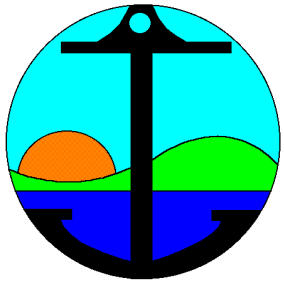
CITY OF PITTSBURG



Sewer System Management Plan

August 31, 2008

Last Update

December 4, 2019

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Introduction

Background

This Sewer System Management Plan (SSMP) has been prepared in compliance with the State Water Resources Control Board (SWRCB) Order 2006-0003: Statewide General Waste Discharge Requirements for Sanitary Sewer System (GWDR), as revised by Order No. WQ 2008-0002.EXEC on February 20, 2008. The GWDR prohibits sanitary sewer overflows (SSOs) and requires reporting of SSOs using a new statewide electronic reporting system.

This initial SSMP has been prepared by the City of Pittsburg (City) with assistance from Larson Consulting.

Organization of SSMP

The structure of this document follows the section numbering and nomenclature used in the GWDR. The SSMP includes eleven sections, as follows:

I. Goals
II. Organization
III. Legal Authority
IV. Operation and Maintenance Program
V. Design and Performance Provisions
VI. Overflow Emergency Response Plan
VII. Fats, Oils and Grease (FOG) Control Program
VIII. System Evaluation and Capacity Assurance Plan
IX. Monitoring, Measurement, and Program Modifications
X. SSMP Audits
XI. Communication Program

System Overview

The City's sanitary sewer system serves a population of approximately 63,000 in a 15.5 square mile service area. The sanitary sewer system facilities include approximately 161 miles of gravity sewers and two small pump stations. Wastewater is discharged into the Delta Diablo Sanitation District system for treatment and disposal. The City is responsible for maintaining the lower laterals.

Definitions, Acronyms, and Abbreviations

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

Calendar Year (CY)

California Integrated Water Quality System (CIWQS) - Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system. The electronic reporting requirement became effective on May 2, 2007 for Region 2.

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

City - Refers to the City of Pittsburg.

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

Delta Diablo Sanitation District (District or DDSD)

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.

First Responder – Refers to the City employee who provides the City's initial response to a sewer system event.

Fiscal Year (FY)

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

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

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

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

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

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

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

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

Lateral - See sewer service lateral.

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

Lower Lateral – Refers to the portion of the sewer service lateral between the property line and the public sewer

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

Monitoring, Measurement, and Program Modifications (MMPM)

National Pollution Discharge Elimination System (NPDES)

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

Operation and Maintenance (O&M)

Overflow Emergency Response Plan (OERP)

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

Regional Water Quality Control Board (RWQCB) - Refers to the San Francisco Bay Regional Water Quality Control Board.

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

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

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

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

Sanitary Sewer System - Refers to the portion of the sanitary sewer facilities that are owned and operated by the City of Pittsburg.

Sensitive Area – Refers to areas where an SSO could result in a fish kill or pose an imminent or substantial danger to human health.

Sewer Service Lateral - Refers to the piping that conveys sewage from the building to the City's sewer system. See also Lower Lateral.

Sewer System – See Sanitary Sewer System.

Sewer System Management Plan (SSMP)

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

Surface Waters – See water of the State.

System Evaluation and Capacity Assurance Plan (SECAP)

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

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

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

References

New Requirements for Preparing Sewer System Management Plans, California Regional Water Quality Control Board San Francisco Bay Region letter to Sewer System Authorities, July 7, 2005 (www.cwea.org/conferences/sso/Reg2Letter-SSMP0705.pdf).

Sewer System Management Plan (SSMP) Development Guide, San Francisco Bay Regional Water Quality Control Board in cooperation with Bay Area Clean Water Agencies, July 2005 (www.swrcb.ca.gov/rwqcb2/download/).

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

Monitoring and Reporting Program 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, State Water Resources Control Board, May 2, 2006 (www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2008/wqo/wqo2008_0002_exec.pdf).

State Water Resources Control Board Monitoring and Reporting Program No. 2006·0003-DWQ (as revised by Order No. WQ 2008-0002.EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, California State Water Resources Control Board, February 20, 2008 (www.cwea.org/pdf/2008-0002-EXEC.pdf).

Section 1. Goals

1.1. Introduction

This section of the SSMP presents the City's goals for the management, operation, and maintenance of its sanitary sewer system.

1.2. Regulatory Requirements for Goals Element of SSMP

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

1.2.1. RWQCB Requirement

The goal of the SSMP is to develop goals to manage, operate, and maintain all parts of its collection system. The goals should address the provision of adequate capacity to convey peak wastewater flows, as well as a reduction in the frequency of sanitary sewer overflows (SSOs) and the mitigation of their impacts.

1.2.2. GWDR Requirement

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

1.3. SSMP Goals

The City's goals are:

1. To properly manage, operate, and maintain all portions of the City's wastewater collection system.
2. To provide adequate capacity to convey the peak wastewater flows. Adequate capacity, for the purposes of this SSMP, is defined as the capacity to convey the peak wastewater flows that are associated with the design storm event.
3. To minimize the frequency of SSOs.
4. To mitigate the impacts that are associated with any SSO that may occur.
5. To meet all applicable regulatory notification and reporting requirements.

Section 2. Organization

2.1. Introduction

The intent of this section of the SSMP is to identify City staff who are responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements. This section also includes the designation of the Authorized Representative to meet SWRCB requirements for completing and certifying spill reports.

2.2. Regulatory Requirements for Organization Element of SSMP

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

2.2.1. RWQCB Requirement

The SSMP must identify staff (names and phone numbers) responsible for implementing measures outlined in the SSMP, including management, administration, and maintenance positions. Identify the chain of communication for reporting and responding to SSOs.

2.2.2. GWDR Requirement

The SSMP must identify:

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

2.3. Organization

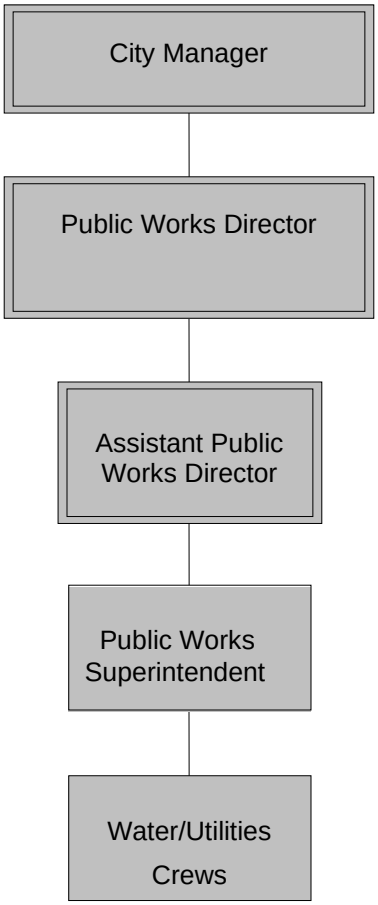
The organization chart for the management, operation, and maintenance of the City's wastewater collection system is shown on Figure 2-1.

2.4. Authorized Representative

The City's Authorized Representatives in all wastewater collection system matters is the Assistant Public Works Director. The Assistant Director are authorized to submit verbal, electronic, and written spill reports to the RWQCB, SWRCB, Contra Costa County Health Services Agency, and OES. They are the City's designated LRO, and are authorized to certify electronic spill reports submitted to the SWRCB.

The Public Works Superintendent/Water Utilities are authorized to submit verbal, electronic, and written spill reports to the SWRCB, RWQCB, County Health Agency, and OES. The Public Works Superintendent/Water Utilities is authorized to act as the City's LRO in the Directors' and Assistant Directors' absence.

Figure 2-1: Organization Chart and SSO Reporting Chain of Communication



2.5. Responsibility for SSMP Implementation

The Assistant Public Works Director is responsible for developing, implementing, and maintaining all elements of the City's SSMP.

Other City Staff responsible for developing, implementing, and maintaining specific elements of the City's SSMP, along with their job titles and contact information, are shown in Appendix 2-A.

2.6. SSO Reporting Chain of Communication

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

Appendix 2-A: SSMP Development, Implementation, and Maintenance Responsibilities

Name	Job Title	Phone Number	SSMP Responsibility	Section
Hilario Mata	Assistant Public Works Director	(925) 252-4951	Maintain SSMP	All
Dick Abono	City Engineer	(925) 252-4930	O&M Program – map updates *	4
Hilario Mata	Assistant Public Works Director	(925) 252-4951	Legally Responsible Official (LRO)	All
Delta Diablo Sanitation District		(925) 756-1920	FOG Source Control	Table 7.1
Dick Abono	City Engineer	(925) 252-4930	Standards - FOG reduction/ plan review/ construction inspection/ enforcement actions/ CIP	Table 7.1
Hilario Mata	Assistant Public Works Director	(925) 252-4951	O&M - FOG pipeline cleaning / Public Information	Table 7.1

* Maps to be updated at least annually

Section 3. Legal Authority

3.1. Introduction

This section of the SSMP presents the City's legal authority to comply with the SSMP requirements, as provided in its Municipal Code and agreements with other agencies.

3.2. Regulatory Requirements for Legal Authority Element of SSMP

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

3.2.1. RWQCB Requirement

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

3.2.2. GWDR Requirement

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

a) Prevent illicit discharges into its wastewater collection system (examples may include infiltration and inflow (I/I), storm water, chemical dumping, unauthorized debris and cut roots, etc.);

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

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

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

e) Enforce any violation of its sewer ordinances;

f) Authority to inspect grease producing dischargers; and

g) Authority to enforce sewer-related ordinances.

3.3. Municipal Code

The *Pittsburg Municipal Code* describes the City's current legal authorities. The City has adopted the California Plumbing Code (CPC) which also provides a basis for the City's legal authorities. The City's legal authorities are summarized on Table 3-1.

Table 3-1: Legal Authority

Requirement	Legal Authority Reference	Meets GWDR Requirements?
General		
Prevent illicit discharges into the wastewater collection system	Municipal Code 13.20.094	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	Municipal Code 13.20.090	Yes
Require that sewers and connections be properly designed and constructed	CPC Chapter 7 Parts 1 &2	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	CPC Section 103.5.1	Yes
Laterals		
Clearly define City responsibility	Municipal Code 13.26.020 13.26.030	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City	Municipal Code 13.20.080	Yes
Control infiltration and inflow (I/I) from private service laterals	CPC Section 714.1	Yes
FOG Source Control		
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements	Municipal Code 13.20.050	Yes
Authority to inspect grease producing facilities	Municipal Code 13.20.080	Yes
Enforcement		
Enforce any violation of its sewer ordinances	Municipal Code 1.16 CPC Section 103.1 & 102.5.1	Yes

There are two areas where the City's legal authority originally did not meet the requirements of the GWDR. They were:

- Prevent illicit discharges into the wastewater collection system
- Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City.

The City amended its Municipal Code to provide this legal authority on April 5, 2010.

The City also provided Delta Diablo Sanitation District with the legal authority for the District to permit and inspect FOG producing facilities within the City's service area. The City amended its Municipal Code to provide this legal authority on April 5, 2010.

Section 4. Operations and Maintenance Program

4.1. Introduction

This section of the SSMP provides an overview of the City's sewer system operations and maintenance program. It is also intended to provide a checklist to support future SSMP audits.

4.2. Regulatory Requirements for Measures and Activities (O&M) Element of SSMP

4.2.1. RWQCB Requirement (Measures and Activities):

a) Maintain up-to-date maps of the wastewater collection system facilities

b) Allocate adequate resources for the operations, maintenance and repair of the collection system

c) Prioritize preventive maintenance activities

d) Identify and prioritize structural deficiencies and implement a program of short-term and long-term actions to address them

e) Provide contingency equipment to handle emergencies, and spare/replacement parts intended to minimize equipment/facility downtime

f) Provide training on a regular basis for staff in collection system operations, maintenance, and monitoring

g) Implement an outreach program to educate commercial entities involved in sewer construction or maintenance about the proper practices for preventing blockages in private laterals. This requirement can be met by participating in a region-wide outreach program.

4.2.2. GWDR Requirement (Operations and Maintenance):

The summarized requirements for the Operations and Maintenance Program are:

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

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

3) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and

replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;

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

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

4.2.3. Organization of Section

The majority of the RWQCB and GWDR requirements for the Operations and Maintenance Program element of the SSMP are in agreement. The following presents the GWDR requirements first. The RWQCB requirements that are not satisfied by the response to the GWDR requirements follow at the end of this section.

4.3. Collection System Mapping

The City has a Geographical Information System (GIS) that includes the information for its wastewater collection system assets. The City also has information in its GIS for its storm drainage system. The GIS information is available to appropriate City staff.

