), initial estimates of volume, containment requirements, etc. Additional staff and equipment are dispatched based upon determinations made during the initial site evaluation.

Every effort will be made to ensure that all reported SSOs are responded to within the first hour of notification of the SSO.

6.1 Purpose

The primary purpose of the Sanitary Sewer Overflow (SSO) Plan is to provide written guidelines that improve response time, provide clear guidance regarding containment, clean-up and reporting, and minimize the overall risks associated with SSOs.

6.2 Goals and Objectives

The City recognizes its responsibility in protecting the public health and the environment. The goals of the SSO Plan underscore that responsibility. The goals of the SSO Response Plan are to:

- Ensure all reported SSOs are responded to immediately;
- Identify and allocate adequate resources needed in the response;
- Provide timely and adequate training, equipment and qualified staff to ensure effective response; and
- Ensure all SSOs are accurately reported and any SSO trends are identified and used to provide opportunities for continuous improvement.

The objectives of the SSO Plan are to:

- Reduce the occurrence and the magnitude of SSOs;
- Protect the collection system, wastewater treatment facilities, and all appurtenances;
- Protect public and private property;
- Protect water quality; and
- Protect Public Health, Safety, environment and property from SSOs.
- Prevent the discharge of sewage into surface waters.
- Contain the sewage discharged to the maximum extent possible.
- Establish perimeters and control zones to control public access to SSO area.
- Prompt notification of spill information and potential impacts.

6.3 Initial SSO Response Procedures

This section presents a strategy to mobilize labor, materials, tools and equipment to correct or repair any condition, which may cause or contribute to a SSO.

6.3.1 Staff Instructions

When a call of a possible SSO is received, all relevant information (e.g., time and date call was received, specific location, description of problem, time possible SSO occurred, caller's name and telephone number, any other observations made by the caller, etc.) is collected by the City. This information is relayed to the appropriate staff member(s), who is (are) dispatched to the location to confirm and conduct an initial assessment of the problem. Staff notifications are made by telephone or mobile radio. City staff dispatched to the site of a SSO proceeds immediately. The SSO will be contained to the greatest extent possible utilizing available equipment and resources. The Water & Wastewater Superintendent or their designee will receive information from the responding staff and decide if additional crews, materials, equipment and supplies are need.

The primary responsibilities of each employee in the spill response team are summarized in the following table. Additional details of the responsibilities are covered in the sections that follow.

SANITARY SEWER OVERFLOW RESPONSE TEAM		
	Responsibilities	Contact Information
First Responder	• Provide initial evaluation of spill severity • Call emergency services, as required • Notify Spill Response Supervisor • Stop spill and secure area as instructed by Spill Response Supervisor	Police Department (951) 922-3170
Spill Response Supervisor	• Direct First Responder in initial actions to control spill and prevent public exposures to spill • Evaluate spill and determine actions to control and cleanup • Notify Water & Wastewater Superintendent • Mobilize personnel/equipment to respond to spill • Contact and direct outside services, as required, to respond to spill • Complete Sanitary Sewer Overflow Report (field form) and initiate agency notifications	Collection System Supervisor (951) 922-4801 or Cell (951) 392-7177
Water & Wastewater Superintendent	• Authorize City resources to respond to spill • Communicate with Director of Water & Wastewater, and Regulatory Agencies.	(951) 849-3273 or Cell (951) 232-9236
Public Works Director	• Authorize City or contractors to respond to the spill • Communicate with City Manager, Regulatory Agencies, and public information officer	(951) 922-3134 Cell (951) 232-7288
Industrial Pretreatment	• Determine required sampling for spill and initiate investigation, as indicated, regarding potential sources of the cause of the SSO.	(951) 849-3273 or Cell (951) 232-9236

Table 6-1 Spills Response Duties & Contacts

6.3.2 First Responder Duties and Responsibilities

The first City Employee who arrives at the site of a SSO has the primary responsibility of taking immediate actions to protect the health and safety of the public. Secondly, the first responder must ensure that proper notifications are made to the Wastewater Department to initiate a timely and effective response needed to minimize the risks associated with the SSO.

If the first responder determines the SSO is not the responsibility of the City (e.g., private lateral spill) but an imminent danger exists to public health, property, or to the public waterways of the United States, then prudent emergency actions are warranted until the responsible party provides action to mitigate the SSO. Upon arrival at a SSO, the first responder will:

- Determine the cause of the SSO, e.g. sewer line blockage, pipeline break, pump station mechanical or electrical failure;
- Identify and request, if necessary, additional personnel, materials and equipment to minimize the impact of the SSO;
- Control public access to spill area; and
- If possible, take immediate steps to stop the overflow.

6.3.3 SSO Response Supervisor

The Spill Response Field Supervisor assumes primary management and coordination of all emergency activities and communicates with the Wastewater Reclamation Manager or Director. The supervisor will be responsible for the official spill volume estimate; coordinating spill control and cleanup efforts; and notifying the proper state, county and local regulatory agencies. The Spill Response Field Supervisor, or a designated City alternate, will fill out the Sanitary Sewer Overflow Report (See Figure 6-1).

6.3.4 Water & Wastewater Superintendent

The Water & Wastewater Superintendent authorizes the expenditure of emergency response resources and communicates with the City's Public Utilities Director. Additional outside resources, if needed, are contacted to assist with the SSO response. Contact information for the additional outside resources can be found in Section 6.4.

6.3.5 Industrial Pretreatment

The City's Industrial Pretreatment team will determine the required sampling during spill evaluation and clean up. The Coordinator will initiate an investigation as to the source and cause of the SSO.

Industrial Pretreatment will assist as directed regarding regulatory reporting of the SSO event.

6.4 Initial Notification Procedures

The Sewer Overflow Response Procedure presents a strategy to mobilize labor, materials, tools and equipment to correct or repair any condition, which may cause or contribute to an unauthorized discharge. The City Employees or the public (businesses, residents, etc.) may detect an overflow, or report suspicious circumstances (unusual odors, flooding, etc.) which could indicate the possibility of an overflow. The general flow of information is shown in Figure 6-6 at the end of Section 6.

During normal business hours, calls received by the receptionist will be routed or forwarded as shown in Figure 6-10. After-business hour and weekend calls are received by City police dispatch and are forward to the appropriate on call person. Once police or fire department receives the initial report, the appropriate crews from the appropriate agencies will be dispatched.

If the originating spill enters into areas outside the responding agency's jurisdiction, the spill will continue to be contained and cleaned. However, the affected agency will be notified of the spill to ensure proper notifications are completed.

Upon arriving to respond to a spill, if it is found that the spill is outside of its jurisdiction, the responsible agency will be contacted to respond to the spill. Until the responsible agency arrives, the initial responding agency will continue its efforts to contain and clean up the spill.

6.4.1 Emergency Call Out Lists

The City maintains a Confidential Contact List that includes key personnel within the City as well as vendors that may be called on to assist in the SSO Response. The Table that follows (Include Table Reference Number)

CITY OF BANNING CONFIDENTIAL CONTACT LIST

Merlin Johnson Construction, Inc.
Merlin Johnson Construction, Inc.

P.O. Box 777

Mentone, Ca 92359
Business: (909) 794-7702

Fax: (909) 794-3653

Cell: (909) 322-6061

Ted Burton's Underground
Ted Burton

238 Maple Ave.

Beaumont, Ca 92223
Business: (951) 769-0647

Fax: (951) 769-7137

Center Electric
Mike Munksgaard
2942 Las Flores Ave
Riverside, Ca 92503
Emergency: (909) 422-4690
Fax: (951) 687-3286
Cell: (951)830-7411

Lynn Merrill and Associates
256 Cajon Street, Suite C
Redlands, CA 92373
Business: (909) 894-4425

Jim Doolittle Construction
Jim Doolittle
1430 West Lincoln
Banning, Ca 92220
Business: (951) 378-6754
Fax:
Cell: (951) 378-6754

Rain for Rent
Art Hunter
6400 Fischer Road
Riverside, Ca 92507
Business: (951) 635-2171
Fax: (951) 681-7372
Cell: (909) 772-1073

Weaver Grading, Inc.
Mark Weaver
1177 Beaumont Ave.
Beaumont, Ca 92223
Business: (951) 845-1222
Fax: (951) 845-2079
Cell: (909) 578-8029

Innerline Engineering
Bill Houser

Business: (800) 209-0000
Fax: (760) 418-8907
Cell: (951) 9842

Godwin Pumps
Jim Rufing
11161 Harrel Street
Mira Loma, Ca 91752
Business: (951) 681-3636
Fax: (951) 681-2623
Cell: (562) 572-4738

G&G Environmental Compliance
Gary Ethridge
5053 La Mart Drive
Riverside, Ca 92507
Business: (951) 683-3538
Fax: (951) 683-3859
Cell: (951) 858-1542

6.4.1 Sanitary Sewer Overflow Report Form

GENERAL INFORMATION		
Names of Person Completing this Report:		
Date:	Map Attached Showing Location ☐ Yes ☐ No	
Incident Street Address/Site:		
GPS Coordinates: Longitude - ___Deg ___Min __Sec Latitude - ___Deg ___Min __Sec		
City:	County:	Zip Code:
Cause of SSO Occurred in: ☐ Lateral ☐ Main Line		Weather at time of SSO: ☐ Dry ☐ Rain
SSO DETAILS		
Date of SSO:	Time Reported:	Crew Arrival Time:
Date SSO Stopped:	Time SSO Stopped:	SSO Duration (Days/Hours/Min):
SSO Rate (Gal/Min):	Estimated SSO Volume Recovered (Gal):	Estimated SSO Volume (Gal):
How was Volume Calculated?		

SSO CLASSIFICATION

Sanitary Sewer Overflow Category ☐ Category 1 ☐ Category 2
Private Lateral Sewer Discharge (PLSD) ☐ Category 1 ☐ Category 2

Definitions: Category 1 is over 1,000 gallons or any SSO including PLSD that reaches a drainage channel and or surface water. **(NOTE: CAL EMA must be notified within 2 hours of knowledge if notification is possible and notification doesn't impede emergency measures)**
Category 2 is all other SSOs that result from a failure in the Sanitary Sewer System
Private Lateral sewer discharge (PLSD) is a discharge caused by blockage or other problems within a privately owned lateral.

Suspected Cause of SSO: (check box if additional sheets attached ☐) :

☐ Roots ☐ Grease ☐ Line Break ☐ Infiltration ☐ Rocks ☐ Blockage ☐ Vandalism
☐ Power Failure ☐ Pump Station Failure ☐ Debris ☐ Flood Damage ☐ Manhole Failure
☐ Private Property Lateral ☐ Construction ☐ Other ☐ Unknown

Brief Description of overflow cause: _____
_____
_____

SSO CLASSIFICATION (Continued)	
Final SSO Destination:	
Receiving Waters Affected: ☐ Yes ☐ No Visual Observations:	
Cleanup Method(s) Used:	Amount Flushed (Gal): Amount Flush Water Recovered (Gal):
SSO ACTIONS	
Area Barricaded/Closed: ☐ Yes ☐ No Describe (Include times barricades and signs posted and removed) :	
Warning Signs Posted: ☐Yes ☐No Location(s) of Sign(s)	Neighbors Notified: ☐ Yes ☐ No
Sample(s) Collected: ☐ Yes ☐ No Location(s): ☐ Upstream ☐ Downstream ☐ At Discharge Point Requested Analysis: ☐ Fecal Coliform ☐ Ammonia ☐ Other Specify: _____	By: Time:
SSO Notifications:	
☐ California Emergency Management Agency (Cal EMA) (800) 852-7550 Fax: (916) 845-8511 Person Contacted: _____ ☐ Colorado River Basin Water Quality Control Board (760) 346-7491 Fax: (760) 341-6820 Person Contacted: _____ ☐ Riverside County Environmental Health (888) 722-4234 Person Contacted: _____ ☐ City of Banning (Director of Public Utilities) (951) 922-3266 Person Contacted: _____ Date Reported: _____ (MM/DD/YY) Time Reported: _____ This Report is: ☐ Preliminary ☐ Final ☐ Revised Final	
Signature of Person Completing the Form: _____ Date: _____	

SSO CLASSIFICATION (Continued)
Debriefing Meeting Notes & Findings (Date: _____ Time: _____)
ATTENDEES
FOLLOW-UP ITEMS
Name of Person Conducting the Debriefing: _____

Figure 6-1 Sanitary Sewer Overflow Report

The City documents SSO information on a standard report (Shown in Figure 6-1) that is initiated in the field and returned to the office for completion. The form contains pertinent information that enables the electronic report (through CIWQS) to be easily completed and transmitted to the State.