The field crews use hard copy maps that are produced using the GIS. The hard copy maps are updated annually. Corrections that are identified by the field crews are entered on a single map set that is maintained in the office. Corrections and new facilities are incorporated into the maps during the annual update.

4.4. Preventive Maintenance

The elements of the City's sewer system O&M Program include proactive, preventive, and corrective maintenance of gravity sewers, and periodic inspection and preventive maintenance for the pump station. The details of the City's O&M programs are described in this section.

4.4.1. Gravity Sewers

The City proactively cleans its sewer system every three years, and it preventively cleans sewers with a history of problems every 1, 2, 3, 6, or 12 months. Two sewer cleaning crews are assigned to these activities.

The City uses a Cues CCTV truck for both periodic condition assessment and for follow-up on SSO events.

The City corrects problems identified by the sewer cleaning crews or CCTV with its own crews or by contract, depending on the project's requirements. Repairs are completed in priority order.

The wastewater collection system staff maintains a list of known structural deficiencies. This list is maintained in priority order. High priority structural

deficiencies are repaired as soon as possible by the City's sewer repair crew or by an outside contractor on an as-needed basis.

Gravity sewer maintenance is currently scheduled using maps and lists of "chronic" maintenance line segments. Completed gravity sewer maintenance is recorded using work orders. The City has selected and implemented a computerized maintenance management system (CMMS) with implementation started in 2007. The CMMS is used to track work completed, which is recorded in the field using work order forms.

The City's standard operating procedure for sewer cleaning is included as Appendix 4-A.

4.4.2. Pump Stations

The City conducts a weekly operational inspection of its one pump station which serves approximately 200 residences. The wet well is cleaned every 4 months. The mechanical and electrical equipment preventive maintenance is scheduled annually.

4.4.3. Non-Routine Maintenance

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

4.5. Rehabilitation and Replacement Plan

The City is planning on annual projects over the next five years to assess the condition of its gravity sewers using CCTV. These projects are shown in Appendix 4-B. The information gathered during the condition assessment will be used to select gravity sewers for repair/rehabilitation/replacement.

The City has an annual sewer rehabilitation and replacement program to rehabilitate or replace the portions of its wastewater collection system where conditions warrant. The projects that are included in the City's Capital Improvement Program are shown in Appendix 4-B.

The funds that support the Capital Improvement Program come from the City's Sewer Fund. The Sewer Fund is an enterprise fund and sewer fees are established to meet projected needs.

4.6. Training Program

4.6.1. City Staff

The City uses a combination of in-house classes; on the job training; and conferences, seminars, and other training opportunities to train its wastewater collection system staff.

The City encourages its wastewater collection system employees to be certified in Collection System Maintenance by the California Water Environment Association.

There are over 10 employees holding certificates. The certification process requires employees to demonstrate that they have participated in 12 hours or more of training every two years in order to renew their certificates.

4.6.2. Staff Contracted for City Projects

The City's contract language requires contractors working in the wastewater collection system to provide training for their employees.

4.7. Equipment and Parts Inventory

The list of the major equipment that City uses in the operation and maintenance of its sewer system is included in Appendix 4-C.

The City has a Replacement Parts List (Appendix 4-D). The list will be updated semi-annually.

4.8. Resources

The City's Public Works Department resources that are allocated to the maintenance of the collection system facilities are shown on Table 4-1. As stated above, repairs are completed by City Staff or by contract. The major equipment to support the maintenance activities is listed in Appendix 4-C. The allocated resources exceed the projected workload of 4.6 FTEs.

Table 4-1: Collection System Maintenance Resources

Position/Activity	FTEs
Public Works Assistant Director	0.2
Public Works Superintendent /Water Utilities	0.5
Public Works Lead Worker	1.0
Sewer Cleaning Crews	4.0
Pump Station Maintenance	0.1
Total	5.8

The City's Capital Improvement Program allocates approximately $1.5 million per year for condition assessment and rehabilitation/replacement projects. This equates to an investment of approximately 1% of the replacement value of its collection system facilities per year. This value compares favorably to the investment being made by other collection system agencies.

4.9. Outreach Program

The City intends to participate in the Bay Area Clean Water Agencies region-wide outreach program.

Appendix 4-A: Standard Operating Procedure for Sewer Cleaning

Purpose

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

Goal

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

Required Equipment and Tools

1. Personal Protective Equipment (hardhat, steel toe boots, gloves, eye/face protection, hearing protection)
2. Calibrated gas detector
3. Proper safety cones/barricades/flagging/signs or other traffic control devices
4. Confined space entry equipment – tripod, harness, and ventilation blower
5. Sanitary sewer system map book
6. Combo (jet rodder/vacuum) truck
7. Warthog sewer cleaning nozzle
8. Six-wire skid ("proofer") in sizes that will be encountered during the day
9. Debris traps in the sizes that will be encountered during the day
10. Manhole hook or pickaxe
11. Measuring wheel
12. Disinfectant

Required Forms

1. Cleaning Work Order
2. Daily Truck Report Form
3. Damage Report Form

Procedures for Supervisor

1. Assign crew's work at least three days in advance, when possible.
2. Determine if there are any special traffic conditions that need to be addressed for the assignment. For heavy traffic areas, plan traffic control in advance so that ample traffic control devices and personnel can be transported to the

jobsite. Give at least 24 hour notice to any business that will be adversely impacted by traffic control or the cleaning operations.

3. Identify the schedule for cleaning. When possible, cleaning operations should be conducted during normal business hours. When in residential areas, cleaning operations should not begin before 8:00AM nor continue after 5:00PM unless there is an emergency that warrants working outside of these hours. Door hangers shall be put out the day prior to any cleaning in a residential area when the cleaning will occur before 8:00AM or after 5:00PM.

Procedures for Sewer Cleaning Crew

Prior to Leaving the Yard

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

At the Jobsite

1. Wear proper personnel protective equipment (PPE).
2. Fill the water tank at or near the first jobsite.
3. Determine and confirm location of upstream and downstream manholes (use street addresses, if possible).
4. Look for any overhead utilities that may come into contact with the vacuum boom during the cleaning operation.
5. Set up proper traffic control by placing traffic signs, flags, cones and other traffic control devices.
6. Move the cleaning unit into the traffic control so that the hose reel is positioned over the manhole.
7. Open the manhole or insert detector probe through opening and use the gas detector to determine if it is safe to proceed with the cleaning operation.
8. Install the 45 degree or Warthog nozzle on the hose.

Cleaning Operation

1. Insert the debris trap.
2. Start the auxiliary engine.
3. Remove debris from the manhole using vacuum unit.

4. Lower the hose, with a guide or roller to protect the hose, into the manhole and direct it into the sewer to be cleaned.
5. Start the high pressure pump and set the engine speed to provide adequate pressure for the sewer cleaning operation.
6. Open the water valve and allow the hose to proceed up the sewer. The hose speed should not exceed 3 feet per second.
7. Allow the hose to proceed 25% of the length of the sewer and pull the hose back.
8. Observe the nature and the quantity of debris pulled back to the manhole.
9. If there is little or no debris, allow the hose to proceed to the upstream manhole.
10. If there is moderate to heavy debris, clean the remaining portion of the sewer in steps not to exceed 25% of the length of the sewer.
11. Open the upstream manhole and verify that the nozzle is at or past the manhole.
12. The sewer has been adequately cleaned when:
    - Successive passes with a cleaning nozzle do not produce any additional debris, and
    - The sewer is able to pass a full size, six-wire skid ("proofer") for its entire length.
    - Determine the nature and quantity of the debris removed during the cleaning operation. Use the following codes to report the nature and quantity of debris.

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

13. Remove the debris from the manhole using the vacuum unit.
14. Rewind the hose on the reel.
15. Remove the debris trap.
16. Clean the mating surface and close the manhole. Ensure that the manhole is properly seated.

17. Enter the results on the Work Order.
18. Move the cleaning unit, break down and stow the traffic controls.
19. Fill water tank before going to next job site.
20. Proceed to the next cleaning jobsite.

At the End of the Day

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

Sewer Maintenance in Back Yards Safety Operations Procedure

1. Minimum of three-person crew for pulling hose.
2. Do not pressurize hose until at least 4 feet of the lead hose is in the sewer line.
3. Do not pressurize hose until you communicate with crew and you get the okay from both co-workers.
4. Operator always has to be by the sewer combo truck or jet rodder .
5. If the hose gets stuck and a crew goes to the upstream manhole or rodding inlet to investigate, remove back engine inline fuse to disable water system, turn truck off, and remove the keys. (Operator or Maintenance Aide always need to be by the truck.)

Appendix 4-B: Capital Improvement Program

Project Number	Project Title	Estimated Project Costs	Current Funded Projects	FY 2019-2020	FY 2020-2021	FY 2021-2022	FY 2022-2023	FY 2023-2024
SS-2	2022/23 Sewer Replacement/ Rehabilitation Program (Central Addition Phase I)	$2,900,000					400,000	2,500,000
SS-20	P/A Highway Sewer Line Improvements	$605,000						
SS-23	Highway 4 Trunk Line Relief (Segment A) & Bailey Rd Sewer Main	$3,404,000	200,000					
SS-29	Highway 4 Trunk Line Relief (Segment B)	$1,554,000						
SS-30	2014/15 Sewer/Water Replacement/Rehabilitation Program	$10,000,000	10,000,000					
SS-34	2016/17 Sewer Replacement/Rehabilitation Program	$12,927,500	11,627,500	1,300,000				
SS-36	2020/21 Sewer Replacement/Rehabilitation Program	$2,100,000	2,100,000		500,000	1,600,000		
TOTALS		$33,490,500	$23,927,500	$1,300,000	$500,000	$1,600,000	$400,000	$2,500,000

Appendix 4-C: Major Sewer System Equipment Inventory

Inventory Date November 14, 2019

Inventory/Condition Checked by Greg Justice

Equipment Number	Major Equipment Type	Year Purchased
561	Combination Hydroflush Truck	2016
562	Combination Hydroflush Truck	2018
563	Combination Hydroflush Truck	2014
564	Cues CCTV Tuck	2017
990	6'' portable pump	2010
981	Bobcat Mini Excavator	2009
585	F-750 Dump truck	2008

Appendix 4-D: Critical Sewer System Replacement

Last Inventory Date 11/14/2019

Inventory/Condition Checked by Jorge Esparza

Part Description	Minimum number	Number in Inventory	Location
10'' Plastic to plastic couplings	4	6	Sewer shop
10'' Clay to plastic couplings	4	4	Sewer shop
10'' AC to plastic couplings	4	6	Sewer shop
10'' Sewer wye	2	4	Sewer shop
8'' Plastic to plastic couplings	4	13	Sewer shop
8" Clay to plastic couplings	4	20	Sewer shop
8'' AC to plastic couplings	4	5	Sewer shop
8" Sewer wye	4	5	Sewer shop
6" Plastic to Plastic couplings	4	10	Sewer shop
6" Clay to plastic couplings	8	24	Sewer shop
6" AC to plastic couplings	8	35	Sewer shop
6" Plastic to plastic couplings	8	10	Sewer shop
4" Plastic to plastic couplings ABS	4	4	Sewer shop
6" Sewer wye	6	19	Sewer shop
4" Clay to plastic couplings	10	14	Sewer shop
4" AC to plastic couplings	10	25	Sewer shop
4" Sewer popper caps	12	16	Sewer shop
10" Sewer pipe SDR 26	20'	90'	Pipe rack
8" Sewer pipe SDR 26	15'	160'	Pipe rack
6" Sewer pipe SDR 35	20'	150'	Pipe rack
4" Sewer pipe SDR 35	20'	80'	Pipe rack

Section 5. Design and Performance Provisions

5.1. Introduction

This element of the SSMP presents the City's Design and Construction Standards.

5.2. Regulatory Requirements for Design and Construction Standards Element of SSMP

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

5.2.1. RWQCB Requirement

The Collection System Agency shall identify minimum design and construction standards and specifications for the installation, rehabilitation and repair of new and existing sewer systems. The Collection System Agency must evaluate if the existing design standards are appropriate and up to date. If the Collection System Agency believes its current standards are appropriate, the Collection System Agency can refer to existing documentation.

The Collection System Agency shall identify procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances; and for rehabilitation and repair projects. As with design and construction standards, the SSMP should refer to existing documentation if standards for inspection and testing are already in place.

5.2.2. GWDR Requirement

The Enrollee must have design and construction standards and specifications for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems.

The Enrollee must also have procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances; and for rehabilitation and repair projects.

5.3. Standard Specifications for Wastewater Facilities

The City's standards pertaining to the design, construction, and inspection of gravity sewer systems, sewer force mains, and other facilities to be operated and maintained by the City are included in the current version of the Central Contra Costa Sanitary District Standard Specifications (Design Standards). The intent of the Design Standards is to provide design engineers with information on the requirements and preferences for facilities to be conveyed to the City for ownership, operation, and maintenance. The Design Standards provide information on the type of facilities and equipment that are acceptable to the City. The Design Standards also cover the requirements for inspection and testing prior to acceptance by the City. Standards for the repair and rehabilitation of existing facilities are also addressed in the Standard Specifications.

Section 6. Overflow Emergency Response Plan

6.1. Introduction

6.1.1. Purpose

The purpose of the Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for City personnel to follow in responding to, cleaning up, and reporting SSOs that may occur within the City's service area.

6.2. Regulatory Requirements for OERP Element of SSMP

6.2.1. RWQCB Requirement

The collection system agency must develop an overflow emergency response plan that provides procedures for SSO notification, response, reporting, and impact mitigation.

6.2.2. GWDR Requirement

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

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

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

(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;

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

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

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

6.3. Goals

The City's goals with respect to responding to SSOs are:

- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO; and
- Meet the regulatory reporting requirements.

6.4. SSO Detection

The processes that are employed to notify the City of the occurrence of an SSO include: observation by the public, receipt of an alarm, or observation by City Staff during the normal course of their work.

6.4.1. Public Observation

Public observation is the most common way that the City is notified of blockages and spills. Contact information for reporting sewer spills and backups are in the phone book and on the City's website: www.ci.pittsburg.ca.us. The City's telephone number for reporting sewer problems is (925) 252-4936.

6.4.1.1. *Normal Work Hours*

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

The information regarding the service call is documented in a log book.

6.4.1.2. *After Hours*

Service calls are forwarded to the Answering Service who receives the call, takes the information from the caller, and communicates it to the City's Public Works Standby Crew.

The Answering Service confirms receipt of the service call with the pertinent information received from the caller in a FAX sent to the City.

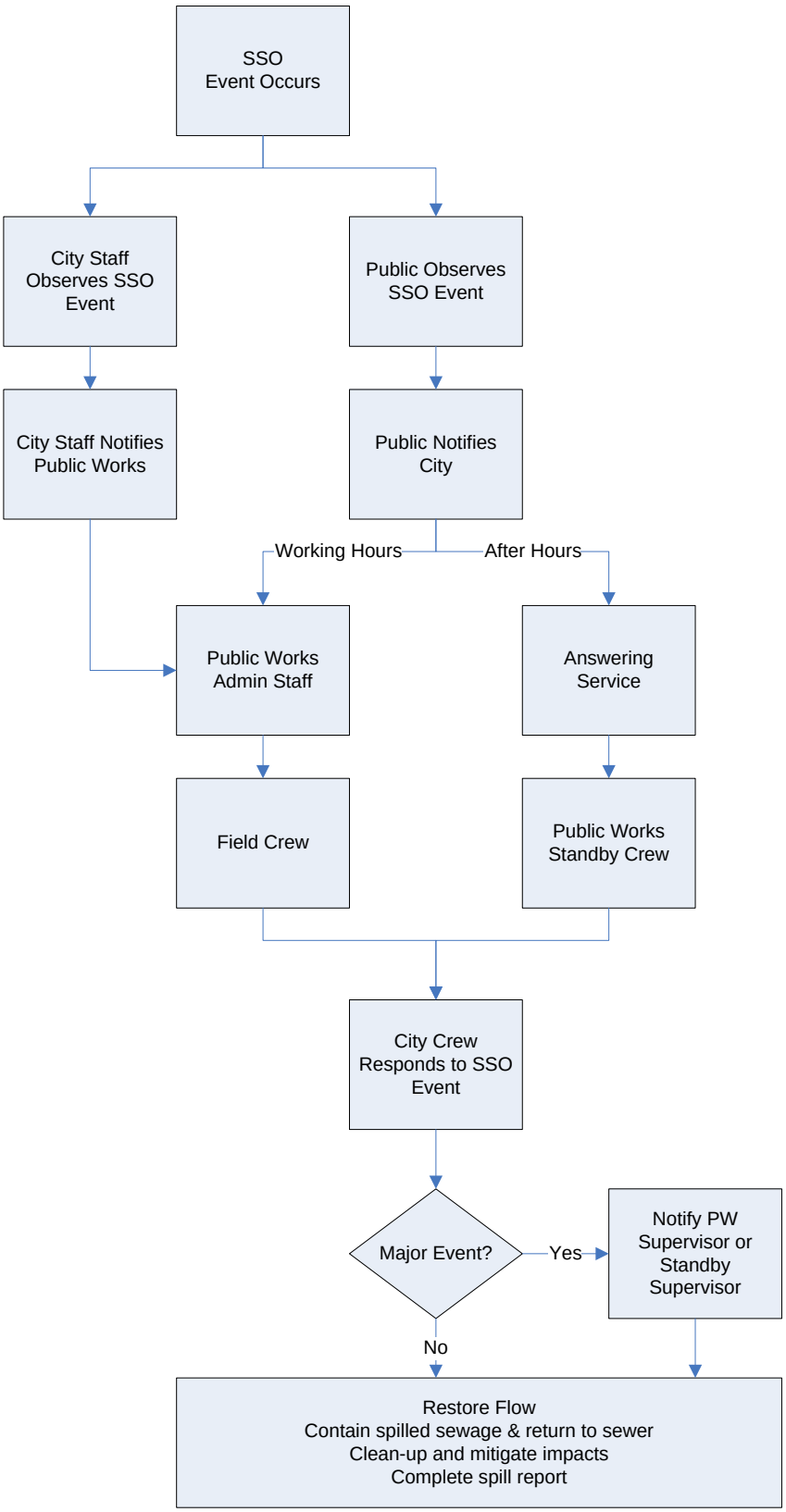
6.4.2. City Staff Observation

City staff conducts periodic inspections of its sewer system facilities as part of their routine activities. Any problems noted with the sewer system facilities are reported to appropriate City staff who, in turn, respond to emergency situations. Work orders are issued to correct non-emergency conditions.

6.5. SSO Response Procedures

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

Figure 6-1: Notification and Response Procedure Flow Chart



6.5.1. First Responder Priorities

The first responder's priorities are:

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

6.5.2. Safety

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

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

6.5.3. Initial Response

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

The first responder should:

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

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

6.5.4. Restore Flow

- Using the appropriate cleaning equipment, set up downstream of the blockage and hydro clean upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not recur downstream.
- If the blockage cannot be cleared within a reasonable time (15 minutes), or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, and equipment suppliers.

6.5.5. Initiate Spill Containment Measures

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

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

6.6. Water Quality Sampling and Testing

Water quality sampling and testing is required whenever 50,000 gallons or more of spilled sewage enters a water body to determine the extent and impact of the SSO.

6.6.1. Spill more than 50,000 gallons (see Flow Chart – Figure 6-2)

For spills greater than 50,000 the water quality sampling procedures are:

- The first responder should notify the City's Water Quality Laboratory or DDSD to collect samples. Samples should be collected as soon as possible after the discovery of the SSO event.
- The water quality samples should be collected from upstream of the spill, from the spill area, and downstream of the spill in flowing water (e.g. creeks). The water quality samples should be collected near the point of entry of the spilled sewage and every 100 feet along the shore on stationary water bodies.
- Storm drain manholes are to be tested after cleaning to verify that all spillage has been removed. Use the Ammonia nitrogen test kit (Hach).

State Water Board (CIWQS) Requirements:

Water quality results are required to be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.

Required Elements:

- Sampling protocols are to be done as per laboratory direction.
- City will account for spill travel time based on water body flow rates.
- Bacterial indicator – 5. Within 48 hours of the enrollee becoming aware of the SSO, require water quality sampling for, at a minimum, the following constituents:
  - i. Ammonia
  - ii. Appropriate Bacterial indicator(s) per the applicable Basin Plan water quality objective or Regional Board direction which may include total and fecal coliform, enterococcus, and e-coli.
- Samples will be analyzed by accredited or certified laboratory.
- Sampling equipment/instruments/supplies will be maintained an/or calibrated by certified laboratory staff, as necessary.

SSO Technical Report (CIWQS)

Submit within 45-calender days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters.

Required Elements:

1. **Causes and Circumstances of the SSO**
   a. Explanation for how and when SSO was discovered.
   b. Diagram showing the SSO failure point, appearance point(s), and final destination(s).
   c. Description of method and data used to calculate SSO volume, including volume recovered.
   d. Description of cause(s) of SSO.
   e. Copies of original field crew records used to document SSO.
2. Historical maintenance records for failure location. **Enrollee's Response to SSO**
   a. Narrative description of chronological actions taken to end SSO.
   b. Explanation of how the SSMP Overflow Emergency Response plan was implemented to respond to and mitigate the SSO.
   c. Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.
3. **Water Quality Monitoring**
   a. Description of water quality sampling activities conducted including analytical results and evaluation of the results.
   b. Detailed location map illustrating water quality sampling points.

6.6.2. Spill greater than 1,000 gallons and less than 50,000 gallons

Refer to Flow chart (Figure 6-2) and SWRCB Order (Appendix).

Conduct water quality sampling **within 48 hours** after initial SSO notification for Category 2 SSOs where greater than 1,000 gallons and less than 50,000 gallons are spilled to surface waters.

- Storm drain manholes are to be tested after cleaning to verify that all spillage has been removed. Use the Ammonia Nitrogen test kit (Hach).

6.7. Recovery and Clean-Up

The recovery and clean-up phase begins when the flow has been restored and the spilled sewage has been contained to the extent possible. The SSO recovery and clean-up procedures are:

6.7.1. Estimate the Volume of Spilled Sewage

Use the methods outlined in Appendix 6-E to estimate the volume of the spilled sewage. Document the estimate using photos of the SSO site before and during the recovery operation.

6.7.2. Recovery of Spilled Sewage

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

6.7.3. Clean-up and Disinfection

Clean-up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Where clean-up is beyond the capabilities of City staff, a clean-up contractor will be used.

6.7.3.1. Private Property

City crews may take responsiblity for the clean-up when the property damage is minor in nature. In all other cases, the City will call a water damage restoration contractor to complete the clean-up and restoration.

6.7.3.2. Hard Surface Areas

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

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

Disinfect all areas that were contaminated from the overflow using the disinfectant solution. Apply minimal amounts of the disinfectant solution using a hand sprayer. Document the volume and application method of disinfectant that was employed.

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

6.7.3.3. Landscaped and Unimproved Natural Vegetation

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

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

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

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

6.7.3.4. Natural Waterways

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

Clean-up should proceed quickly in order to minimize negative impact. Sewage causes depletion of dissolved oxygen which will kill aquatic life.

Any water that is used in the clean up should be de-chlorinated prior to use.

6.7.3.5. Wet Weather Modifications

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

6.8. Public Notification

6.8.1. When SSO Signage is Used

Signs are posted when an SSO occurs in a publicly sensitive area. These areas include schools, parks, walkways and /or a creek that has received an SSO. A sample warning sign is included as Appendix 6-G. Creeks, streams and beaches that have been contaminated as a result of an SSO should be posted at visible access locations until the risk of contamination has subsided to acceptable background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place.

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

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

6.8.2. Deciding Number and Location of SSO Signage

There are no set criteria for the distance between multiple signs. Signs are posted as needed to inform the public that an SSO has occurred. Post signs and place barricades to keep vehicles and pedestrians away from contact with spilled sewage.

6.8.3. When SSO Signage is Removed

SSO signs stay posted until the area has been cleaned and disinfected or, in the case of an SSO into a creek, until sampling of the creek has been analyzed and determined clear by the laboratory. Do not remove the signs until directed by the Water Utility Director or the Public Works Supervisor/ Water Utilities

6.9. Failure Analysis Investigation

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

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

- Reviewing and completing the Collection System Service Call/Overflow Field Report.
- Reviewing past maintenance records.
- Reviewing available photographs.
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs.
- Interviewing staff who responded to the spill.

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

6.10. SSO Categories

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

CATEGORY 1 - Discharges of untreated or partially treated wastewater of **any volume** resulting from an enrollee's sanitary sewer system failure or flow condition that:

- .Reach surface water and/or reach a drainage channel tributary to a surface water; or
- Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain

system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).

CATEGORY 2

- Discharges of untreated or partially treated wastewater of **1,000 gallons or greater** resulting from an enrollee's sanitary sewer system failure or flow condition that **do no** reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.

CATEGORY 3 – All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.

PRIVATE LATERAL SEWAGE DISCHARGE (PLSD)

Discharges of untreated or partially treated wastewater resulting from blockages or other problems **within a privately owned sewer lateral** connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be voluntarily reported to the California Inegrated Water Quality System (CIWQS) Online SSO Database.

6.11. SSO Documentation and Reporting

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

6.11.1.1. Internal SSO Reporting Procedures

6.11.1.2. Category 2 & 3 SSOs

the first responder will fill out the Collection System Service Call/Overflow Field Report and distribute it to those listed on the Field Report.