6.5 Assessment, Containment, Traffic Control and Clean-up

City employees are responsible for minimizing the affects of any SSO. The following sections provide guidance's for either the first responder or the SSO response supervisor in the event of a SSO.

6.5.1 Preliminary Assessment of Damage to Private/Public Property

The first person at the scene gathers pertinent information and determines if the spill is a SSO. Next, the SSO classification (i.e., Category 1, 2, or private lateral) is determined. Regardless of the classification, all SSOs are treated in the same manner. The first priority is to contain and clean up the area before the SSO reaches a storm drain. Once the spill is contained and cleaned up, documentation and reporting become priorities. In addition to accurate reports, photographs are taken to document the spill and the procedures used for containment and cleanup. Once a Sanitary Sewer Overflow (SSO) Report form is received, the field notes can be transcribed to the SSO Report form.

6.5.2 Containment

After the initial assessment, all reasonable efforts will be made to contain the SSO (e.g., install plugs, sandbags, sand/rock, etc.)

6.5.3 Traffic and Crowd Control

The traffic and crowd control used for the SSO situations can be summarized as follows:

Spills (less than 1,000 gallons)

A. Setup traffic cones to direct traffic from spill area.
B. Use staff personnel to control traffic and pedestrians.

Spills (1,000 to 10,000 gallons)

A. Contact Mutual Aid Contract cities as needed.
B. Perform lane closures as needed.
C. Close any affected entrances or exits from all public and private facilities.
D. Place proper signage for any lane closures including contaminated area signs.
E. Use caution tape and barricades to protect pedestrians from contaminated area.

Spills (> 10,000 gallons)

A. Assess spill situation.
B. Contact Mutual Aid contract cities as needed.
C. Inform local police and sheriff's department of any law enforcement needed road closures and traffic control.
D. Delegate the responsibilities to Mutual Aid team members to inform public of hazards also use signage to inform public of potential hazards to public health and safety.
E. Block public access to hazard using barricades, cones and caution tape.

6.5.4 Initial Estimates of Flow Volume

Initial estimates of flow volumes are through on-site observations using best professional judgment and guidelines established by recognized engineering firms and other municipal agencies. The Best Practices Guidelines shown on the following pages are used in making initial estimates of overflow volumes. Final numbers are confirmed during cleanup and recovery efforts based upon volumes returned to the sewer and estimates of unrecovered volumes.

Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and Response Plan

Sample Templates for SSO Volume Estimation

TABLE 'A'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER IN PLACE

24" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q in gpm	Q in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.001	
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	6"
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	8"
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

36" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q in gpm	Q in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.002	
1/2	4	0.006	
3/4	8	0.012	
1	13	0.019	
1 1/4	18	0.026	
1 1/2	24	0.035	
1 3/4	31	0.044	
2	37	0.054	
2 1/4	45	0.065	
2 1/2	55	0.079	
2 3/4	66	0.095	
3	78	0.113	
3 1/4	93	0.134	
3 1/2	109	0.157	
3 3/4	127	0.183	
4	147	0.211	
4 1/4	169	0.243	
4 1/2	192	0.276	
4 3/4	217	0.312	6"
5	243	0.350	
5 1/4	270	0.389	
5 1/2	299	0.430	
5 3/4	327	0.471	
6	357	0.514	
6 1/4	387	0.558	8"
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	10"
8	622	0.896	
8 1/4	659	0.949	
8 1/2	697	1.003	
8 3/4	734	1.057	
9	773	1.113	

Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and Response Plan

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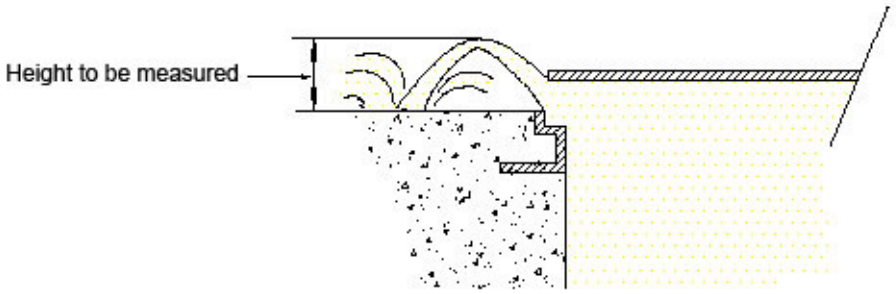
The formula used to develop Table A measures the maximum height of the water coming out of the maintenance hole above the rim. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is unseated and slightly elevated on a 24" casting. The maximum height of the discharge above the rim is 5 ¼ inches. According to Table A, these conditions would yield an SSO of 185 gallons per minute.

FLOW OUT OF M/H WITH COVER IN PLACE



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and Response Plan

TABLE 'B'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED

24" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q		Min. Sewer size in which these flows are possible
	In gpm	In MGD	
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

36" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q		Min. Sewer size in which these flows are possible
	In gpm	In MGD	
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	556	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.87	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

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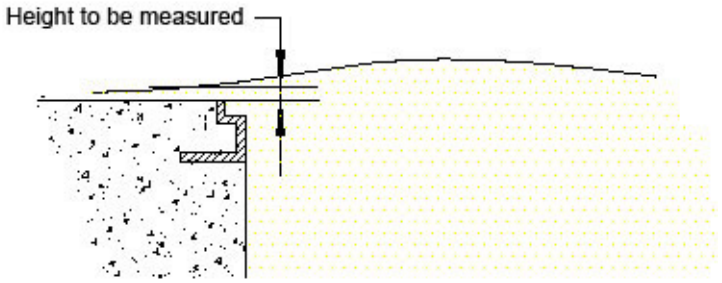
The formula used to develop Table B for estimating SSO's out of maintenance holes without covers is based on discharge over curved weir -- bell mouth spillways for 2" to 12" diameter pipes. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is off and the flow coming out of a 36" frame maintenance hole at one inch (1") height will be approximately 660 gallons per minute.

FLOW OUT OF M/H WITH COVER REMOVED (TABLE "B")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

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Best Practices for Sanitary Sewer Overflow (SSO) Prevention and Response Plan

TABLE 'C'

ESTIMATED SSO FLOW OUT OF M/H PICK HOLE

Height of spout above M/H cover H in inches	SSO FLOW Q in gpm	Height of spout above M/H cover H in inches	SSO FLOW Q in gpm	
1/8	1.0	5 1/8	6.2	
1/4	1.4	5 1/4	6.3	
3/8	1.7	5 3/8	6.3	
1/2	1.9	5 1/2	6.4	
5/8	2.2	5 5/8	6.5	
3/4	2.4	5 3/4	6.6	
7/8	2.6	5 7/8	6.6	
1	2.7	6	6.7	
1 1/8	2.9	6 1/8	6.8	
1 1/4	3.1	6 1/4	6.8	
1 3/8	3.2	6 3/8	6.9	Unrestrained
1 1/2	3.4	6 1/2	7.0	M/H cover will
1 5/8	3.5	6 5/8	7.0	start to lift
1 3/4	3.6	6 3/4	7.1	
1 7/8	3.7	6 7/8	7.2	
2	3.9	7	7.2	
2 1/8	4.0	7 1/8	7.3	
2 1/4	4.1	7 1/4	7.4	
2 3/8	4.2	7 3/8	7.4	
2 1/2	4.3	7 1/2	7.5	
2 5/8	4.4	7 5/8	7.6	
2 3/4	4.5	7 3/4	7.6	
2 7/8	4.6	7 7/8	7.7	
3	4.7	8	7.7	
3 1/8	4.8	8 1/8	7.8	
3 1/4	4.9	8 1/4	7.9	
3 3/8	5.0	8 3/8	7.9	
3 1/2	5.1	8 1/2	8.0	
3 5/8	5.2	8 5/8	8.0	
3 3/4	5.3	8 3/4	8.1	
3 7/8	5.4	8 7/8	8.1	
4	5.5	9	8.2	
4 1/8	5.6	9 1/8	8.3	
4 1/4	5.6	9 1/4	8.3	
4 3/8	5.7	9 3/8	8.4	
4 1/2	5.8	9 1/2	8.4	
4 5/8	5.9	9 5/8	8.5	
4 3/4	6.0	9 3/4	8.5	
4 7/8	6.0	9 7/8	8.6	
5	6.1	10	8.7	

Note: This chart is based on a 7/8 inch diameter pick hole

Disclaimer: This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

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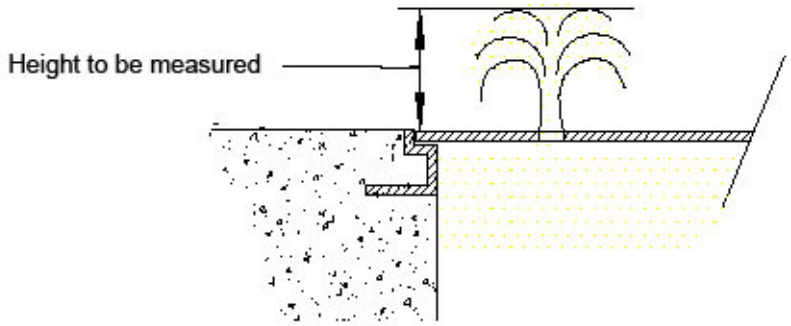
The formula used to develop Table C is Q=CcVA, where Q is equal to the quantity of the flow in gallons per minute, Cc is equal to the coefficient of contraction (.63), V is equal to the velocity of the overflow, and A is equal to the area of the pick hole.[2] If all units are in feet, the quantity will be calculated in cubic feet per second, which when multiplied by 448.8 will give the answer in gallons per minute. (One cubic foot per second is equal to 448.8 gallons per minute, hence this conversion method).

Example Overflow Estimation:

The maintenance hole cover is in place and the height of water coming out of the pick hole seven-eighths of an inch in diameter (7/8") is 3 inches (3"). This will produce an SSO flow of approximately 4.7 gallons per minute.