6.11.1.3. Category 1 SSOs

- **Notify:** The field crew will immediately notify the Public Works Utilities Supervisor (working hours) or the On Call Supervisor (after hours).
- **Immediate Phone Notification:** The Supervisor will notify the Public Works Superintendent for spills estimated to be over **1,000** gallons, or if expected to enter a local waterway.
- **Onsite Supervisor:** Will provide notification to the Public Works Superintendent as soon as logistically possible by cell phone or e-mail..
- **Notification Will Include:**
    - Location
    - Spill Start Time
    - Spill Rate (Estimated)
    - Current Estimated Volume

- Current Mitigation Efforts in Progress
- Additional Pertinent Information Such as Traffic Disruption, Residential or Infrastructure Damage, etc.
- Who is the Lead Operator?
- Who is in Charge on Scene?
- Is There any Public or Media on Scene (How Many?)

- **Follow Up Notification:** Will be provided as necessary when conditions change (Examples as follows: Spill is stopped, spill gets significantly worse, reporters or politicians call or show up at spill site, homeowner damage begins to occur, etc.). Method of notification will be dependent on the type of change being reported.

6.11.1.4. External SSO Reporting Procedures[2]

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

6.11.1.5. Notification:

Within two hours of becoming aware of any Category 1 SSO **discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify** the California Office of Emergency Services (Cal OES) at (800) 852-7550 or (916) 845-8911 and obtain a notification control number.

6.11.1.6. CIWQS Not Available

In the event that CIWQS is not available, the Public Works Maintenance Lead Worker or Supervisor will fax all required information to the RWQCB office in accordance with the time schedules identified above. In such event, the City will submit the appropriate reports using CIWQS as soon as practical. The RWQCB FAX number for Region 2 is (510) 622-2460.

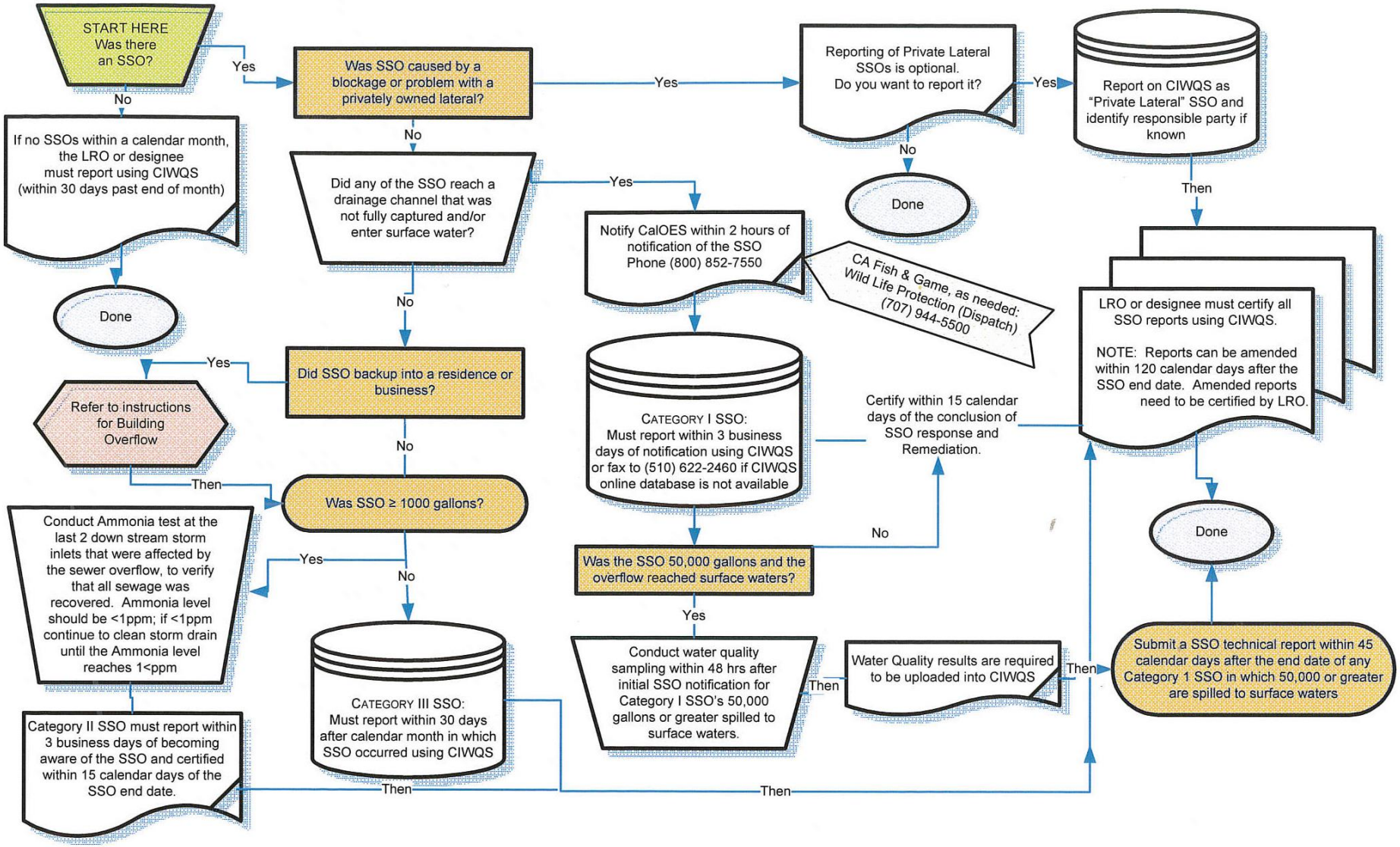
6.11.1.7. Reporting

- **Category 1 SSO:** Submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.
- **Category 2 SSO:** Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.
- **Category 3 SSO:** Submit certified report within 30 calendar days of the end of month in which the SSO occurred.

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

- **CIWQS SSO Technical Report:** Submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. See Section 6.7.1 for report details.
- **"No Spill" Certification:** Certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred.
- **Collection System Questionnaire:** Update and certify every 12 months
- If **multiple appearance points** for SSO from sewer system, complete one SSO report in CIWQS.
- **CIWQS Report Amendments** – The City has 120 days to change an SSO report, however you can request more time by providing justification for why the additional information was not available prior to the end of the 120 days to the State Water Board SSO Reduction Program staff.

Figure 6-2: External Reporting Requirement Flow Chart



6.12. Internal SSO Documentation

6.12.1.1. Category 1, 2, and 3 SSOs

The first responder will complete a work order and the Collection System Service Call/Overflow Field Report and provide copies to Public Works Supervisor.

The Public Works Supervisor will complete the Sewer Overflow Building History Form (Appendix 6-B) and refer to Private Property Damage Procedures (Appendix 6-C) if an SSO has occurred in a residence or building.

The Public Works Superintendent will prepare a file for each individual SSO. The file should include the following information:

- Initial service call information
- Collection System Service Call/Overflow Field Report form
- Copies of the CIWQS report forms
- Volume estimate

The following are optional for Categories 2 and 3

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

6.12.2. External SSO Record Keeping Requirements[3]

The GWDR requires that individual SSO records be maintained by the City for a minimum of **five years** from the date of the SSO. This period may be extended when requested by a Regional Water Board Executive Officer. All records shall be made available for review upon State or Regional Water Board staff's request. Records shall be retained for all SSOs, including but not limited to the following when applicable:

- SSO event records;
- Records documenting Sewer System Management Plan (SSMP) implementation and changes/updates to the SSMP.
- Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters.
- Collection system telemetry records if relied upon to document and/or estimate SSO Volume.
- Self-maintained records shall be available during inspections or upon request.

[3] State Water Resources Control Board Monitoring and Reporting Program No. 2006·0003-DWQ (as revised by Order No. WQ 2008-0002.EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (as revised by Order No. 2013-0058-EXEC)

6.13. SSO Documentation and Reporting

All SSOs should be thoroughly investigated and documented for use in managing the sewer system and meeting established reporting requirements. Every SSO event is an opportunity to evaluate the response and reporting procedures. Each overflow event is unique, with its own elements and challenges including volume, cause, location, terrain, and other parameters.

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

The procedures for investigating and documenting SSOs are:

6.13.1. Internal SSO Reporting Procedures

6.13.1.1. Category 1 and 2 SSOs

The first responder will complete a work order and the Collection System Service Call/Overflow Field Report and provide copies to Public Works Supervisor – Sewer.

The Public Works Utilities Supervisor – Sewer will complete the Sewer Overflow Building History Form (Appendix 6-B) and refer to Private Property Damage Procedures (Appendix 6-C) if an SSO has occurred in a residence or building.

The Public Works Supervisor – Sewer will prepare a file for each individual SSO. The file should include the following information

- Initial service call information
- Collection System Service Call/Overflow Field Report form
- GBA Spill Report
- Copies of the CIWQS report forms
- Volume estimate
- Failure analysis investigation results

The following are optional for Category II SSOs:

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

6.13.1.2. Category 1 and 2 SSOs

The field crew will immediately notify the Public Works Utilities Supervisor (working hours) or the On Call Supervisor (after hours). The Supervisor will immediately notify the Assistant Director of Water Utilities or Public Works Superintendent.

The field crew will fill out the Collection System Service Call/Overflow Field Report and turn it in to the Public Works Utilities Supervisor. The Public Works Utilities Supervisor

will forward the report to the Water Utility Assistant Director, or in his/her absence the Maintenance Superintendent. The Public Works Utilities Supervisor (working hours) or the On Call Supervisor (after hours) will meet with field crew(s) at the site of the SSO event to assess the situation and to document the conditions with photos.

In the event of a very large overflow or an overflow in a sensitive area, the Assistant Water Utility Director or the Maintenance Superintendent will notify the City Manager or Assistant City Manager. The City Manager or Assistant City Manager may notify the City Council.

6.13.1.3. Category 3 SSOs

The field crew will fill out the Collection System Service Call/Overflow Field Report and turn it in to the Public Works Supervisor. The Public Works Utilities Supervisor will forward the report to the Assistant Director of Water Utilities.

6.13.2. External SSO Reporting Procedures[4]

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

- **Category 1 SSO:** Submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date.
- **Category 2 SSO:** Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.
- **Category 3 SSO:** Submit certified report within 30 calendar days of the end of month in which the SSO occurred.
- **No Spill Certification** (monthly) If there are no SSOs during the calendar month, the Public Works Utilities Supervisor will submit an electronic report that the City did not have any SSOs, **within 30 calendar days after the end of each calendar month.** The Assistant Director of Water Utilities or Public Works Maintenance Superintendent will certify the report.

6.13.2.1. CIWQS Not Available

In the event that CIWQS is not available, the Public Works Maintenance Lead Worker or Utilities Supervisor will fax all required information to the RWQCB office in accordance with the time schedules identified above. In such event, the City will submit the appropriate reports using CIWQS as soon as practical. The RWQCB FAX number is (510) 622-2460.

[4] State Water Resources Control Board Monitoring and Reporting Program No. 2006 0003-DWQ (as revised by Order No. WQ 2013-0058.EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems

6.13.3. Internal SSO Documentation

6.13.3.1. Private Lateral SSOs

The first responder will complete the Collection System Service Call/Overflow Field Report and provide copies to Public Works Supervisor. The Public Works Utilities Supervisor will complete the Sewer Overflow Building History Form if an SSO has occurred in a residence or building.

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

6.13.4. External SSO Record Keeping Requirements[5]

The GWDR requires that individual SSO records be maintained by the City for a minimum of **five years** from the date of the SSO. This period may be extended when requested by a Regional Water Board Executive Officer.

All records shall be made available for review upon State or Regional Water Board staff's request.

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

- Record of Certified report;
- All original recordings for continuous monitoring instrumentation;
- Service call records and complaint logs of calls received by the City;
- SSO calls;
- SSO records;
- Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps.
- Work orders, work completed, and any other maintenance records from the previous five years which are associated with responses and investigations of system problems related to SSOs;
- A list and description of complaints from customers or others from the previous 5 years; and
- Documentation of performance and implementation measures for the previous five years.

If water quality samples are required by an environmental or health regulatory agency or State law, or if Voluntary monitoring is conducted by the City or its agent(s), as a result of any SSO, records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The individual(s) who performed the sampling or measurements;

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

- The date(s) analyses were performed;
- The individual(s) who performed the analyses;
- The analytical technique or method used; and,
- The results of such analyses.

6.14. Equipment

This section provides a list of specialized equipment that is required to support this Overflow Emergency Response Plan.

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

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

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

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

Portable Generators, Portable Pumps, Piping, and Hoses -- The list of portable equipment that is required to support this plan is included in the Public Works Standby procedures book.

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

6.15. SSO Response Training

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

6.15.1. Initial and Annual Refresher Training

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

6.15.2. SSO Response Drills

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

6.15.3. SSO Training Record Keeping

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

6.16. Contractors Working On City Sewer Facilities

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

Appendix 6-A: Collection System Service Call/Overflow Field Report

Collection System Service Call/Overflow Field Report		
For Office Use		
Date:	Call Received: am/pm	Received by:
Caller's Name:		Caller's Phone No:
Caller's Address:		
Location of Overflow: Cross Street:		
Time & Names of Crew Members Contacted:		
Description of Complaint:		
Note: Provide Field Report, Gas Detector, Radio, GPS, Camera, and Video Camera to Collection System *Employee upon Arrival*		
Field Report – For Response Crew Use		
Time Arrived at Site:		Crew Names:
Asset #:	Work Area:	U/S- D/S Asset #:
Size of Line:	Length of Line:	Easement: Yes □ No □
Caller Contacted: Yes □ No □		Weather: Sunny □ Cloudy □ Rainy □ Rain for Several Days □
Complete Remainder of Form if an Overflow (SSO) has Occurred		
SSO Started: am/pm	SSO Stopped: am/pm	Duration: days/hrs
Est. Overflow Volume:	Estimation Method Used:	Eyeball Est. □ Duration/Flowrate □ Measured Vol. □ Other

Collection System Service Call/Overflow Field Report

Any Fish Killed: Yes □ No □	SSO Volume Released:	SSO Volume Recovered:
Est. Volume that Reached Surface Water, Drainage Channel, or Not Recovered from Storm Drain:		
SSO Source:	Manhole □ Pipe □ Clean Out □ Private Lateral □ Pump Station □ (name) Other:	
Final Spill Destination:	Storm Drain □ Captured Storm Drain □ Building □ Yard/Land □ Surface Water □ No Water Involved □ Other	
Cause of Overflow:	Roots □ Grease □ Debris □ Vandalism □ Construction Damage □ Capacity (Heavy Rain) □ Power Failure □ Other	
Cleanup Method/Actions Taken:		
Disinfection: Yes □ No □	Disinfection Amount/Type:	
Time Cleanup Began:	Time Cleanup Complete:	
Signs Posted: Yes □ No □ No. of Signs	Barricaded: Yes □ No □ No. of Days	
Pictures Taken: Digital □ Film □ Video □	Neighbors Notified: Yes □ No □	
Samples Taken By:	Location of Samples:	
Water Quality Samples Analyzed for:	□ Total Coliform □ Fecal Coliform □ BOD	□ Dissolved Oxygen □ Ammonia Nitrogen □ Other:
Receiving Waters Description:		
Spill Risk Magnitude:	Did spill discharge to a drainage channel and/or surface water? Yes □ No □ Did spill discharge to a storm drainpipe that was **not** fully captured and returned to the sanitary sewer system? Yes □ No □ More than 1,000 gallons? Yes □ No □ Less than 100 gallons? Yes □ No □ Private lateral spill? Yes □ No □	
Customer Notified Regarding Status: Yes □ No □ If No, Why:		
List all Personnel Responding to Spill:		

Collection System Service Call/Overflow Field Report

Additional Information:		
If Asset was Manhole, Pipe, or Clean Out, complete the following:		
Asset Type		**GPS Coordinates**
Overflowing MH #:		
Upstream MH #:		
Downstream MH #:		
Cleanout #:		
Pipe Size (inches):	Pipe Material:	Pipe Age (estimated):
Notifications		
Agency Notified	**Contact Information**	**Date/Time**
OES (800) 852-7550 or (916) 845-8911	OES Spill #	
RWQCB www.swrcb.ca.gov/ciwqs Fax (510) 622-2460 if website down	SSO Event ID	
Contra Costa County Health Environmental Health (925) 646-2500 (Business Hours) or (925) 383-5445 or (925) 383-4945		
Contra Costa County Health Hazardous Materials Spills (925) 646-1112		
California Dept of Fish & Game (707) 944-5500		
Other		
Name of Person making Notifications:		
Sketch of Area (Include Manholes, Intersections, Location of Stoppage, etc). Use back of page if needed.		
This Report was Completed By:		Date/Time:
This Report was Submitted To:		Date/Time:

Appendix 6-B: Sewer Overflow Building History Form

Sewer Overflow Building History Form		
Complete this Form if an Overflow (SSO) has Occurred in a Residence or Building		
Customer Clean Out was:	Non-Existent □ Full □ Empty □	
City Clean Out was:	Non-Existent □ Full □ Empty □	
Year Home was Built:	No. of Bathrooms:	No. of Rooms Affected:
No. of Residents at this Address:	Approx. Time Sewage was Sitting:	
Type of Flooring in Area(s) Affected:	Tile □ Carpet □ Wood □ Other	
Condition of Flooring and Seams:	Cracking □ Visible Open Spaces □ Other	
Condition/Type of Baseboards:	Are there Baseboards Yes □ No □ Baseboard Material: Bottom has Tight Seal with Floor □ Top has Tight Seal with Wall □ Space between Bottom & Floor □ Space between Top & Wall □	
Were Residents Relocated to a Hotel: Yes □ No □ If Yes, Hotel Name		
Name of Cleaning Contractor:		
Is Manhole Visibly Higher than the Drain that Overflowed: Yes □ No □		
Is Finished Floor 12” or More Below the Nearest Upstream Manhole: Yes □ No □		
Is there a Backflow Prevention Device (BPD) Installed on the Property: Yes □ No □		
Was BPD Functioning: Yes □ No □	Is Property Required to have BPD Installed (by Ordinance): Yes □ No □	
Has the Customer had any Plumbing Work Done Recently: Yes □ No □		
Has the Area been Remodeled: Yes □ No □	Any Active Plumbing Projects Observed: Yes □ No □	
Any Plumbing Projects within the Last 3 Years: Yes □ No □		
Have there ever been any Other Spills at this Location: Yes □ No □ If Yes, When:		
Supervisor Review Date:	Superintendent Review Date:	

Appendix 6-C: Private Property Damage Procedures

Customer Relations Guidelines

It is important for employees to communicate effectively with the City's customers, especially in a sewage backup situation. How we communicate – on the phone, in writing, or in person – is how we are perceived. Good communication with the homeowner results in greater confidence in our ability to address the problem satisfactorily, less time to resolve the claim, and less damage done to the property.

As a representative of the City, you will occasionally have to deal with an irate homeowner. A backup is a stressful event and even a reasonable homeowner can become irate should he/she perceive us as being indifferent, uncaring, unresponsive, or incompetent.

Although sometimes difficult, effective management of a sewage backup situation is critical. If it is not managed well, the situation can end up in a costly prolonged process with the homeowner. We want the homeowner to feel assured that we are responsive and the homeowner's best interest is a top priority.

Communication Tips

1. Give the homeowner ample time to explain the situation or to vent. Show interest in what the homeowner has to say, no matter how many times you have heard it before, or how well you understand the problem.
2. As soon as possible, let the customer know that you will determine if the source of the sewer backup is in the sewer main and, if it is, will have it corrected as quickly as you can.
3. Acknowledge the homeowner's concerns. For example, if the homeowner seems angry or worried about property damage, say something like, "I understand you're concerned about the possible damage to your property, but a professional cleanup crew can restore the area, and if it is determined that the City is at fault, the property owner has the right to file a claim for any reasonable repairs or losses resulting from this incident".
4. Express regret for any inconveniences caused by the incident, but do not admit fault.
5. As much as possible, keep the homeowner informed on what is being done and will be done to correct the problem.
6. Keep focused on getting the job done in a very professional manner. Don't wander from the problem with too much unnecessary small talk with the homeowner.
7. Don't find fault or lay blame on anyone.
8. Make sure someone follows up with a telephone call to ensure everything is being handled as it should be.

Before you leave, make sure the homeowner has the name and telephone number of someone at the City to call if he/she has questions or wants information. The

Customer Information Letter contains this information and you should take the time to review this with the homeowner.

Customer Information Letter Regarding Sewer Backup Claims

Dear Mr./Ms.: _____ Date: _____

Address:_____

We recognize sanitary sewer backflow incidents can be stressful. The City of Pittsburg (City) has prepared this brief set of instructions to help you minimize the impact of the loss by responding promptly to the situation.

The City is not responsible for clean up charges or damages caused by blockages in the property owner's sewer lateral or caused by code violations. At this time, the City is investigating the cause of the loss and does not assume liability for damages. However, if the investigation determines the City is responsible for this incident, the costs you incur for reasonable and necessary clean up will be included in the settlement of your claim. Regardless of whether you or the City is responsible for the loss, it is up to you to arrange for the repair of your property and to present a claim for the City's consideration.

You or the property owner should immediately contact a contractor for clean up of the affected areas. If you do not know of a company to call for service, the following 24-hour emergency restoration companies are available to respond:

- TMB Link (800) 413- 2999
- Restoration Management Co. (800) 400-5058
- Emergency Service Restoration (800) 577-7537
- Ideal Restoration (800) 379- 6881
- Diablo Flooring (925) 426-7847
- SOS Carpet Cleaning (925) 754-0944

This list is provided as a resource only. The City does not require or endorse the use of any of these contractors. This list is not to be construed as exclusive, comprehensive or limiting in any way. Qualified contractors can be found in the Yellow Pages under "Water Damage Restoration" or "Fire & Water Damage Restoration". However, be sure you hire a contractor with experience in sewer backups and enough resources to get the job done quickly.

What you need to do now:

- √ Contact a restoration contractor for clean up and removal of affected surfaces.
- √ Do not attempt to clean the area yourself, let the contractor you hire handle this.
- √ Keep people and pets away from the affected area(s).
- √ Turn off heating/air conditioning systems.
- √ Prevent any material from reaching floor vents to prevent contamination.
- √ Do not remove items from the contaminated area – the contractor you hire will handle these contents.
- √ Contact your homeowners' insurance carrier to report a claim.
- √ File your claim with the City as soon as practical. The California Government Code, Sections 900 – 960 requires filing a written claim and outlines specific time lines and notice procedures that must be used.

I/We acknowledge receipt of this letter.

Employee Signature: _____ Date: _____

Customer Signature: _____ Date: _____

Appendix 6-D: Collection System Failure Analysis Form

Collection System Failure Analysis Form			
Incident Report #		Prepared By	
SSO/Backup Information			
Event Date/Time	Address		
Volume Spilled	Volume Recovered		
Cause			
Summary of Historical SSOs/Backups/Service Calls/Other Problems			
Date	Cause	Date Last Cleaned	Crew
Records Reviewed By		Record Review Date	
Summary of CCTV Information			
CCTV Inspection Date		Tape Name/Number	
CCTV Tape Reviewed By		CCTV Review Date	
Observations			
Recommendations			
	No Changes or Repairs Required		
	Maintenance Equipment		
	Maintenance Frequency		
	Repair (Location and Type)		
	Add to Capital Improvement Rehabilitation/Replacement List: Yes □ No □		
Supervisor Review Date		Superintendent Review Date	

Appendix 6-E: Methods for Estimating Spill Volume

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

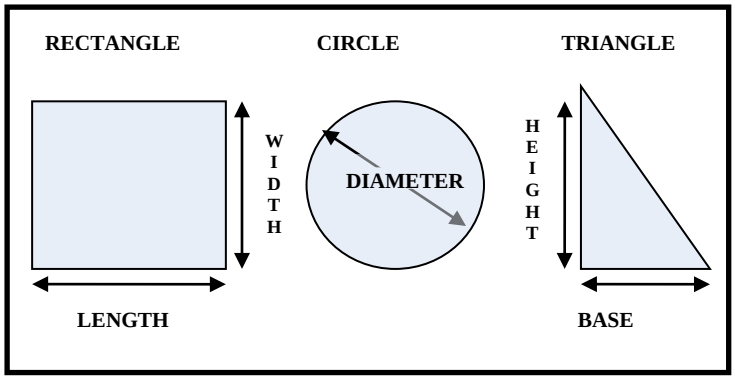
Method 1 Eyeball Estimate

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

Method 2 Measured Volume

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

Common Shapes and Dimensions



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

Step 2 Measure or pace off the dimensions.