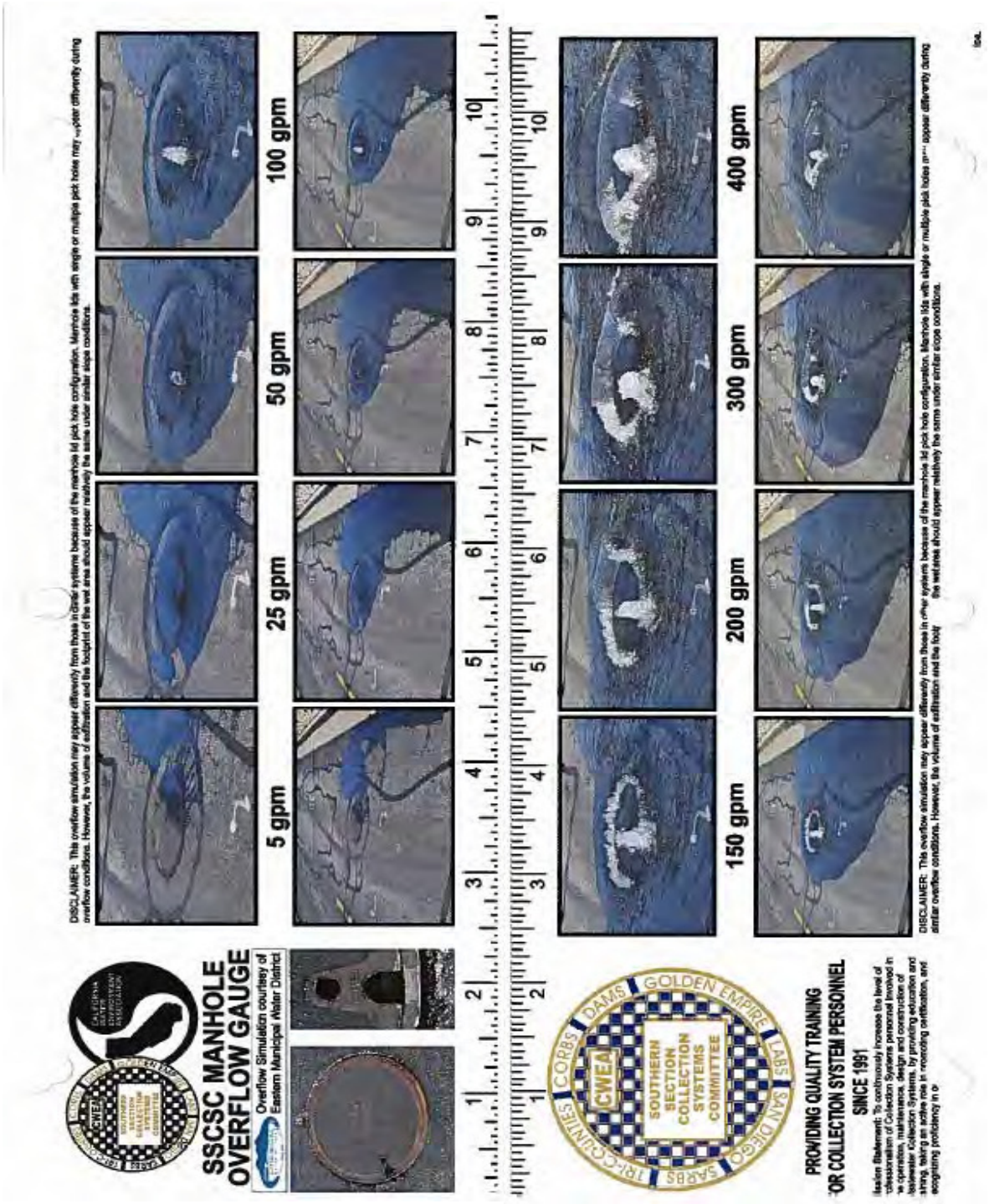
FLOW OUT OF VENT OR PICK HOLE (TABLE "C")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

[2] Velocity for the purposes of this formula is calculated by using the formula h = v squared / 2G, where h is equal to the height of the overflow, v is equal to velocity, and G is equal to the acceleration of gravity.

Figure 6-2 Estimating SSO Volume



6.5.5 Additional Measures for Prolonged SSO Conditions

- Set up a portable by-pass pump operation around problem/obstruction. Contractors may be utilized in the event of a prolonged SSO.
- Implement continuous or periodic monitoring of the by-pass pumping operation as necessary.

6.5.6 Clean-up

All SSO sites are to be thoroughly cleaned after an SSO (i.e., no readily identifiable residue is to remain).

City SSO Clean up procedures:

- Where practical the area is thoroughly flushed and cleaned of any sewage using high-pressure water hose or Combination truck. Solids and debris are flushed, picked-up and hauled away. All flush water will be contained and collected for proper disposal.
- The SSO site is secured to prevent contact by members of the public until the site has been thoroughly cleaned. Posting of signs, if required, concerning public health and safety will be undertaken pursuant to Section 6.18.1.
- Disinfect the SSO site using liquid bleach (sodium hypochlorite), etc. Caution needs to be used to ensure that any disinfection chemicals used, do not contribute to or cause violations of other NPDES Permit requirements related to chlorine levels in waterways.
- Ensure proper contact time for proper disinfection.
- When spilled sewage creates standing water, (ponding) pump dry and remove all residues.
- If sewage has discharged into a body of water that may contain fish or other aquatic life, do not disinfect, contact appropriate agency for further instructions.

6.5.7 Monitoring

6.5.7.1 Surface Water Spill

- Water quality samples must be taken in the event sewage enters surface water.
- Samples must be taken upstream and downstream of any surface water.

- The sample location and time will need to be logged on the chain of custody form.
- A map of the sample location(s) should be made so that follow-up testing is performed at the same location(s).
- The employee taking the samples will start at point of entry. When taking the sample, submerge the bottle below the surface of the water with the cap on. Once the bottle is under the surface, remove the cap and fill the bottle. Gloves will be worn while sampling to avoid infecting any open wounds.
- Spill should be analyzed, at a minimum for:
  - pH; E/C; Ammonia Nitrogen;
  - Biochemical Oxygen Demand (BOD);
  - Dissolved Oxygen (DO);
  - Total Fecal Coliform;
  - Total Suspended Solids (TSS); and
  - Any other constituents as directed by the RWQCB or by the City's Environmental Control Section.
- Bottles & Quantity Used for wastewater analysis
  - pH; E/C; Ammonia Nitrogen; *100 mL in plastic or glass container*
  - Biochemical Oxygen Demand (BOD); *1000 mL in plastic or glass container*
  - Dissolved Oxygen (DO); *300 mL in glass container*
  - Total Fecal Coliform; *100 mL in Sterile Plastic or Glass container*
  - Total Suspended Solids (TSS); *500 mL in plastic or glass container*
  - Any other constituents as directed by the RWQCB or by the City's Industrial Pretreatment *refer to "Sample Containers, Preservation Techniques, and Holding times for Aqueous Matrices."*

6.5.7.2 Ground (Non-Surface Water) SSO

SSOs to the ground that do not reach surface waters are monitored in accordance with any requirements stipulated by the RWQCB.

6.6 Private Property SSOs

The City will respond to all SSOs within their service area. If determined that a SSO originated from a sewer lateral or septic system on private property, the City will assist in the control and containment to ensure that the wastewater does not enter into storm drains, spillways, etc. The property owner will be informed of the blockage. The City will provide a

copy of the Private Lateral Sewer Policy (See Appendix E) and notified of their responsibility to remove the blockage. If the SSO was a result of the sewer trunk line, the response crew will correct the problem. In each case, the City will report the spill in accordance with Section 6.8 of this Plan.

6.7 SSO Reporting

Forward SSO reports to the RWQCB and other authorities as summarized in Section 6.15, Sewer Overflow and Discharge Reporting. Each category of SSO (e.g., Category 1 and 2 and the private lateral sewage discharge) having different reporting timeframes. Said timeframes are included in Section 6.14. Complete reporting requirements (General Order No. 2006-0003-DWQ) and recent revisions (Order WQ-2008-0002-EXEC) are included in Appendix A.

Electronic reporting of all Category 1 and Category 2 SSOs is required. Electronic reporting of private lateral sewer spill reporting is voluntary but encouraged.

Please note that voluntary reporting of private lateral sewer overflows during a calendar month does not eliminate the requirement to submit a "No-spill Certification" if a Category 1 or 2 SSO didn't occur during that month. All SSO reports are considered drafts until the Legally Responsible Official (LRO) verifies the accuracy of information prior to finalizing and certifying the report. These procedures including timeframes for reporting are contained in the Monitoring and Reporting Program (MRP) section of the WDR. The WDR requires SSO reports to be retained for a minimum period of five years from the date of the incident. Reports older than five years may be archived in accordance with approved City record management practices.

6.8 Regulatory Agency Notification Plan

The Regulatory Agency notification plan establishes procedures, which the City will follow to provide formal notice to the RWQCB, Office of Emergency Services (OES), Department of Environmental Health Division of Riverside County, and other agencies as necessary in the event of a SSO. Notifications to the RWQCB are verbal, electronic, or by fax (when the electronic database is not functioning) and shall be performed in accordance with specific requirements contained in Attachment A of the SSO. Verbal notifications to other regulatory agencies shall be at the same time the Regional Board is notified.

Notifications to the Regional Board under the Monitoring and Reporting criteria listed in the General Order for Sanitary Sewer Systems do not preclude the City from reporting SSOs to other regulatory agencies pursuant to California state law. SSOs will be reported to OES, in accordance with California Water Code Section 13271 and to County Health officials in accordance with California Health and Safety Code Section 5410 et seq. The SSO database will automatically generate an e-mail notification to the appropriate County Health Officer and/or environmental Health Department and the appropriate Regional Water Board with customized information about the SSO upon initial reporting of the SSO and final certification for all Category 1 SSOs. Written notifications to other regulatory agencies, when required, shall be made within five (5) business days of the initial notification.

6.8.1 Initial Notification

In the event of a **SSO that results in a discharge to a drainage channel or surface water**, the City must notify the State Office of Emergency Services, the local health officer or directors of environmental health services, and the Regional Water Quality Control Board as soon as possible. In **no case can the initial notification be later than two (2) hours** after becoming aware of the discharge.
The **City must also certify to the Regional Board**, as soon as possible, but **no later than twenty-four (24) hours** after becoming aware of a discharge that the State Office of Emergency Services and the local health officer or directors of environmental health with jurisdiction over the affected water bodies have been notified of the discharge. The Regulatory Agencies will be contacted by the Supervisor/Manager in charge.

Category 1 SSOs require the City to file an initial report to the Online SSO tracking system as soon as possible but in no case later than three (3) business days after the city is aware of the SSO. A final certified report must be completed within fifteen (15) calendar days of the conclusion of the SSO response and remediation.

Category 2 SSOs must be reported to the online Database tracking system within 30 days after the end of the calendar month in which the SSO occurs. (e.g., all SSOs occurring in the month of January must be entered into the database no later than March 1st.)

If no SSOs occur during a calendar month, the City must file an electronic report through the Online SSO Tracking certifying that no SSOs occurred during the designated month.

If the SSO Online database is not available, the City must fax all required information to the Regional Board office in accordance with the time schedules listed above.

It is important to gather essential information during each SSO. To be able to file adequate electronic reports, certain mandatory information must be collected. The following list represents, at a minimum, the information required before finalizing and certifying an SSO Report.

Category 2 SSOs:

A. Location of SSO (GPS Coordinates);
B. Applicable Regional Water Board, i.e. identify the region in which the SSO occurred;
C. County where SSO occurred;
D. Whether or not the SSO entered a drainage channel and/or surface water;
E. Whether or not the SSO was discharged to a storm drain pipe that was not fully captured and returned to the sanitary sewer system;
F. Estimated SSO volume in gallons;
G. SSO source (manhole, cleanout, etc.);
H. SSO cause (mainline blockage, grease, roots, etc.)
I. Time of SSO notification or discovery;
J. Estimated operator arrival time;
K. SSO destination;
L. Estimated SSO end time; and
M. SSO Certification – upon SSO Certification, the SSO Database will issue a Final SSO ID Number.

Private Lateral Sewage Discharges:

A. All information listed above (if applicable and known), plus:
B. Identification of sewage discharge as a "private lateral sewage discharge"; and
C. Responsible party contact information (if known).

Category 1 SSOs:

A. All information listed for Category 2 SSOs plus:
B. Estimated SSO volume that reached surface water, drainage channel, or not recovered from the storm drain;
C. Estimated SSO amount recovered;
D. Response and corrective action(s) taken;
E. If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA must be selected;
F. Parameters that samples were analyzed for (if applicable);

G. Identification of whether health warnings were posted;
H. Beaches affected (if applicable). If no beach impacted, NA must be selected;
I. Whether or not there is an ongoing investigation;
J. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
K. OES control Number (if applicable);
L. Date OES was called (if applicable);
M. Time OES was called (if applicable);
N. Identification of whether County Health Officers were called;
O. Date County Health Officer was called (if applicable); and
P. Time County Health Officer was called (if applicable).

6.8.2 Secondary Notification

After those parties on the mandatory notification list have been contacted, the City will contact the other regulatory agencies as necessary, as well as other impacted parties if there has been an overflow.