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

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

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

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

Circle: Area = diameter (feet) x diameter (feet) x 0.785

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

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

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

Method 3 Duration and Flowrate

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

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

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

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

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

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

There are three common ways to estimate the flowrate:

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

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

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

= 198 gallons per hour / 60 minutes per hour

= 3.3 gallons per minute

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

For example:

Spill start time = 11:00

Spill end time = 14:00

Spill duration = 3 hours

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

= 594 gallons

Appendix 6-F: Manhole Overflow Flowrate Guide

City of San Diego
Metropolitan Wastewater Department

Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)

Wastewater Collection Division
(619) 654-4160

5 gpm

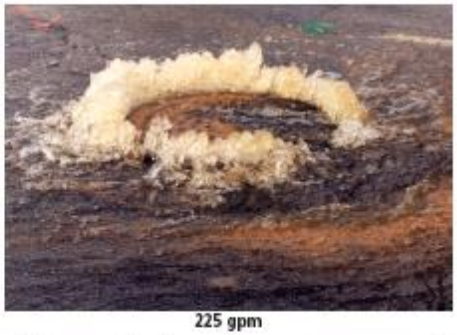
25 gpm

50 gpm

100 gpm

150 gpm

200 gpm



225 gpm

250 gpm

275 gpm

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

rev. 4/99

Appendix 6-G: Sample Warning Sign

WARNING

RAW SEWAGE SPILL
AREA CLOSED
NO ENTRY

Contaminated Water

DO NOT come into contact, wade, swim, or fish in this water.

Keep children and pets out of the area.

Questions concerning exposure, posting, and clean up should be directed to:

City of Pittsburg

(925) 252-4936

Section 7. FOG Control Program

7.1. Introduction

This section presents the FOG Control Program for the Antioch, Bay Point, and Pittsburg service areas. This FOG Control Program will be managed, staffed, and administered by Delta Diablo Sanitation District (District).

7.2. Regulatory Requirements for FOG Control Element of SSMP

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

7.2.1. RWQCB Requirement

The collection system agency must evaluate its service area to determine whether a Fats, Oils, and Grease (FOG) control program is needed. If so, a FOG control program shall be developed as part of the SSMP. If the collection system agency determines that a FOG program is unnecessary, proper justification must be provided.

7.2.2. General Waste Discharge Requirement (GWDR)

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

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

(b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;

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

(d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;

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

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

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

7.3. Nature and Extent of FOG Problem

Data regarding the nature and extent of the FOG problems in the three sewer systems was analyzed including the location of FOG-related service calls (which include blockages), FOG-related SSOs, frequent preventive maintenance, and food service establishments (FSEs). There are approximately 166 FSEs in Antioch, 19 FSEs in Bay Point, and 96 FSEs in Pittsburg as shown in Figure 7-1. Of the nine FOG-related SSOs during the period between May 2, 2007 and July 14, 2008, eight were in residential areas with one in a mixed commercial/residential area. The locations of FOG-related SSOs are shown in Figure 7-2.

Figure 7-1: FSE Locations

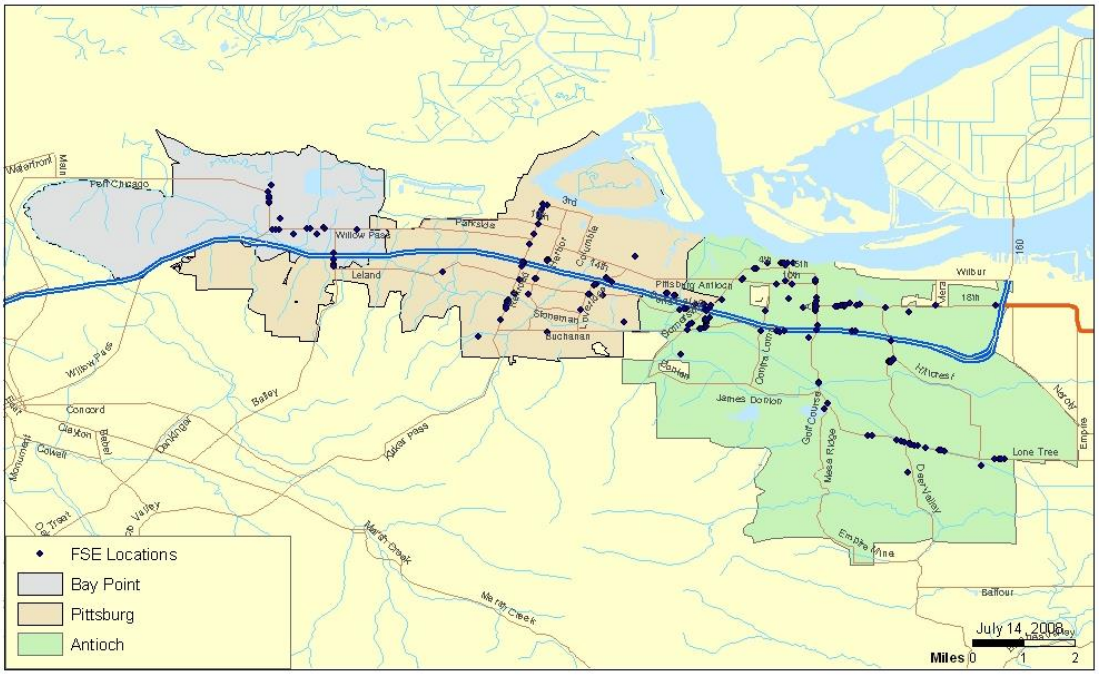
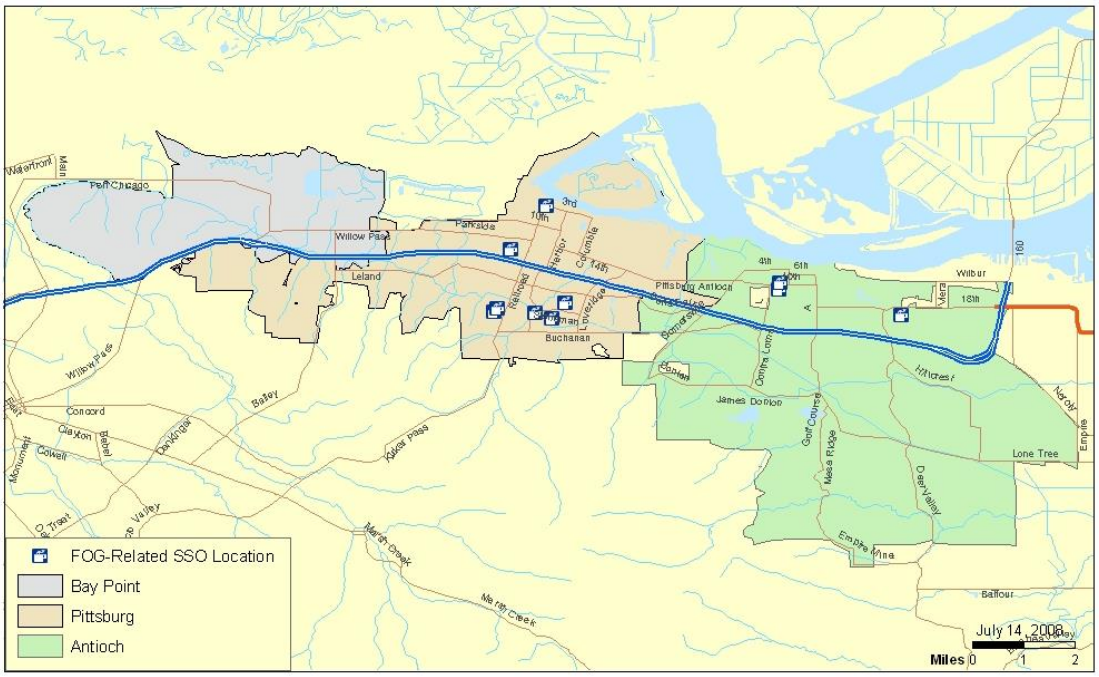


Figure 7-2: Locations of FOG-Related SSOs



The following sections present the nature and extent of FOG-related problems in each of the three service areas.

7.3.1. Antioch Sewer System

The City reported three grease-caused SSOs during the period May 2, 2007 through July 14, 2008. This represents 10% of the reported SSOs for this period. These recent SSOs all occurred in residential areas.

The City's preventive maintenance efforts combined with the District's FOG Source Control Program appear to be effective in minimizing the problems associated with commercial FOG sources.

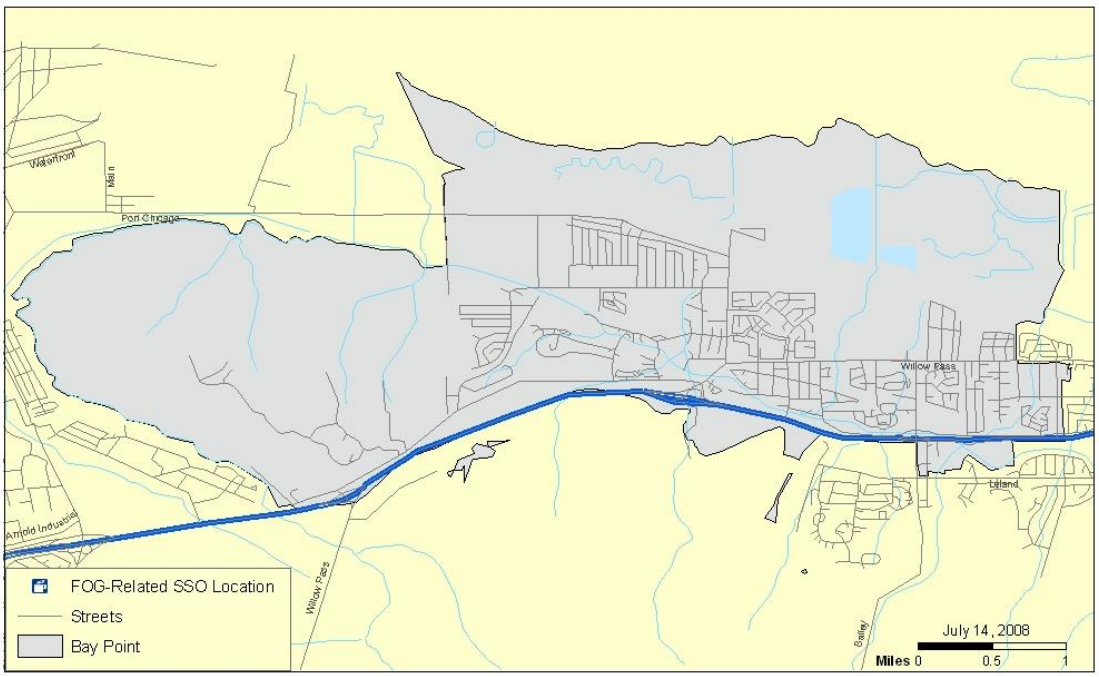
Figure 7-3: Antioch FOG FOG-Related SSOs

7.3.2. Bay Point Sewer System

The District has not had any SSOs during the period May 2, 2007 to July 14, 2008.

The District's preventive maintenance efforts combined with the FOG Source Control Program appear to be effective in minimizing the problems associated with commercial and residential FOG sources.

Figure 7-4: Bay Point FOG-Related SSOs

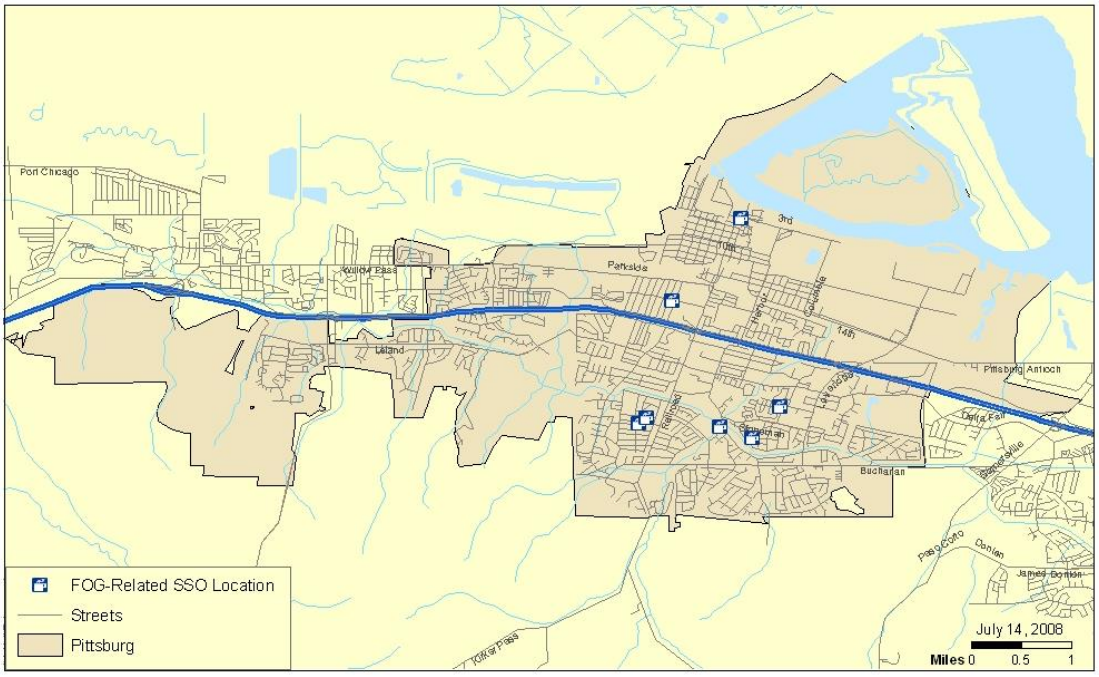


7.3.3. Pittsburg Sewer System

The City reported six grease caused SSOs during the period May 2, 2007 to July 14, 2008. These SSOs represent 26% of the reported SSOs for this period. Five of the six SSOs occurred in residential areas.