6.8.3 Electronic Reporting Procedures

Sanitary Sewer Overflows (SSOs) are reported electronically to the State Water Resources Control Board. Spill reports must be entered into the California Integrated Water Quality System (CIWQS), which can be found at https://ciwqs.waterboards.ca.gov/. (See Figure 6-2)

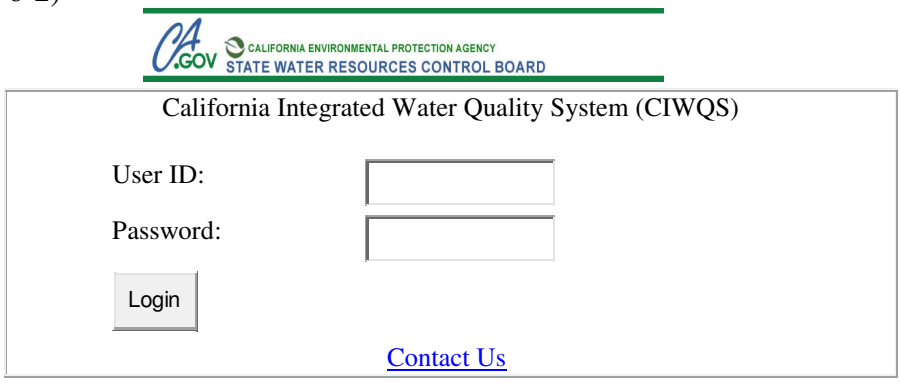


Figure 6-3 CIWQS Log-in Screen Shot

Sign in using the login name and password that has been set up and assigned to identified wastewater plant management and staff. Once signed in, the next screen will look like Figure 6-3.

- Collection System Questionnaire ?

  Pertinent information regarding your collection system.

- Sewer System Management Plan (SSMP) Certification ?

  Certify SSMP completion/compliance

- Reporting New SSO ?

  Report new SSO.

- Modifying Existing SSO ?

  View/Modify existing SSO Report.

- View No Spill Certification ?

  View no spill certification.

Figure 6-4 SSO Electronic Reporting CIWQS Menu Screen

From this menu, select "Modify Existing SSO". The next screen will prompt the user to create either a new SSO report or Search for an existing SSO Report. Select Search and a Report similar to the one shown on the next page will be generated. The CIWQS System will generate a listing of all reported SSOs with the SSO Event ID. The Event ID can be used to collect detailed information from each event.

6.8.4 Spill Report Debriefing

After the sewer spill has been mitigated and no more than one week after the incident, a spill-debriefing meeting should be held to discuss any problems encountered during each phase of the spill response procedure. All personnel involved with the incident are to attend and ensure the spill debriefing meeting presents an opportunity to correct any noted deficiencies and to better prepare for and respond to future SSOs.

6.9 Collection System Mapping

The City maintains maps of the collection systems and the storm drains as either a sewer atlas, updated on a regular basis, or electronically in the form of Geographic Information System (GIS). Utility maps are available via the City intranet. Figure 6-4, on the next page, is a screen print that illustrates the types of information available electronically on the City's Intranet.

Sewer Atlas maps are located at the Water & Wastewater Superintendent's office and a copy is placed in each sewer collection vehicle.

6.10 Training

The Wastewater Collection staff will participate in an annual training session scheduled with appropriate staff in one of the three different types of training which would demonstrate the strengths/weaknesses of the SSO. The three different types of training exercises that the agencies will participate include:

- Orientation Exercise: Exercise consisting of brief lecture; overview of the requirements; and past experiences. It will serve as a session to instruct employees on plan and required documentation.
- Tabletop Exercise: SSO is simulated, without actual deployment of equipment or resources. Participants play through discussion and the use of a facilitator. Exercise effectiveness is determined by the feedback from participants and impact on revisions to plans, procedures and systems.
- Functional Full Scale Exercise: A spill event is simulated during the exercise. Controllers monitor the play, and observers record the player's actions. The exercise will provide opportunity to evaluate the plan's objectives. It will also test equipment, response time, training, resource, and work force capabilities.

Records of training and event participation will be recorded and maintained. At this time, no certification requirements are required, but may be imposed later by the RWQCB.

6.11 Public Advisory Procedure

All media inquiries will be directed to the City's Public Information Officer or the position designated for this purpose by the City Manager.

6.11.1 Temporary Signage

In public accessed areas, signage and barriers must be in place for the duration of the cleanup and disinfection process. Signs warning the public of a sewage release should be posted in the affected area. Signs should include, at a minimum, the wording of "raw sewage" (See Figure 6-5). Warning signs should remain posted until the Department of Environmental Health Division of Riverside County or RWQCB staff authorizes their removal, or until receiving water sample results indicate background levels (levels determined by upstream samples) have been attained.

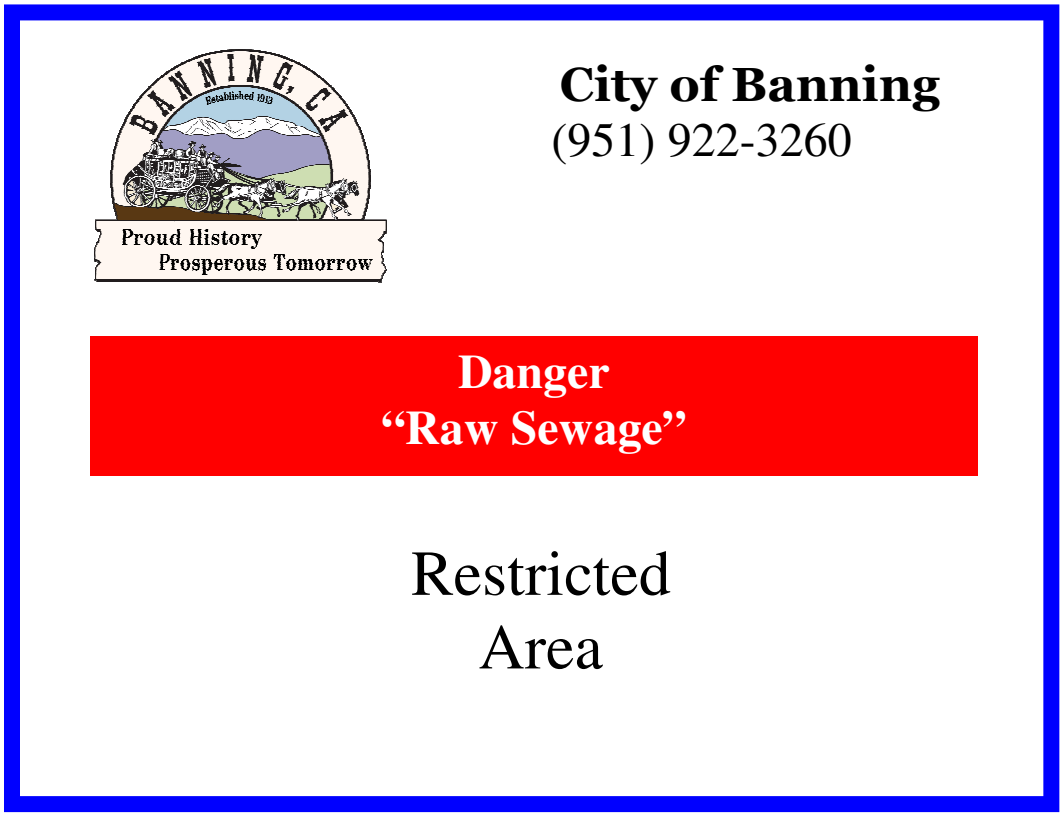


Figure 6-5 Sewage Spill Sign

6.12 SSO Plan Maintenance

6.12.1 Submittal and Availability of the SSO Plan

The SSO Plan does not have to be submitted to the State or Regional Board. The SSO Plan must however, be available for their review during routine inspections. As such, the SSO Plan will be available at the City's Utility Department in both hard copy and electronic versions.

6.12.2 Review and Update of SSO Plan

The SSO Plan is a dynamic document and will be reviewed and revise to reflect current policies and procedures as needed. The SSO Plan will be reviewed each year. The annual review of the plan will also insure all provisions of the plan are being met and implemented. Any SSO plan deficiencies and updates will be identified and corrected. Any proposed changes to the SSO Plan will be adequately communicated and reviewed. Changes become final when approved by the Director of Water and Wastewater.

6.13 Tracking SSOs

Sanitary Sewer Overflows (SSOs) are tracked using the same system that is used for electronic reporting (CIWQS) to the State Water Resources Control Board. (https://ciwqs.waterboards.ca.gov/).

Sign in using the login name and password that has been set up and assigned to identified wastewater plant management and staff.

The Summary Report is an excellent tool for looking at spill history at a glance that shows how many spills occurred during certain time frames; the volume of each spill; the location; and other important information that helps the city identify causes and history patterns that may serve as indictors for SSMP improvement opportunities. The following Report can be generated by going to the State Water Resources Control Board SSO Public Report web page at:
https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_overview.

Select SSO Report. Next, fill out the City or Zip Code and the time-period of interest.

Most tables on the CIWQS website can be saved as Excel Spreadsheets for further data analysis if necessary. The City will use the Reports for identifying deficiencies in the current program and for evaluating the best methods for improving the effectiveness of the SSMP.

Additionally, a "No-Spill Certification" Report can be generated that indicates all months where no SSO occurred. A sample copy of the No Spill Report Certification is shown in Figure 6-4.

No Spill Certification:

I certify under penalty of law that no spills occurred for the month specified below. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine or imprisonment, for knowing violations. Clicking the "Certify" button below indicates my certification of this report and my understanding of the above conditions.

Month/Year Without Spills:* - Select Month - - Select Year -

Confirmation Number	No Spill Certificate for the Month of	Entered Date/Time	Certified By
482685	Jan-07	2007-2-20.11.17. 53. 0	Perry Gerdes
803283	Oct-08	2008-11-12.10.28. 18. 0	Perry Gerdes
801718	Sep-08	2008-10-29.14.7. 26. 0	Perry Gerdes
762177	Apr-07	2008-6-12.8.17. 56. 0	Perry Gerdes

Previously Submitted Months with "No Spill Certification"