The City's preventive maintenance efforts combined with the FOG Source Control Program appear to be effective in minimizing the problems associated with commercial FOG sources.

Figure 7-5: Pittsburg FOG-Related SSOs



7.3.4. Summary of FOG Data Analysis

The analysis of the SSO, FSE, and frequent maintenance lines shows that FOG is a factor in each of the three service areas. The current FOG Source Control Program and the preventive maintenance programs have been effective at reducing the frequency of SSOs in commercial areas. The ongoing FOG-related problems appear to be associated with high density residential and, to a lesser extent, low density residential sources.

7.4. FOG Source Control Program

The FOG Source Control Program will be continued by the District and the Cities. The responsibilities of each of the three agencies for the elements of the FOG Source Control Program are shown on Table 7-1.

Table 7-1: FOG Control Program Activities and Responsibilities

Focus	Activity	Antioch	Bay Point	Pittsburg	DDSD
Commercial Sources	Focused Food Service Establishment (FSE) Program (permits, inspections) (1)				X
	Inspect Grease Removal Device (GRD) maintenance				X
	Develop common standards for GRD	X	X	X	X
	Review plans and specify GRD(s) required	X	X	X	
	Inspect GRD installation	X	X	X	
	Identify FOG disposal sites and distribute to grease haulers				X
	Study feasibility of FOG disposal at DDSD TP				X
	Outreach to businesses				X
	Provide information re: FOG problems to District inspector(s)	X	X	X	
	Enforcement action	X	X	X	
High Density Residential Sources	Optimize sewer cleaning	X	X	X	
	Repair/replace problem sewers	X	X	X	
	Prepare outreach materials				X
	Outreach to upstream property managers	X	X	X	
	Enforcement action	X	X	X	

Focus	Activity	Antioch	Bay Point	Pittsburg	DDSD
Low Density Residential Sources	Optimize sewer cleaning	X	X	X	
	Repair/replace problem sewers	X	X	X	
	Prepare outreach materials				X
	Outreach to upstream residents	X	X	X	
Gather Information	Gather information for next SSMP update	X	X	X	

(1) Notice of Violation by DDSD.

7.5. Public Outreach Program

District and City crews provide information on proper FOG disposal to residents that have experienced a FOG-related blockage or SSO.

The blockages and SSOs that are caused by FOG appear to be from primarily residential sources at this time. The District will prepare materials to be used as the basis for a focused public education/outreach program. The District and the Cities will provide the public education/outreach materials to commercial and residential sources that are tributary to sewers that experience FOG-related stoppages and SSOs.

7.6. Acceptable FOG Disposal Facilities

A list of facilities in the San Francisco Bay Area that accept grease from grease haulers is included as Appendix 7-A. Lists of grease haulers approved by the East Bay Municipal Utility District (EBMUD) and the Sacramento Regional County Sanitation District (SRCSD) are included as Appendices 7-B and 7-C.

The District will update the list of acceptable FOG disposal facilities annually. There is no indication at this time that additional grease disposal facilities are needed to handle the FOG generated within the District's service area.

7.7. FOG Inspections

7.7.1. FOG Legal Authority

The District's Code and the City Municipal Codes will be modified to provide the legal basis for the FOG Source Control Program as shown in Section 3 – Legal Authority.

7.7.2. Staffing

The District will assess the staffing required to inspect and enforce the FOG ordinance by December 31, 2009.

7.7.3. Facility Inspections

The District will conduct periodic facility inspections of permitted FSEs that are located in identified FOG Hot Spot areas to ensure that Best Management Practices (BMPs) are being followed, that GRDs are properly installed, and that operating/maintenance requirements are being followed. The frequency of inspection will be based on the historical performance of the facility. Poor performing facilities will be inspected more frequently. FSEs will be inspected at least once every three years. The City will endeavor to report new businesses to DDSD monthly.

7.7.4. Investigation and Enforcement

The District and the Cities will work together to identify FSEs that cause FOG-related blockages or SSOs. The District will conduct facility inspections to determine the source of the FOG in these instances.

The District and the Cities will initiate enforcement action against FSEs in their service areas that are determined to be in violation of the requirements of the FOG Control Program. Enforcement actions may include a verbal warning, a written warning, administrative orders (which may include fines), and disconnection from the public sewer system.

7.8. FOG Preventative Maintenance

The District's and Cities' preventive maintenance programs are currently focused on the problematic sewer line segments. The ongoing identification of FOG Hot Spots will provide the basis for the FOG Control Program. FOG sources that cause blockages or SSOs will be included in the FOG Control Program. The results of the sewer cleaning operations will be used to revise sewer cleaning frequencies.

The District/City staffs will provide the DDSD FOG Source Control Program Inspectors with timely notice when gravity sewers experience FOG-related blockages or SSOs.

DDSD and the Cities will work together to update the FOG Hot Spot areas annually. The District and the Cities will provide preventive maintenance for gravity sewers in their service areas that are located in the FOG Hot Spot areas at the frequency that is required to minimize recurring FOG-related blockages and SSOs.

7.9. GRD Requirements

7.9.1. Design Standards, Plan Review, and Inspection

The District and the Cities will develop common specifications for the installation and sizing of GRDs.

Each of the Cities will be responsible for reviewing proposed development plans to ensure that they address the installation of GRDs.

The Cities will develop processes to ensure the GRDs are properly installed during new construction and remodels as part of their Code Enforcement.

7.9.2. Maintenance Standards and BMPs

The District and the Cities will develop common standards for the proper maintenance of GRDs. FSEs that discharge significant quantities of grease will be tracked using discharge permits administered by the District.

The District will encourage FSEs to employ BMPs as part of their efforts to control the discharge of FOG to the public sewer system. The BMPs that will be encouraged include:

- Posting “No Grease” signs over sinks and dishwasher;
- Collecting and recycling cooking oil;
- “Dry wiping” pots, pans, and kitchen equipment before cleaning;
- Maintaining grease traps on a regular schedule;
- Checking grease interceptor on a regular schedule (grease and solids should not exceed 25% of interceptor depth);
- Using absorbent paper under fryer baskets;
- Using absorbent (such a rice hulls, cat letter) to pick up oil and grease spills; and
- Not using emulsifiers or solvents other than dishwashing detergents.

The District’s activities will include the distribution of placards and literature promoting the use of BMPs and observations/comments during facility inspections to encourage the use of BMPs.

7.9.3. Record Keeping and Reporting

The District and the Cities will work together to update the list of FSEs in each service area annually.

Appendix 7-A FOG Disposal Sites

The following locations accept grease from liquid waste haulers in the San Francisco Bay Area as of June 2008.

Business Name	Location	Phone Number	Services
Blue Sky Bio-Fuel Inc.	Oakland	(510) 436-6654 (415) 250-9114	Primarily yellow grease, some brown grease. Can accept 7,000 gallons per day.
East Bay Municipal Utility District	Oakland	(510) 287-1632	Accepts grease.
Palo Alto Wastewater Treatment Plant	Palo Alto	(650) 329-2598	Accepts 5,000 to 6,000 gallons per day on first come first serve basis. They are in the process of increasing their ability to accept more (as of July 2008)
Sacramento Regional County Sanitation District	Sacramento	(916) 875-FATS	
Salinas Tallow	Salinas	(800) 621-9000	Will consider accepting grease from other reputable haulers. They purchase yellow grease and process the interceptor grease with residue going to landfill.
San Jose Tallow Company	San Jose	(408) 452-8777	They don't accept interceptor grease, but would consider accepting from outside haulers if it wouldn't impact any of their grease hauling routes.
South Bayside Systems Authority	Redwood City	(650) 591-7121	Accepts grease.

Appendix 7-B East Bay Municipal Utility District Approved Grease Haulers

EBMUD Approved Grease Haulers as of February 27, 2008

East Bay Municipal Utility District (EBMUD), Environmental Services Division

Telephone (510) 287-1651

Name	Phone Number
A-1 Septic Tank Service, Inc.	(510) 886-4455
A-1 Septic – Little River	(707) 937-0496
Able Septic Tank Service	(408) 377-9990
All Valley Environmental, Inc.	(559) 498-8378 or (559) 217-5949
Ameriguard Maintenance Services	(800) 347-7876
Blue Sky Bio-Fuels	(510) 868-9229
Burr Plumbing and Pumping	(408) 287-2877
Coast Environmental	(800) 588-7762
Darling International, Inc.	(415) 647-4890
Ernie's Plumbing	(925) 228-5242
Joe's Farmers Septic and Grease Service	(707) 546-3236
Liquid Environmental Solutions of California	(866) 694-7327
North Coast Sanitary	(707) 884-1095
Pioneer Liquid Transport	(800) 366-6808
Portosan – Santa Rosa	(707) 566-2000
R & D Grease Trap Cleaning	(707) 632-5827
Roto Rooter Plumbing	(510) 483-2324
SRC Pumping Company	(916) 363-1342
Trap Recyclers	(800) 994-7867

Appendix 7-C Sacramento Regional County Sanitation District Approved Grease Haulers

SRCSD Approved Grease Haulers as of July 2008.

Sacramento Regional County Sanitation District (SRCSD)

Telephone (916) 875-FATS

Name	Address	Phone Number
A-1 Septic Service	P.O. Box 762, West Sacramento, CA 95691	(916) 371-4160
ABC Plumbing, Heating & Air Conditioning	205 22nd Street, Sacramento, CA 95816	(916)448-0801
Ace Plumbing, Heating & Air	4405 Franklin Blvd., Sacramento, CA 95820	(916) 422-2333
Advanced Septic Service	6513 Auburn Blvd., Citrus Heights, CA 95621	(916) 726-5150
All Pumping & Septic	1289 Sonoma Avenue, Sacramento, CA 95815	(916) 925-1333
All Valley Environmental Inc.	523 N. Brawley Avenue, Fresno, CA 93706	(559) 498-8378
Ameriguard Maintenance Services, LLC*	4681 E. Vine Avenue, Fresno, CA 93725	(559) 497-2925
APS Environmental Inc.	6643 32nd Street 103, North Highlands, CA 95660	(916) 454-2000
Best Construction & Maintenance Inc.	8550 Jackson Road, Sacramento, CA 95826	(916) 383-4533
Chucks & Auburn Septic	4504 Yankee Hill Ct., Rocklin, CA 95677	(916) 624-8500
Cook’s Portable Toilets & Septic	1402 Riosa Road, Lincoln, CA 95648	(916) 645-8560
Darling International*	11946 Carpenter Road, Crows Landing, CA 95313	(209) 667-9153
G & C Septic Service	12851 Stockton Blvd., Galt, CA 95632	(916) 366-1111

Name	Address	Phone Number
Howards Grease Trap Pumping	8185 Cashel Way, Sacramento, CA 95829	(916) 681-0433
Liquid Environmental Solutions of CA	Corporate Office, 12626 High Bluff Drive, Suite 240, San Diego, CA 92130-2070	
Roto Rooter Plumbers	2551 Albatross Way, Sacramento, CA 95815	(916) 482-1422
Sacramento Rendering Company*	dba SRC Pumping Co., P.O. Box 276424, Sacramento, CA 95830	(916) 363-4821
Sweet Septic Systems	5701 Mother Lode Drive, Placerville, CA 95667	(916) 622-8768

Section 8. System Evaluation and Capacity Assurance Plan

8.1. Introduction

This section of the SSMP presents the City's programs and activities to provide adequate system capacity and thereby prevent system overflows.

8.2. Regulatory Requirements for the System Evaluation and Capacity Assurance Plan Element of SSMP

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

8.2.1. RWQCB Requirement[6]

a) Each wastewater collection system agency shall establish a process to assess the current and future capacity requirements for the collection system facilities.

b) Each wastewater collection system agency shall prepare and implement a capital improvement plan to provide hydraulic capacity of key sewer system elements under peak flow conditions.

8.2.2. GWDR Requirement[7]

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

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

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

c) Capacity Enhancement Measures: The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including

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[6] ***Sewer System Management Plan (SSMP) Development Guide***, San Francisco Bay Regional Water Quality Control Board in cooperation with Bay Area Clean Water Agencies, July 2005.

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

prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, inflow and infiltration (I/I) reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.

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

8.3. Evaluation – Wastewater Collection System Master Plan

The City completed a Wastewater Collection System Master Plan (Master Plan) in April 2003 (Master Plan). The master planning effort included flow monitoring and the development of a hydraulic model. Flows were monitored at seven locations (4 permanent and 3 temporary metering sites).