Table 6-2 CIWQS No-Spill Summary Report

FLOW CHART
SANITARY SEWER OVERFLOW RESPONSE PLAN

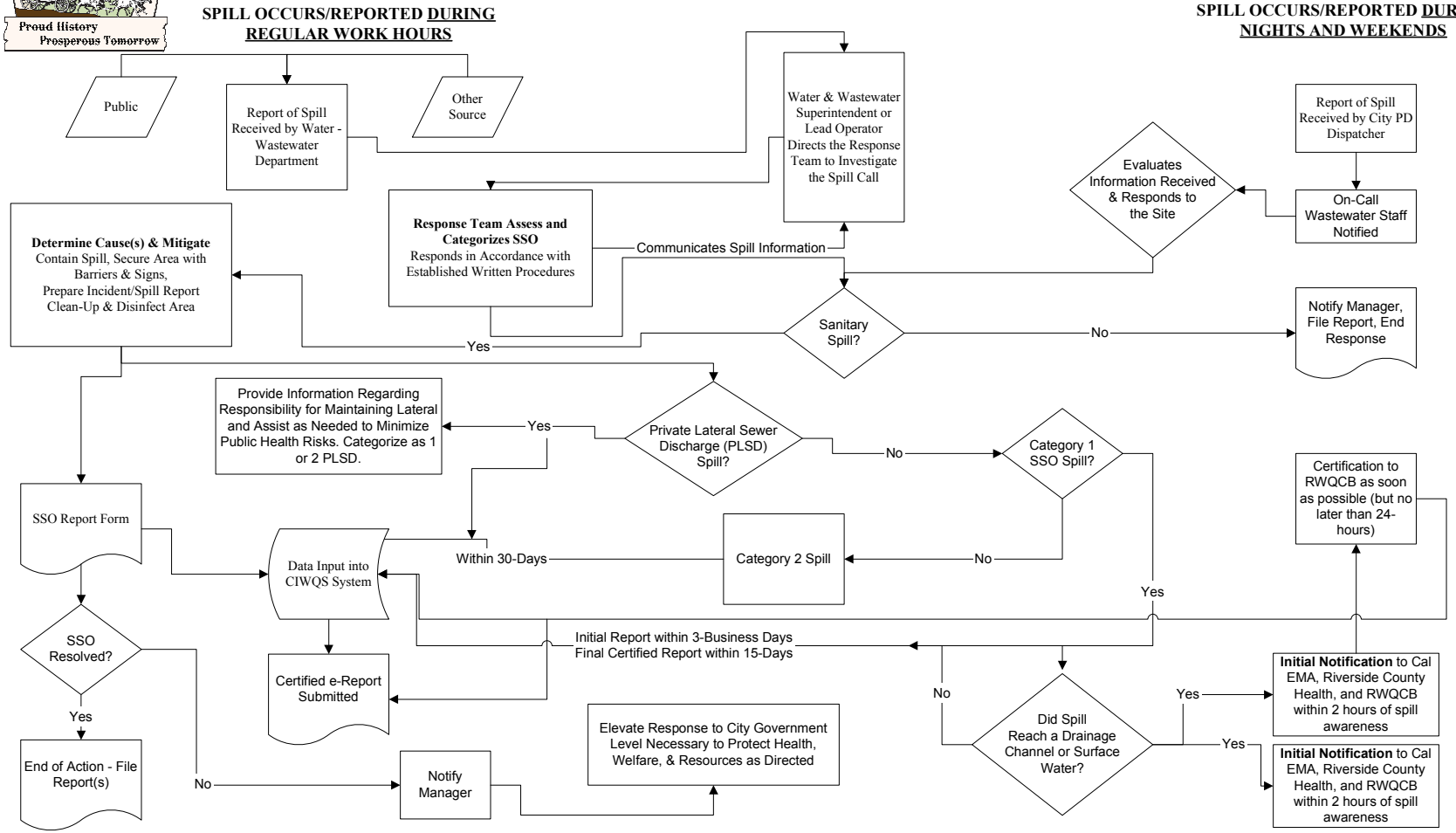


Figure 6-6 SSO Response Flow Chart

7. FATS, OILS, AND GREASE CONTROL PROGRAM

The City implements a Pretreatment Program (Program) and conducts inspections at a wide range of commercial and industrial facilities including food service operations. Formal approval of all elements of the Pretreatment program is pending. The legal authority for the Program currently exists in Ordinances No. 1206 and No. 1271. FOG Control Program language was included in the draft Ordinance language. The draft Ordinance is part of the Pretreatment Program approval package, which is still under review. The City's draft Enforcement Response Plan (ERP) includes BMP language and enforcement steps needed for the FOG Control Program. The following sections in this chapter describe the FOG Control Program.

7.1 Background

The discharge of fats, oils, and grease (FOG) from animal and vegetable sources can create sewer line stoppages that result in sanitary sewer overflows (SSOs). Two main sources of FOG discharges are from the restaurant industry and similar facilities (e.g. cafeterias, penal institutions, schools, colleges, and universities with food services, and commercial kitchens) and residential users. The FOG discharges may be a result of poor housekeeping practices at restaurants and from poorly informed decisions by residential users. The result is the same: SSOs.

The discharge of hot or warm FOG materials to the sewer causes the quickest stoppage problems due to the receiving environment. The sewer line temperatures typically range from 70 –80 degrees Fahrenheit. Dishwashing machine temperatures are often as high as 160° F. At this temperature and when combined with detergent, FOG is emulsified. Without proper detention time in a grease interceptor, the FOG simply passes through to the sewer where it combines with cooler waters, solidifies, and adheres to the interior surfaces of a sewer line. The adhesion sites become future sites for additional adhesions much like making a candle. A source discharge of FOG will create a blockage pattern in the sewer line characteristic of the material discharged and the frequency of discharge. The blockage tends to increase in size downstream of the user's lateral connection to the sewer.

Grease interceptors are gravity separation devices to separate FOGs and solids from the wastewater discharge by allowing heavy FOG to be collected through settling and floatable FOG through plumbing configurations that retain fluids in the upper layers of the interceptor (See Figure 7-1). The use of biological or chemical agents in grease interceptors

to liquefy FOGs prior to discharge is problematic. Bacteria and enzymes act by reducing the long chain fatty acids into smaller chain molecules.

A bacteriological system, even under ideal environmental conditions takes 24 – 72 hours to convert the FOGs to carbon dioxide and water. Restaurant grease interceptors typically have low pH (below pH 6) and often lack adequate oxygen to support a good environment for bacteria. Therefore, the City's Municipal Code prohibits the use of such additives as a means of maintaining the interceptor.

Gravity separation interceptors are sized based upon flow rates through the unit and a two-hour minimum detention time is required during the plan review process. The result of bacterial or enzymatic product usage is a liquefaction or emulsification of the FOGs in the interceptor. When liquefied FOG is discharged to the sewer where any further degradation of the FOG by the bacteria or enzyme is prevented due to the dilution of the material and other interferences in the receiving sewage. The liquefied FOGs begin to adhere to sewer line interior walls, deplete the oxygen content of the wastewater due to the natural degradation microbes present in wastewater, and create odor problems due to the depleted oxygen content. These products are also prohibited by the City's Municipal Code.

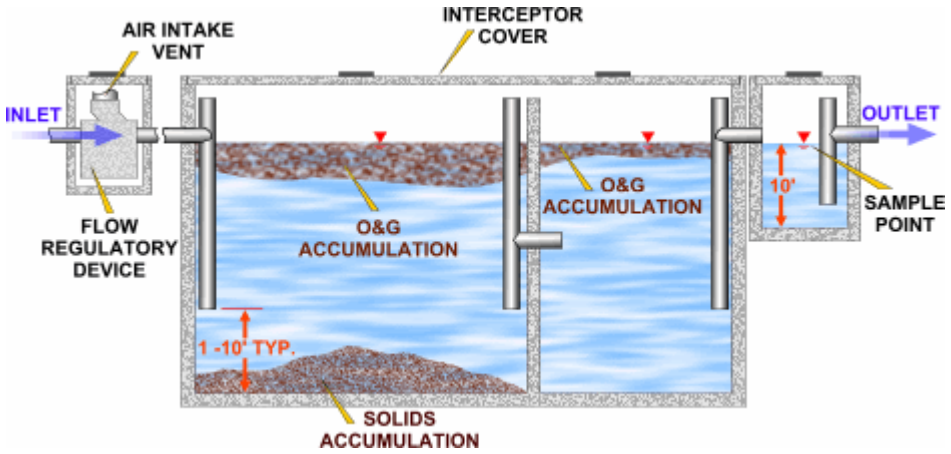


Figure 7-1 Standard Interceptor Drawing

The City's FOG Control Program regulates the discharge of FOGs to the sewer system and provides best management practices information to the restaurant community and homeowners about managing FOG.

7.2 FOG Program Elements

The City utilizes the following control techniques to minimize the discharge of FOG to the City's sewer collection system (collection system).

1. Site inspections
2. Database Tracking System
3. Public education and outreach
4. Collection system cleaning and assessments
5. Collection system closed circuit television (CCTV) inspection
6. Timely resolution of non-compliance through site inspections, application of BMPS, and the City's Municipal code 13.08.
7. Grease interceptor retro fits
8. Training

7.3 Site Inspections

Figure 7-2 Plugged Interceptor

Inspections of restaurants and similar sites enable the City to determine which sites may be problematic to the area's collection system. The City's Industrial Pretreatment Team is responsible for inspecting all restaurants and similar facilities within the City's service area minimally once per year, with many being inspected two to four times per year. The increase in inspection frequency is determined by the history of the site, the type of restaurant, whether a grease interceptor is on site, complaint history, stoppages, or SSO history. The photos above show a completely plugged grease interceptor chamber and the resulting wastewater overflow. Failure to maintain grease interceptors results in this level of grease buildup and subsequent wastewater overflow. The site inspections are used to ensure proper maintenance and the results of said inspection are maintained in a computer database that has the ability to provide the inspector with an inspection and enforcement history for the site.

The inspection will reveal if any bacterial, enzymatic, or chemical agents are used to dissolve, emulsify or suspend FOGs. The bacterial, enzymatic, or chemical agents may be found in products used for cleaning silverware, pots and pans, drain cleaning, and floor cleaning. Some products are specifically designed as a grease interceptor additive and are used to liquefy the FOGs in the grease interceptor with the promise that the interceptor will never need pumping.

The site inspection will also evaluate the grease interceptor for performance and integrity. The City uses the "25% Rule" when determining the efficiency of grease removal by an interceptor. The 25% Rule simply states that when the operational fluid capacity has been reduced by more than 25%, the interceptor is no longer capable of removing FOG at its designed rate and therefore needs to be serviced. The performance will also be affected by missing elbows, mid-wall tees, or influent extensions that are too long. The integrity of the interceptor is often affected by anaerobic conditions that generate sulfide gas that causes corrosion of concrete surfaces. Once the concrete begins to corrode, plumbing connections are

compromised and, in some cases, the structural integrity of the interceptor is in question.

The Industrial Pretreatment team also works closely with the Riverside County Department of Environmental Health to share information gained during restaurant inspections. Pretreatment inspectors have some knowledge of what constitutes Health and Safety Code restaurant violations. When these violations are observed, a phone call is placed to the Health Department to have the area inspector respond and take appropriate enforcement actions.

7.4 Public Education and Outreach

The City uses the pretreatment inspectors as the principle education and outreach method to contact the restaurant community and residents. Occasionally the inspectors will participate in outreach efforts sponsored by other agencies. During an inspection of a restaurant, the inspector will use the opportunity to inform and educate the owner or manager about the various laws and regulations that affect their business. The inspectors also provide useful information (See Section 7.4.2) related to interceptor design, maintenance, and businesses that can assist the restaurants in maintaining pretreatment equipment. Subject areas would include:

1. Product usage and substitution;
2. Good housekeeping practices;
3. Grease interceptor evaluation;
4. Ordinance 1271 legal authority citations; and
5. The City's wastewater permits requirements.

The City also has a web site that informs residents about the proper disposal methods for FOG. Posters and flyers are available instructing residential customers to, "Never pour kitchen grease down the drain" or "put it in a container and dispose of it in the trash." This web site educates the resident about the proper care of their sewer lateral and the need to keep FOG out of the sewer. The residents are encouraged to call to receive more information or clarifications about the care of their sewer laterals. Information for sewer lateral care and FOG are available of the web at http://www.ci.banning.ca.us.

7.4.1 Sample BMP Posters for Food Service Establishments (FSEs)

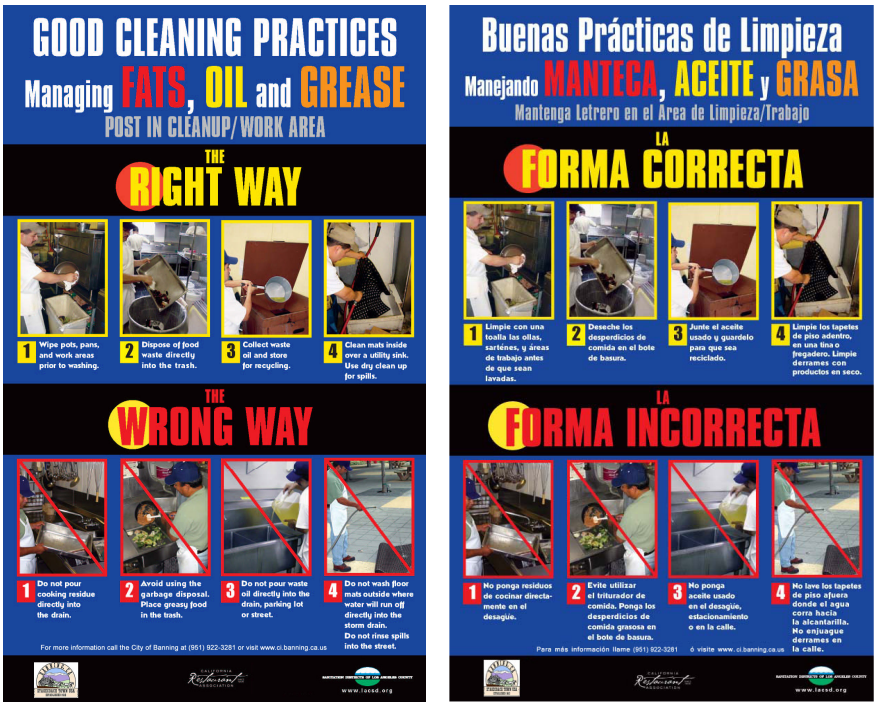
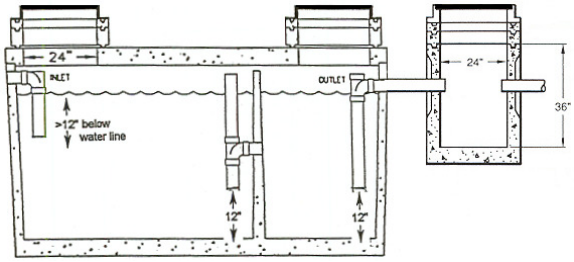


Figure 7-3 Restaurant FOG Posters

Inspectors will provide BMP FOG Posters to each FSE and instruct the site managers as to the importance and requirements to implement BMPs. The posting of FOG Posters is mandatory and failure to implement BMPs will lead to enforcement actions.

7.4.2 Commercial Grease Interceptor Requirements

The interceptor is required to meet all installation and maintenance requirements of the City. Interceptors are sized according to the design criteria specified in the current version of the Uniform Plumbing Code. The interceptor shall contain a minimum of two chambers, with a manhole cover over each chamber, and shall include a sample box. The sample box collects wastewater, which is sampled to verify the compliance with required discharge limits. City requires permitted food service facilities to meet specific discharge limits designed to protect the sewer collection and treatment system. The following information sheet of useful information is provided to businesses upon request.



GREASE MANUFACTURERS, INSTALLERS & HAULERS

The City does not endorse or otherwise promote any of the businesses listed below. The list is complied and provided for informational use only.

Interceptor Manufacturers	Interceptor Installers	Grease Waste Haulers
Pro-Cast Products (909) 793-7602	EDCA (909) 822-5261	Casey's Pumping Systems (909) 884-8288
	Arrowhead Septic Tank/Cesspool (909) 875-8373	Max Masterson (909) 820-1620
Jensen Precast Concrete Products (909) 350-4111 or (800) 257-6100	Gosney Construction (909) 877-0200	Honeydippers Pumping (909) 824-3366
	Bedlington's Backhoe Services (909) 877-4750	Shields Industries (800) 244-5899
Pyramid Precast Company (909) 823-4255	Koston Construction (909) 884-0559	Integrated Waste Management (909) 424-1648
	Rescue Rooter (909) 423-0710	Minuteman Rooter (800) 628-7867
Nottingham (818) 338-1145	Roto Rooter (909) 682-1692	SMC Grease Specialists (951) 788-6042

Figure 7-4 Interceptor Manufacturers, Installers, and Grease Haulers

7.5 Best Management Practices

The City has adopted Best Management Practices related to the operations and maintenance of grease interceptors and in the housekeeping operations associated with food preparation and cleanup at restaurants and other food service type facilities.

BMPs are not just guidelines for food service operations; they are enforceable when a FSE fails to implement one or more of the listed BMPs. The adopted BMPs are as follows:

7.5.1 Food Prep Area BMPs

Introduction: Fats, Oils and Grease (FOG) are food by-products that can severely damage a facility's drain line system as well as the sanitary sewer system. FOG collect and eventually harden on the inside of the sewer pipes; preventing water from flowing and causing blockages.

Blockages in the sewer cause Sanitary Sewer Overflows (SSOs), dumping raw sewage into streets, lakes, streams, homes and businesses. The best way to prevent blockages is to keep the FOG out of the drain line system. Below is a list of Best Management Practices that will help to prolong the life of your drain line system and reduce the inconvenience and cost of line blockages.

- **Don't** put grease or fryer oil down any sink or floor drain.
- **Don't** dispose of food or food scraps in sinks.
- **Don't** pour bleach directly down ANY drain. Bleach when used improperly dewaters grease, making is as hard as concrete.
- **Don't** take out sink strainers or drain covers. Empty scraps into trash, not down the drain.
- **Don't** use cleaning chemicals improperly. Follow the instructions on the label, for your safety as well as the safety of the environment.
- **Scrape** all solid food waste into the garbage.
- **Encourage** staff to be conservative about use of FOG in food preparation and serving.
- **Use** all cleaning chemicals according to the instructions on the label.
- **Use** paper towels to soak up oil and grease under fryer baskets and to wipe down work areas. Dispose of the paper towels into the trash.
- **Eliminate** the use of garbage disposals.
- **Check** all sinks and floor drains for strainers and covers and ensure they are in place and in good working order.
- **Be Knowledgeable** regarding the location, operation, and maintenance schedules of all FOG control devices.

- **Ensure** that used fryer oil is placed in the appropriate recycling container.
- **Maintain** all required grease removal devices (i.e. grease traps or interceptors) in good working order at all times.

7.5.2 Interceptor and Grease Trap Maintenance BMPs

Best management practices for controlling fats, oils, and grease also include maintenance of any required grease removal devices. The approved technology for removing FOG is a gravity interceptor or grease trap (referred to hereafter as treatment unit). For the treatment unit (TU) to work effectively, it must be cleaned periodically to ensure adequate detention time (the time water remains in the unit before passing through to the sewer).

Ensuring adequate detention time is accomplished by proper "sizing" when the TU is first installed and secondly by maintaining the TU so that 75% or more of the design capacity is available when in use. The City inspects grease interceptors on an annual basis (more often if necessary) and evaluates the TU's condition and the ability to remove FOG. The following BMPs are required for interceptor & grease trap maintenance.

- **Contract** an approved grease waste hauler to clean all chambers of the interceptor including the sample box (if one exists).
- **Establish** a routine interceptor-cleaning schedule and adjust the schedule based upon condition of interceptor after routine service. A minimum of 75% available capacity must be maintained at all times.
- **Observe** the interceptor cleaning periodically to ensure the waste hauler is doing a thorough job. This also provides you an opportunity to view the internal plumbing to ensure it is in good working order and complies with City standards.
- **Don't** use any emulsify agents in the interceptor that inhibits the interceptor from separating floatables and solids from the final effluent.
- **Keep Records** that document all interceptor service events on-site for the City inspector to review.

7.6 Sewer Line Cleaning and Assessments

All the attention to line cleaning and pump station performance is focused on system integrity. A two-inch thick deposit of FOG on the sidewalls of an eight-inch sewer line can lead to an SSO in a very short period. The City's Collection System maintenance schedule is essential in reducing SSOs. In addition to routine cleaning, known problem areas throughout the City are given extra attention. These additional cleanings are for sewer lines with a history of excessive roots, grease, solids or all three.

The Collections Staff prepares written reports for all sewer-cleaning activities, including SSOs. These reports provide the details of the condition of the sewer line and any problems that were encountered. When heavy or excessive FOG is found, a report will be generated and given to Pretreatment to investigate.

7.7 Sewer and Lateral CCTV Inspections

The most useful tool used by the Collection Staff to evaluate the condition of the sewer system is closed circuit television (CCTV) inspection. The City contracts main-line inspection (CCTV) services and uses a "push" system camera for emergencies. The goal is to have a video library of every sewer line in the City's service area. As shown in the photo to the right, grease has begun to build up on the upper wall in two locations of this sewer line and posses a significant threat for creating a blockage in the near future if this line is not service immediately.

Figure 7-5 Grease Buildup – Sewer Main

The CCTV inspections are also used to provide information about sewer line blockages. Since these CCTV inspections are recording actual events and conditions, the CCTV records can be used as evidence in an enforcement action. Sewer and lateral CCTV inspections are a necessary component for Pretreatment to bring an enforcement action against a business or company that has caused or has the potential to cause a sewer line blockage and/or SSO.

7.8 Enforcement

The discharge of wastewater by a user that causes a sewer line obstruction or blockage is prohibited by the federal Clean Water Act, 40 CFR

403.5(b)(3) and Ordinance 1271. The Ordinance provides the legal authority to take enforcement actions against any user that causes a sewer line obstruction and/or SSO. In order for the enforcement action(s) to be successful, a firm foundation of court admissible evidence must be obtained. This evidence must be objective and devoid of personal opinions. The use of CCTV evidence is a critical component of an enforcement action taken against a user for causing a sewer line blockage and/or SSO. In addition to the CCTV evidence, inspections are performed by Pretreatment at the suspected business to evaluate and investigate the cause(s) of the sewer line blockages and/or SSO. Once all the evidence is collected, the information is reviewed and an enforcement strategy is developed.

The level of initial enforcement will always be consistent with the severity or chronic nature of the violation. If debris accumulation in the sewer line has just begun (i.e., no SSO or sewer obstruction has occurred), then a correction notice may be issued to improve housekeeping practices and evaluate the business practices. If debris accumulation is significant and/or an SSO has occurred, then more severe enforcement actions are warranted. A Notice of Violation (NOV) or a Cease and Desist Order (CDO) may be issued with a compliance schedule to mitigate the conditions that caused the sewer line blockage and/or SSO to occur. The NOV or CDO will require that the discharges causing the sewer line blockage and/or SSO must stop immediately and the user shall take all actions necessary to prevent any future discharges that would cause a sewer line blockage or SSO. Written corrective actions plans are required and the user is held accountable for implementing the correction action plan. If the user fails to achieve compliance or is unresponsive to the requirements of the correction orders, then additional civil and/or criminal actions may be taken.

Ordinance No. 1271 prohibits the use of any chemical or material that will emulsify, suspend or dissolve oil and grease and the use of any microbiological product to metabolize FOG. Pretreatment inspection staff is constantly looking for these products during every restaurant inspection. When a prohibited product is discovered being used, the user is ordered to immediately stop the use of the product and have the product removed from the premises. Failure to comply with these administrative orders may result in additional enforcement actions, including civil and/or criminal actions.

7.9 Grease Interceptor Retro Fits

One of the building requirements for FSEs is to install a grease interceptor. For new construction and tenant improvement projects, interceptor requirements are determined during the City's plan check process. Building

permits cannot be obtained if the user has not agreed to the building requirements for the project.

If an existing restaurant or similar food service facility is determined to be the cause or a contributor to a sewer line blockage and/or SSO and does not have a grease interceptor, the user is required to install an appropriately sized grease interceptor within 90 days. If the existing restaurant or similar facility has a grease interceptor but the device is poorly maintained or is inadequate to treat the type and volume of wastewater from the facility, then the user will be required to replace the existing grease interceptor with a one that is adequate for the intended application.

Any restaurant or similar facility found responsible for the sewer line blockage and/or SSO, will be assessed all costs of cleanup and/or repairs necessary to remove the blockage and/or SSO.

7.10 Training

Pretreatment inspector has knowledge, skills, and abilities that are constantly being challenged and improved. Training of the inspector for FOG issues is critical to insure that the inspector is adequately equipped to respond to restaurant inspection and SSO investigation findings. This training includes:

1. Laws and regulations;
2. Cleaning, degreasing, and microbiological product identification and use;
3. New technology and equipment;
4. New pretreatment methodology;
5. Inspection practices; and
6. Enforcement actions

City Water & Wastewater Department (FOG Control) inspectors have received training in:

1. Pretreatment technologies;
2. Best Management Practices;
3. Regulatory Reporting; and
4. Field sampling

7.11 FOG Control Program Summary

The City's Pretreatment Program Inspectors and Collection System Section work closely to identify, investigate, and correct problems caused by the discharge of FOG to the City's sewer system. Preventive rather than reactive sewer inspection and cleaning combined with FSE inspections are critical to insure the integrity of the City's collection system. Prompt responses to SSOs are necessary to mitigate the effects.
The City's inspectors also work closely with the County Public Health Department to expedite corrective actions by the FSE.

In extreme cases, the city may enlist the services and resources of the California Regional Board Water Quality Control Board to provide additional incentive for correcting water quality and public health concerns.

Our goal is to reduce FOG related incidents each year and to eliminate all FOG related SSO's within 3 years.

7.12 Roles and Responsibilities

The City's Industrial Pretreatment team is responsible for implementing the provision described in the FOG Control Program. Additionally, Pretreatment will review and update the FOG Source Control Program and Enforcement Response Plan (ERP) documentation, as the need arises.

8. SYSTEM EVALUATION AND CAPACITY ASSURANCE

8.1 Introduction

Carollo Engineers completed the most recent Sewer System Study (Study) in November 2006. A complete copy of the Study is included as Appendix G of the SSMP. The data contained in this document is less than 4-year old, and is still relevant and useful in decisions regarding capacity assurance and system reliability.