The flows were estimated for gravity sewers 10 inches in diameter and larger (some 8 inch sewers were included in the model) using Wallingford HydroWorks™ flow modeling software and a 5 year-6 hour return interval design storm. Gravity sewers flowing full (d/D > 1) where judged to be deficient.

The 2003 Master Plan identified three capacity deficiencies: Highway 4 Trunk, West Leland Road, and Bailey Road. The three projects are needed to serve new developments in the southwest portion of the City. These three projects will be funded by the facility reserve charges collected from new development and they will be implemented as the developments proceed. The details of these projects are shown on Appendix 8-A.

The Master Plan was updated in February 2007, using revised peak wet weather design flows derived from the modified base wastewater flow projections. The model results suggest that no new capacity relief is required. The projects identified in the Master Plan and Amendment No. 2 provide sufficient relief to the major problem areas. However, it should be noted that, after the current projects are implemented, portions of the Highway 4 trunk will still be flowing full at design peak weather flow. Any additional development above that currently envisioned will therefore result in need for further upsizing.

The Master Plan will be updated every five years, or as needed to address changes in the General Plan. The CIP will be reviewed and updated annually.

In addition, during the annual review of SSO data, any identified capacity-related overflows will be evaluated and addressed.

8.4. Design Criteria

The capacity-related design criteria, including base wastewater flow and peaking factors, are included in Section 5 of the SSMP, Design and Performance Provisions.

8.5. Capacity Enhancement Measures - Capital Improvement Program

The City's Capital Improvement Program for sewer main capacity improvements is shown on Appendix 4-B.

8.6. References

Wastewater Collection System Master Plan, Final Report, Montgomery Watson Harza, April 2003.

Wastewater Collection System Master Plan, Amendment No. 2, Montgomery Watson Harza, February 2007.

Sewer Projects, City of Pittsburg FY 2004/5 – 2008/9 Five Year Capital Improvement Program.

City of Pittsburg Five Year CIP 2019/2020 - 2023/2024

Section 9. Monitoring, Measurement, and Program Modifications

9.1. Introduction

This section of the SSMP presents the City's Monitoring, Measurement, and Program Modifications.

9.2. Regulatory Requirements for Monitoring, Measurement, and Program Modifications Element of SSMP

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

9.2.1. RWQCB Requirement

Each wastewater collection system agency shall monitor the effectiveness of each SSMP element and update and modify SSMP elements to keep them current, accurate, and available for audit as appropriate.

9.2.2. GWDR Requirement

The City shall:

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

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

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

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

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

9.3. Performance Measures

The indicators that the 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 for each cause (roots, grease, debris, pipe failure, capacity, pump station failures, and other);
- Portion of sewage contained compared to total volume spilled,
- Volume of spilled sewage discharged to surface water, and
- Planned to actual performance for preventive maintenance.

9.4. Baseline Performance

The baseline performance, which shows the performance of the City's wastewater collection prior to the development and implementation of the SSMP, is shown on Table 9-1.

Trends will be added in future years as data becomes available for analysis.

Table 9-1: Baseline Performance May 1, 2007 through July 14, 2008

Performance Indicator	Mains	Lower Laterals
Number of SSOs	8	15
Volume, gallons	1,288	241
Volume Recovered, gallons	1,138	198
Portion Recovered	88%	82%
Volume to Surface Waters, gallons	120	10
Portion to Surface Waters	11%	5%
Size of System, miles	126	33
SSO Rate/100 Miles/Year	5.4	38.9
Median Volume, gallons	100	4

9.5. Performance Monitoring and Program Changes

The City will evaluate the performance of its wastewater collection system at least annually using the performance measures identified in Section 9.3, Performance Measures, above. The City will update the data and analysis of performance measures at the time of the evaluation.

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

Section 10. SSMP Program Audits

10.1. Introduction

This section of the SSMP presents the process that the City will follow to audit its SSMP program.

10.2. Regulatory Requirements for the SSMP Program Audits Section of SSMP

The summarized regulatory requirements for the SSMP are:

10.2.1. RWQCB Requirement

Each wastewater collection system agency shall conduct an annual audit of their SSMP which includes any deficiencies and steps to correct them (if applicable), appropriate to the size of the system and the number of overflows, and submit a report of such audit along with their annual report by March 15th of the following year.

10.2.2. GWDR Requirement

As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements identified in this subsection (D.13 [of the GWDR]), including identification of any deficiencies in the SSMP and steps to correct them.

10.3. SSMP Audits

The City will audit its SSMP every year. The audit will determine whether the SSMP meets the current requirements of the GWDR, whether the SSMP reflects the City's current practices, and whether the City is following the SSMP. The first audit was completed by March 1, 2009 and covered CY 2008.

The audit was conducted by a team consisting of City Public Works Department Staff. The audit team may also include members from other areas of the City, outside agencies, and/or contractors.

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

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

- A description of progress made on development of SSMP elements, and if the City is on schedule in development of the SSMP. The Audit Report will provide justification if the SSMP development is behind schedule;
- How the City implemented SSMP elements during the past year;
- The City's effectiveness in implementing the SSMP elements;
- A description of the additions and improvements made to the sanitary sewer collection system in the past reporting year; and
- A description of the additions and improvements to the SSMP that is planned for the upcoming reporting year with a projected schedule for implementation.

The Audit Report will be submitted to the RWQCB, along with the Annual Report of SSOs, by March 15th of each year. Copies of the annual Audit Reports will be maintained by the City for five years.

10.4. SSMP Updates

The City will update its SSMP at least every five years. The first update was completed in March 2014.

The City will determine the need to update its SSMP more frequently based on the results of the annual audit and the performance of its sanitary sewer system using information from the Monitoring and Measuring Program. In the event that the City decides that an update is warranted, the process to complete the update will be identified at that time. The City will complete the update within one year following identification of the need for the update.

The City Staff will seek the approval from the City Council for any significant changes to the SSMP. The authority for approval of minor changes such as employee names, contact information, or limited procedural changes is delegated to the Assistant Public Works Director.

Appendix 10-A: SSMP Audit Checklist

Audit Date_____

Audit Team Members_____

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
I	Goals	Reduce, prevent, and mitigate SSOs			
II	Organization	Designate LRO			
		Names and phone numbers for key management personnel			
		Names and phone numbers for key administrative personnel			
		Names and phone numbers for key maintenance personnel			
		Chain of communication for reporting SSOs			
III	Legal Authority	Prevent illicit discharges to sanitary sewer system			
		Require sewers and connection be properly designed and constructed			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Ensure access for inspection, maintenance, and repairs (includes public portion of lateral)			
		Limit discharge of FOG and debris that may cause blockages			
		Require the installation of grease removal devices			
		Ability to inspect FOG producing facilities			
		Enforce violations of the City's sewer ordinances			
IV	O&M Program	Maintain up-to-date maps of the sanitary sewer system			
		Describe routine preventive maintenance program			
		Document completed preventive maintenance using system such as work orders			
		Rehabilitation and replacement plan that identifies and prioritizes sanitary sewer system defects			
		Provide regular technical training for City sanitary sewer system staff			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Require contractors to provide training for their workers who work in the City's sanitary sewer system facilities			
		Maintain equipment inventory			
		Maintain critical spare part inventory			
V	Design and Performance Provisions	Design and construction standards for new sanitary sewer system facilities			
		Design and construction standards for repair and rehabilitation of existing sanitary sewer system facilities			
		Procedures for the inspection and acceptance of new sanitary sewer system facilities			
		Procedures for the inspection and acceptance of repaired and rehabilitated sanitary sewer system facilities			
VI	OERP	Procedures for the notification of primary responders			
		Procedures for the notification of regulatory agencies			
		Program to ensure appropriate response to all SSOs			
		Proper reporting of all SSOs			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Procedure to ensure City staff are aware of and follow OERP			
		Procedure to ensure City staff are trained in the OERP procedures			
		Procedure to ensure contractor personnel are aware of and follow OERP			
		Procedure to ensure contractor personnel are trained in the OERP procedures			
		Procedures to address emergency operations such as traffic and crowd control			
		Program to prevent the discharge of sewage to surface waters			
		Program to minimize or correct the impacts of any SSOs that occur			
		Program of accelerated monitoring to determine the impacts of any SSOs that occur			
VII	FOG Control Program	Public outreach program that promotes the proper disposal of FOG			
		Plan for the disposal of FOG generated within the City's service area			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Demonstrate that the City has allocated adequate resources for FOG control			
		Identification of sanitary sewer system facilities that have FOG-related problems			
		Program of preventive maintenance for sanitary sewer system facilities that have FOG-related problems			
VIII	SECAP	Identification of elements of the sanitary sewer system that experience or contribute to SSOs caused by hydraulic deficiencies			
		Established design criteria that provide adequate capacity			
		Short term CIP that addressed known hydraulic deficiencies			
		Long term CIP that addressed known hydraulic deficiencies			
		Procedures that provide for the analysis, evaluation, and prioritization of hydraulic deficiencies			
		The short and long term CIPs include schedules for the correction of each identified hydraulic deficiency			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
IX	Monitoring, Measurement, and Program Modifications	Maintain relevant information to establish, evaluate, and prioritize SSMP activities			
		Monitor implementation of the SSMP			
		Measure, where appropriate, performance of the elements of the SSMP			
		Assess success of the preventive maintenance program			
		Update SSMP program elements based on monitoring or performance			
		Identify and illustrate SSO trends			
X	SSMP Program Audits	Conduct periodic audits			
		Record the results of the audit in a report			
		Record the changes made and/or corrective actions taken			
XI	Communications Program	Communicate with the public regarding the preparation of the SSMP			
		Communicate the public regarding the performance of the SSMP			
		Communicate with tributary or satellite sewer systems			

Section 11. Communication Program

11.1. Introduction

This section of the SSMP outlines the process involved in communicating with interested members of the public regarding the development, implementation, and performance of this plan. This Communication Program also addresses communication between Antioch, DDSD, and Pittsburg.

11.2. Regulatory Requirements for the Communications Program Element of SSMP

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

11.2.1. RWQCB Requirement

The RWQCB does not require a Communication Program.

11.2.2. GWDR Requirement

The City shall:

(a) Communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

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

11.3. Communication during SSMP Development and Implementation

The City posted a notice on its website to inform interested members of the public it was developing an SSMP. The notice was:

> The City of Pittsburg is developing and implementing a Sewer System Management Plan (SSMP) pursuant to State Water Resources Control Board Order 2006-0003, Statewide General Discharge Requirements of Sanitary Sewer Systems. The goal of the SSMP is to minimize the frequency and severity of sanitary sewer overflows. The SSMP covers the management, planning, design, and operation and maintenance of the agency's sanitary sewer system. The development process began in January 2007 and was complete by August 2008. The duration of the implementation is unknown at this time. The SSMP Development Plan and Schedule are available for review at the Public Works Corporation Yard, 357 East 12th Street, during normal business hours. Interested parties can contact Hilario Mata at (925) 252-4936 or Hmata@ci.pittsburg.ca.us for additional information.

The information provided upon request to interested parties included: a copy of the SSMP Development Plan and Schedule, a copy of completed sections of the SSMP, a

copy of the draft sections of the SSMP that have been reviewed and approved for distribution by the SSMP Coordinating Committee, and contact information and/or opportunities for input into the development and implementation process.

11.4. Communicating Sanitary Sewer System Performance

The City reports SSOs electronically to the California Integrated Water Quality System (CIWQS). The electronic SSO data are available by agency or region at:

http://www.waterboards.ca.gov/ciwqs/publicreports.html.

The City will place a notice on its website that the sanitary sewer performance information is available at the CIWQS public access website.

11.5. Communication with Tributary/Satellite Sanitary Sewer Systems

The City is a satellite sanitary sewer system; it discharges into the DDSD conveyance system. The City, the City of Pittsburg, and DDSD worked together to develop and implement their SSMPs. The primary means of communication during the SSMP development and implementation phase was through the SSMP Coordinating Committee that meets regularly. Each of the three agencies was represented on the committee and could place items on the committee meeting agenda.

Once the SSMP documents have been completed and implemented, the three agencies will continue to work together. The opportunities for communication during this period will be:

- Annual SSMP Coordinating Committee meetings
- Annual Training Events including SSMP refresher training and emergency response drills
- SSMP Program Audits – The three agencies intend to form an Audit Task Force with representation from each agency for the purpose of conducting the mandated SSMP Program Audits (see Section 10 of the SSMP, SSMP Program Audits, for details).

The point of contact at each of the three agencies to communicate any SSMP-related issues is:

City of Antioch	Jeff Cook	(925) 779-6953	jcook@ci.antioch.ca.us
DDSD	Terry Spurgeon	(925) 756-1921	terrys@deltadiablo.org
City of Pittsburg	Hilario Mata	(925) 252-6966	hmata@ci.pittsburg.ca.us