The purpose of the Study was to supplement the 1994 Sewer Master Plan, developed by NBS Lowry[1]. The primary objectives of the Study were to:

A. Identify the existing and ultimate wastewater flows in the City;
B. Define planning and evaluation criteria for the City's sewer system;
C. Determine the deficiencies in the City's existing sewer system under existing and ultimate wastewater flows;
D. Determine improvements to address the system deficiencies under existing and ultimate wastewater flows; and
E. Prepare a CIP including phasing and cost estimates for the recommended improvements to the City's sewer system.

The Study included an evaluation of the existing and future proposed sewer collection system. (See Section 6.2 - Existing Collection System Analysis and Section 6.3 - Future Collection system Analysis for detailed findings and recommendations regarding system performance and potential deficiencies.)

8.2 Evaluation

The Study identified portions of the collection system, which may be vulnerable to an SSO (mostly during wet weather) due to hydraulic deficiency. Included in the evaluation are estimates of peak flows 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.

[1] NBS Lowry, *Sewer Master Plan* prepared for the City of Banning, March 1994

8.3 Design Criteria

Facility design criteria fall into one of the following wastewater facility components:

- Conveyance Facilities
- Wastewater Treatment Facilities

Carollo Engineers discuss the wastewater facility component in detail in Chapter 3 of the 2006 Study.

8.4 Capacity Enhancement Measures

The City has established a short- and long-term capital improvement program (CIP) to address identified hydraulic deficiencies. The CIP includes project cost estimates, project prioritization, alternatives analysis, and construction schedules.

8.5 Sewer Capacity Updates and Schedules:

The Sewer System Study of 2006 is the most recent update to the Wastewater Master Plan. Data and projections in these reports are generally valid for approximately 10 years. When major population growth occurs or large commercial projects are being considered, these planning documents are critical in making informed decisions regarding sewer system capacity.

The City has design standards and guidelines to ensure adequate capacity. The City's assures that older facilities are upgraded as needed to ensure adequate capacity through the system. The priorities, for upgrade or replacement for sewer infrastructure, are addressed extensively in the 1994 Sewer Master Plan and the Sewer System Study of 2006.

The City Public Utilities Department prepares annual budgets and 5-year Capital Improvement Plans that address short-term and long-term infrastructure needs for sustainability of the wastewater collection system. The City is not currently experiencing capacity-related problems. The City has five (5) continuous flow monitoring stations that provide accurate data regarding the flows in the wastewater system. This data is reviewed frequently to ensure system reliability and to guide future decisions regarding upgrades to the system.

9. MONITORING, MEASUREMENT, AND PLAN MODIFICATIONS

This section addresses SSMP provisions outlined in Section D, 13 (ix) Monitoring, Measurement, and Program Modifications of SWRCB Order No. 2006-0003.

The City Monitoring, Measurement, and program Modifications encompass the following components:

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

9.1 Performance Measures

The indicators that the City will use to measure the performance of its wastewater collection system and the effectiveness of its SSMP are:

- Total number of SSOs;
- Number of SSOs by 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
- Planned vs. actual preventive maintenance activities.

9.2 Performance Measures

The City has limited historical data regarding SSOs and system performance since these are emerging wastewater program requirements. The City's Public Utilities Department (Water & Wastewater Division) will begin compiling data, comparing with existing performance goals, and adjust the SSMP program as needed to ensure continuous improvement, system reliability and sustainability.

10. SSMP PROGRAM AUDITS

This section addresses SSMP provisions outlined in section D, 13 (x) SSMP Program Audits of SWRCB order No. 2006-0003.

The City is required to 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.

10.1 Compliance Summary

The use of program audits is a valuable tool to assess the performance of the elements of the SSMP. The audits will focus on the achievement, year to date (YTD) of established goals: line cleaning, video inspections, service requests, work orders, and SSO responses, mitigation and reporting. The audits will determine if the performance of the Collection System crew resulted in achievement of the stated goals. The audit process identifies deficiencies, recommends corrective actions and monitors annual goal achievements.

10.2 Annual Goals

The annual audit will focus on accomplishments toward the following stated goals:

A. Reducing the frequencies of SSOs in the City's collection system;
B. Reducing damage claims from SSOs;
C. Compliance with all regulatory agency notifications regarding SSOs;
D. Establish and implement an effective FOG Control Program;
E. Create outreach material on SSOs and FOG Control Program Requirements for the City's Web-site; and
F. Ensure adequate Capital funding is available to maintain the sewer infrastructure.

10.3 Roles and Responsibilities

SSMP audits will be conducted by the Public Works Department –Water & Wastewater Division or a designated third party.

10.4 SSMP Audit Categories

As specified in the Order, the SSMP is comprised of eleven (11) elements or subsets of Section D.13 of the Order, as follows:

Element No	Reference Section	Heading
1	D.13.i	Goals
2	D.13.ii	Organization
3	D.13.iii	Legal Authority
4	D.13.iv	Operation and Maintenance Provisions
5	D.13.v	Design and performance Provisions
6	D.13.vi	Overflow Emergency Response Plan
7	D.13.vii	FOG (fats, oils, grease) Control Plan
8	D.13.viii	System Evaluation and Capacity Assurance Plan
9	D.13.ix	Monitoring, Measurement and Program Modifications
10	D.13.x	SSMP Program Audits
11	D.13.xi	Communication Program

Table 10-1 SSMP Audit Categories

This internal audit is focused on the above eleven categories as required by the Order. The evaluation of each element is ranked based upon the measure of audit evidence obtained by observation and from information received from City staff. Compliance rankings are based on audit guidelines and effectiveness. A recommendation is provided when there is enough information to support it.

The format for audit reporting is as follows:

- Order Section/Subsection
- Effectiveness Ranking
  - Complies,
  - Substantial Compliance,
  - Partial Compliance,
  - Marginal Compliance, and
  - Not in Compliance
- Findings
- Reference Information
- Recommendation when appropriate

10.5 SSMP Audit Reports

The following Audit Report includes findings from an independent audit performed by G&G Environmental in June 2015.

CITY OF BANNING

AUDIT REPORT FOR THE SEWER SYSTEM MANAGEMENT PLAN
DECEMBER 2015

99 E. Ramsey St. Banning, CA 92220

AUDIT REPORT FOR THE CITY OF BANNING
SEWER SYSTEM MANAGEMENT PLAN

PREPARED UNDER THE DIRECTION OF
PERRY GERDES WATER/WASTEWATER SUPERINTENDENT

BY
G&G ENVIRONMENTAL COMPLIANCE, INC.

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SUMMARY

In May 2, 2006, the SWRCB adopted Order no. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer System (WDR). Order No. 2006-0003 was superseded by Order No. 2008-0002-EXEC on February 20, 2008. This Order requires that owner of wastewater collection systems with more than a mile of pipeline have in place a Sewer System Management Program (SSMP) to comply with the terms of this Order, which is to reduce the number and severity of Sanitary Sewer Overflows (SSOs); and to audit the program every two years. The SSMP was revised in April 2014 and this Audit is being conducted in June 2016 to meet the biennial audit requirement of the SSMP.

This audit of the City of Banning's (City) SSMP consisted of effectiveness rankings on all 11 elements of the SSMP requirements. The ranking is explained in the *Audit of the SSMP* section and is based on information available referenced to the WDR requirements. All 11 elements were found to be in *compliance* in the effectiveness ranking. Some minor adjustments will be made in the next Revised SSMP scheduled to be completed in July 2015.The findings of this audit will be used to gauge the performance of the next biennial SSMP.

Introduction

In May 2, 2006, the SWRCB adopted Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WDR). Order No. 2006-0003 was superseded by Order No. 2008-0002-EXEC on February 20, 2008, and will be referred to as the Order henceforth. The Order is to create an equitable statewide mechanism to manage all publicly owned wastewater collection agencies with more than a mile of pipeline, to reduce the number and severity of Sanitary Sewer Overflows (SSOs), and to set up a central depository for online reporting of SSOs if and when they do occur.

A principal element of the Order is the requirement that the collection agencies adopt and maintain a management plan for the system, referred to as a Sewer System Management Plan or SSMP.

On July 15, 2009, the City Council adopted the City's SSMP to comply with the Order.

The Order establishes the following goals:

- The SSMP must document the organization's legal authority to achieve the goals of the SSMP as demonstrated through the City ordinances, agreements and other legally binding instruments.
- The SSMP must identify the City's organization and staff responsible for implementing and maintaining the SSMP.
- The SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the City's wastewater conveyance system.

Additionally, the Order requires the City's staff to perform periodic internal audits of the SSMP focusing on evaluating the effectiveness of the SSMP and staffs' compliance with its requirements, as shown in Section D.13(x) of the Order. The internal audits will be performed at least every two (2) years with the audit report kept on file at the City.

The SSMP must be updated every five (5) years, must contain any significant program changes, and be re-certified by the City's Council. To complete the re-certification process, the City's staff must enter the information on the Online SSO Database and mail a hard copy to the State Water Resources Control Board. The due date for re-certification of the SSMP is July, 2016.

In general, the State's audit requirements of the SSMP are extremely complex with many overlapping topics. As described on Page 6, there are 11 major categories in the SSMP and over three dozen subcategories. Additionally, a comprehensive audit program includes evaluation elements such as document control, training, objectives, data management, audit procedures, and results.

This is the second internal audit of the SSMP. Re-approval action is required by the City's Council. After reviewing and sharing the contents of the audit report, staff will create a list of proposed remedies if deficiencies were found to exist, file the report, and begin working to correct the deficiencies, if any.

Audit of the SSMP

As specified in the Order, the SSMP is comprised of eleven (11) elements or subsets of Section D.13 of the Order, as follows:

Element No	Reference Section	Heading
1	D.13.i	Goals
2	D.13.ii	Organization
3	D.13.iii	Legal Authority
4	D.13.iv	Operation and Maintenance Provisions
5	D.13.v	Design and performance Provisions
6	D.13.vi	Overflow Emergency Response Plan
7	D.13.vii	FOG (fats, oils, grease) Control Plan
8	D.13.viii	System Evaluation and Capacity Assurance Plan
9	D.13.ix	Monitoring, Measurement and Program Modifications
10	D.13.x	SSMP Program Audits
11	D.13.xi	Communication Program

This internal audit is focused on the above eleven categories as required by the Order. The evaluation of each element in each category is herewith standardized with effectiveness, the measure of audit evidence obtained from the City staff. Compliance ranking has been based on Order audit guidelines and effectiveness. A recommendation has been provided when there is enough information to support it.

The format for audit reporting is as follows:

- Order Section/Subsection
- Effectiveness Ranking
    - Complies,
    - Substantial Compliance,
    - Partial Compliance,
    - Marginal Compliance, and
    - Not in Compliance
- Findings
- Reference Information
- Recommendation when appropriate

1. Audit of Goals - Order D.13 (i)

Review the SSMP to determine if it complies with the Order by having a goal to provide a plan to manage, operate, and maintain all parts of the City's System.

Effectiveness: Complies.

Findings: The City has established a list of goals in its SSMP that complies with the goals established in the Order.

The City's Goals for the SSMP together with progress to date are as follows:

1. To effectively manage, operate, maintain and improve the City's wastewater collection system.

2. To provide adequate capacity to convey peak flows.

3. To provide notifications and reports to all regulatory agencies in a timely manner.

4. To minimize the frequencies of preventable SSOs throughout the City's collection system.

5. To effectively mitigate the effects of any SSO that may occur.

6. To provide public education to increase awareness of FOG issues and how they can impact the collection system.

Recommendation: None. The City of Banning is in compliance with the Goals requirement of the Order

2. Audit of Organization - Order D.13 (ii)

Review the SSMP to determine if it complies with the Order by having the names of authorized representatives published and update in the SSMP.

Effectiveness: Complies.

Findings: The City has identified and kept updated the names of its authorized representative, management, administration, and maintenance personnel and has shown the chain of communication for reporting SSOs. The Organization Chart is updated and posted on the City's website. Regardless of organizational changes that may occur, SSO response is not affected.

Reference: The City's Organizational Chart, the City's SSMP, *Page 2-3.*
The City's Chain of Command, the City's SSMP, *Page 2.5*.
The City's Chain of Communication for Reporting SSO, City's SSMP, *Page 2-6 Table 2-3*
Concise Contact List In Case of Emergency SSO, City's SSMP *Table 2-1*.

Recommendation: None. The City's Organization and Chain of Command is a "living document" and updated periodically.

3. Audit of Legal Authority - Order D.13 (iii)

Review the SSMP to determine if it complies with the Order by having ordinances and agreements in place and updated to prevent illicit discharges, provide for proper design of upstream facilities, provide right of way and access to the City's collection system, and enforce the City's regulations.

Effectiveness: Complies.

Findings: The City's Council has adopted Ordinances No. 1206 and 1271 which provides the legal authority for the use of the City's Collection Systems.

The City has in place a pretreatment program which requires that significant industrial users (SIU) be properly permitted and required to meet Federal, State and local limits.

Additionally, the City maintains files that document the City's right to access easements.

Reference: The City's Ordinances No. 1206 and 1271.
Discharge Permit Tracking Database.
Easement Documents.

Recommendation: None.

4. Audit of Operation and Maintenance Program - Order D.13 (iv)

Review the SSMP and activities of staff, consultants and contractors to determine compliance with the Order by having (a) an up to date map of the City's Collection system that shows all pipe reaches, manholes, siphons, diversion structures, and pump stations, if any, (b) a routine preventative maintenance program and operations program, rehabilitation and replacement program, (c) operations and maintenance training program, and (e) part inventory program including identification of critical replacement parts.

Effectiveness: Complies

Findings: The City maintains and updates GIS mapping and data tables for the City's collection system and manholes. The maps can be accessed through the City's intranet.

The City Will be purchasing its own CCTV to systematically and routinely CCTV lines. Pipeline condition information is conveyed to engineering if repairs and/or replacements are needed, from which CIPs are generated.

In addition to mandatory standard trainings and certifications, The City's Collections group holds semiannual training.

The City utilizes a Computerized Maintenance Management System (CMMS) that enables timely maintenance scheduling, adequate parts inventories.

Reference: City's SSMP,

Recommendation: None.

5. Audit of Design and Performance Provisions - Order D.13.v

Review the SSMP to determine if it complies with the Order by having design and construction standards and specifications for installation of new facilities, including coverage for testing of new facilities prior to acceptance.

Effectiveness: Complies

Findings: The SSMP contains reference to the City's Developer Handbook & Standard Drawings, for new or upgrading facilities placing the element in compliance. In addition, reference is made to other approved testing methods, such as ASTM (formerly known as American Society for Testing and Materials), to ensure that the infrastructure meets the design and performance provisions.

Reference: City's Standard Drawings Water & Sewer Facilities These drawings include the following:

Typical Plan layout Sewer System
Sewer Lateral "Normal Cut"
Precast Concrete Manhole
Drop Manhole
Manhole Cover and Frame

Recommendation: None.

6. Audit of Overflow Emergency Response Plan - Order D.13.vi

Review the SSMP to determine if it complies with the Order by having an overflow emergency response plan that includes (a) proper notification procedures, (b) a program that assures proper response to all overflows, (c) procedures that ensure prompt notification of regulatory agencies and other affected entities, (d) proper training for staff and contractors named in the response plan, (e) procedures to address traffic control and crowd control, and, (f) implementation of steps to prevent SSOs from reaching waters of the United States.

Effectiveness: Complies.

From June, 2011 to June, 2016, there were no SSOs,

Reference: *Overflow Emergency Response Plan, City's SSMP*
SSO Response Flow Chart, city's SSMP, Page 6-31
Spill Response Team, City's SSMP, Page 6-4

Recommendation: None.

7. Audit of FOG (Fats, Oils and Grease) Control Plan- Order D.13.vii

Review the SSMP to determine if it complies with the Order by having a FOG Control plan with (a) a public education element, (b) FOG disposal facilities identified, (c) ordinances, rules and regulations to prevent FOG, (d) requirements to install Oil & Grease interceptors together with standard drawings for interceptors, owner maintenance requirements, owner record keeping requirements and owner reporting requirements, (e) inspection authority and staffing, (f) FOG mapping for the City's collection system impacted by FOG.

Effectiveness: Complies.

Reference: The City's Ordinances No. 1206 and 1271, the City's SSMP, Fats, Oils and Grease Control Program

Recommendation: None.

8. Audit of the System Evaluation and Capacity Assurance Plan- Order D.13.viii

Review the SSMP to determine if it complies with the Order by having a Capital Improvement Plan (CIP) that considers (a) Evaluation of those portions of the City's collection system that may experiencing SSO discharges due to hydraulic deficiency, (b) Design Criteria commensurate with the City's collection system,(c) Capacity Enhancement Measures and steps to address short term and long

term CIP goals and an implementation schedule, and (d) Schedule for completion of the necessary things-to-do that were developed in items D.13.viii (a) - (c) above.

Effectiveness: Complies.

Findings: The City's staff complies with the requirements of the Order by operating a computer models for its System Evaluation and Capacity Assurance Plan. The primary component of the plan, as directed in the City's Wastewater Master Plan

The City has established steps to establish the short and long-term capital improvement programs (CIP) to address identified hydraulic deficiencies. The CIP includes project cost estimates, project prioritization, alternatives analysis, and construction schedules. These can be found in The City's Wastewater Master Plan.
The City works under annual and long-range plans that have proven effective and the City is not currently experiencing capacity-related problems. Indications of possible capacity problems seen by the Environmental Control Section are brought to the attention of the Engineering Department for further evaluation.

Reference: The City's SSMP and Wastewater Master Plan.

Recommendation: None.

9. Audit of the Monitoring, Measurement, and Program Modification - Order D.13.ix.

Review the SSMP to determine if it complies with the Order by (a) maintaining relevant information that can be used to establish and prioritize appropriate SSMP activities, (b) monitoring the implementation and, where appropriate, measure the effectiveness of each element of the SSMP, (c) assessing the success of the preventative maintenance program, (d) updating program elements, as appropriate, based on monitoring or performance evaluations, and (e) identifying and illustrating SSO trends, including frequency, location and volume.

Effectiveness: Complies.

Findings: Compliance with this component of the SSMP has been demonstrated by procedures performed by the various departments. The Public Works Department and the Environmental Compliance Section will perform follow up debriefings to assess the success or failure of the response and mitigation efforts to implement improvements

Reference: The City's SSMP

Recommendation: None.

10. Audit of the SSMP Program Audits - Order D.13.x.

As a part of the SSMP, the City shall conduct periodic audits. At a minimum these audits must occur every two years and a report must be prepared and kept on file. These audits shall focus on the effectiveness of the SSMP, compliance with Order requirements, identification of any deficiencies and steps to correct them.

Effectiveness: Complies.

Findings: The City has embarked on this audit of its SSMP with timeliness to allow the auditor adequate time to investigate, gather evidence, analyze and then report effectiveness and findings, and finally, to make recommendations when appropriate. The audit is due by July, 2015. The next biennial audit will be due by July, 2017. The SSMP must be re-certified by July, 2016 after updating the SSMP with elements recommended by the 2015 audit together with any program changes implemented by the City.

From June, 2011 to June, 2016, there were no SSOs and they were located within the City's area. Table 1 summarized the SSO events.

Table 1 – SSO events

SSO Event	Date of SSO	SSO Category	Spill Volume (Gal)	System	Cause
0					

Lessons learned from an SSO will trigger proactive actions to eliminate similar events.

Reference: The City's SSMP

Recommendation: None.

11. Audit of the Communication Program - Order D.13.xi.

Review the activities of staff to determine if they have complied with the Order by (a) communicating the performance of the SSMP with the public, and (b) providing the public the opportunity to provide input.

Effectiveness: Complies.

Findings: Order requirements are complex and developing the first SSMP required comments and input from many stakeholder. After this Audit the SSMP will uploaded to the City's website for general public review.

With the completion of each audit, the City's staff will share the audit findings by making the report available to the general public by posting on the City's website. As noted in the Order, the SSMP Audit is the mechanism to be used to measure SSMP performance and the best document for communicating performance.

The general public will have an opportunity to provide input with the completion of each audit every two years and certification every five years as required by the Brown Act (public notice requirements).

Reference: The City's SSMP,

Recommendation: It is recommended after each audit that, the City's staff develop an implementation plan to address any deficiencies identified during the audit. Progress can then be acknowledged with the next audit or certification.

11. COMMUNICATION PROGRAM

The City's Communication program addresses the mandatory SSMP provision outlined in Section D, 13 (xi) Communication program of SWRCB Order No.2006-0003.

The City has several means to communicate the elements of the SSMP to the public. These are through the adoption process by City Council resolution, bill stuffers, the City's website, BMP poster distribution to food service establishments, personal contact by collection crew and Pretreatment Program personnel.

11.1 Direct Mailings

The City occasionally mails pertinent information to homeowners and businesses related to City services. The City anticipates placing the FOG brochure and private lateral sewer policy on the City's web site and at public reception counters at various locations in the City.

11.2 City Web Site

The City's web site (www.ci.Banning.ca.us) will be used to communicate the SSMP, FOG Control Program, and other wastewater related guidance documents and policies. The SSMP, Ordinance, Enforcement Response Plan, and the Fats, Oil, and Grease (FOG) program may be available for public review, which may also contain feedback opportunities for the public to make comments about the City's wastewater services.

11.3 Personal Contact

The City's collection crew responds to all SSOs and is the first means of communication regarding prevention of SSOs and preventive maintenance for the homeowner and business owner. If a residential lateral is the cause of the SSO, then a copy of the City's private lateral sewer policy is given to the homeowner and an explanation of what needs to be done to correct the problem. The homeowner then calls a private plumber to make the necessary repairs or corrections. As a courtesy, City crews will clean the sewer line that services the area to ensure that there are no obstructions causing the private lateral problem.

The City's Pretreatment Services interacts with the commercial and industrial businesses, including restaurants. Inspections are conducted at restaurants to ensure that grease interceptors, sewer laterals, and outdoor areas are properly maintained. The inspectors use the inspection as an opportunity to communicate laws, regulations, and policies that affect the industry or commercial business. These laws include the FOG program, NPDES Storm Water Permit requirements, the SSMP, and good housekeeping practices. The inspectors are able to deliver program information in the form of brochures and other printed material, in both English and Spanish.

11.4 City's After Hours Call Center

After hours, emergencies are reported to the City's Police Department who in turn contacts designated on-call staff and supervisors. The City's Web site also includes Customer Service phone numbers for each department. It is anticipated that SSO reporting instructions will be added to the web site upon approval of the SSMP by the City.

12. SSMP COMPLETION AND CERTIFICATION

The City Council has reviewed and approved the attached SSMP. (Attach a copy of the Council Minutes, adopted Order etc.) The Director of Public Works Water and Wastewater Division will certify this adoption and notify the State of California Water Resources Control Board through the electronic certification format provided in the CIWQS reporting system.

13. APPENDICES

APPENDIX A – REGULATORY PERMITS

APPENDIX A-1

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

State Water Resources Control Board Order No. 2006-0003

APPENDIX A-2

MONITORING & REPORTING PROGRAM (MRP)

State Water Resources Control Board Order No. 2006-0003

APPENDIX A-3

AMENDED STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

State Water Resources Control Board Order No. WQO 2008-0002 EXEC

APPENDIX A-4

RIVERSIDE COUNTY FLOOD CONTROL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT

State Water Resources Control Board Order NO. R8-2002-0012

APPENDIX B

CITY OF BANNING – NOTICE OF INTENT

APPENDIX C

CITY OF BANNING WASTEWATER RULES AND REGULATIONS
ORDINANCE NO. 1206
MUNICIPAL CODE SECTION 13.08

CITY OF BANNING WASTEWATER RULES AND REGULATIONS
(AMENDMENTS TO ORDINANCE NO. 1206)
ORDINANCE NO. 1271

APPENDIX D

CITY OF BANNING
WASTEWATER SYSTEM STANDARD DRAWINGS

APPENDIX E

CITY OF BANNING
WASTEWATER SSMP FORMS

APPENDIX F

SEWER SYSTEM STUDY