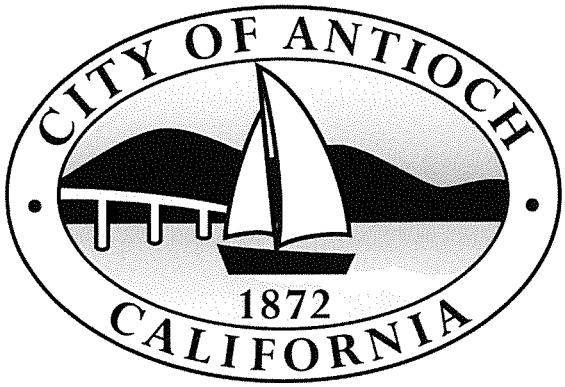
CITY OF ANTIOCH



Sewer System Management Plan

July 10, 2012

Document Version Control

This Copy of the SSMP assigned to _____

Section	Date of Current Version	Comments
1. Goals	July 10, 2012	
2. Organization	July 10, 2012	
3. Legal Authority	July 10, 2012	
4. Operation and Maintenance Program	July 10, 2012	
5. Design and Performance Provisions	July 10, 2012	
6. Overflow Emergency Response Plan	July 10, 2012	
7. Fats, Oils and Grease (FOG) Control Program	July 10, 2012	
8. System Evaluation and Capacity Assurance Plan	July 10, 2012	
9. Monitoring, Measurement, and Program Modifications	July 10, 2012	
10. SSMP Audits	July 10, 2012	
11. Communication Program	July 10, 2012	

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 started on September 2, 2007 for Region 5.

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 Antioch.

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.

Legal Cleanout – Refers to a cleanout installed on the sewer service lateral that is located within the City's easement and is constructed in accordance with the City's standards.

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) – The City has adopted the "City of Antioch, Sanitary Sewer Overflow and Backup Response Plan", prepared by DKF Solutions Group, and hereafter referred to at the SSO/Backup Plan as its OERP.

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

Property Damage Overflow – Refers to a sewer overflow or backup that damages private property.

Public Information Officer (PIO)

Regional Water Quality Control Board (RWQCB) - Refers to the Central Valley Regional Water Quality Control Board and staff responsible for protecting water resources within Region 5.

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 Antioch.

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) - Refers to written plans and procedures required by the SWRCB.

SSO/Backup Plan – refers to "City of Antioch, Sanitary Sewer Overflow and Backup Response Plan", prepared by DKF Solutions Group.

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.

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

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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 the statewide electronic reporting system.

This initial SSMP has been prepared by the City of Antioch (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:

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

System Overview

The City's wastewater collection system consists of approximately 300 miles of gravity pipeline, one small lift station, and one out-of-service lift station. It serves a population of approximately 103,000 within the City's 29 square mile service area. The wastewater is discharged into the Delta Diablo Sanitation District's (District) conveyance system for treatment. The City is responsible for the gravity sewer mains and the lower lateral serving each building (when a legal clean out is present). Delta Diablo Sanitation District is responsible for the operation and maintenance of the sewage pumping stations located on Fulton Shipyard Road @ Wilbur Avenue, and Neroly Road @ Wilbur Avenue, as well as all forced mains within the City of Antioch.

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. GWDR Requirements for Goals Element of SSMP

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

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

1.3. Goals

The goals of the City's SSMP 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

This section of the SSMP identifies City Staff who are responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements.

2.2. GWDR Requirements for Organization Element of SSMP

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

The SSMP must identify:

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

2.3. Organization

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

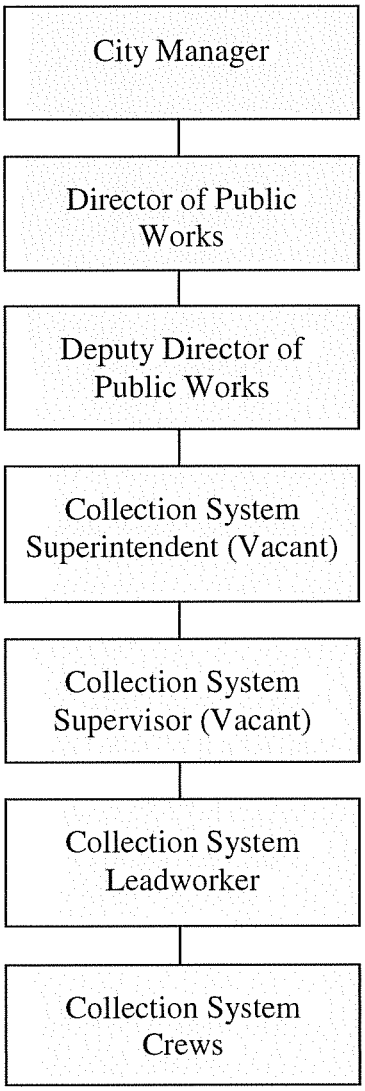
2.4. Authorized Representative

The City's Authorized Representative in all wastewater collection system matters is the Deputy Director of Public Works. He/she is authorized to submit verbal, electronic, and written spill reports to the Central Valley Regional Water Quality Control Board (RWQCB), SWRCB, Contra Costa County Health Services Agency, and OES. He/she, as the City's Designated LRO, is authorized to certify electronic spill reports submitted to the SWRCB.

The Director of Public Works is authorized to act as the City's LRO in the Deputy Director of Public Works absence. He/she is authorized to submit verbal, electronic, and written spill reports to the Central Valley Regional Water Quality Control Board (RWQCB), SWRCB, Contra Costa County Health Services Agency, and OES. He/she is authorized to certify electronic spill reports submitted to the SWRCB.

The Acting Collection Systems Supervisor is authorized to submit verbal, electronic, and written spill reports to the RWQCB, SWRCB, Contra Costa County Health Services Agency, and OES. He/she is authorized to certify electronic spill reports submitted to the SWRCB.

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



2.5. Responsibility for SSMP Implementation

The Deputy Director of Public Works 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 - Overflow Emergency Response Plan.

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

Name	Job Title	Phone Number	SSMP Responsibility	Section
Ron Bernal	City Engineer, Director of Public Works and Capital Improvements	(925) 779-6820	Legal Authority, Design Standards, Goals, Operations & Maintenance, OERP, System Evaluation & Capacity Assurance Plan	1,3,4,5,6,8
Mike Bechtholdt	Deputy Director of Public Works	(925) 779-6953	Overall Responsibility for SSMP Implementation and Maintenance, OERP, Map Updates, MMPM, Audit, and Communication	1,2,4,6,9,10,11
Cleveland Porter/Brandon Chalk	Acting Collection System Supervisor	(925) 779-6970	O&M Program, OERP, MMPM, Communication Program	4,6,9,11
Julie Haas-Wajdowicz	Administrative Analyst – Clean Water Program	(925) 779-7097	FOG – Public Outreach	7
Delta Diablo Sanitation District		(925) 756-1920	FOG, Source Control	7

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. GWDR Requirements for Legal Authority Element of SSMP

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

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 *Antioch Municipal Code* describes the City's current legal authorities. The legal authorities provided in the Municipal Code that address the specific requirements for this SSMP are summarized on Table 3-1.

There are five areas where the City's legal authority does not meet the requirements of the GWDR. The City's intended actions regarding those areas are:

- *Require that sewers and connections be properly designed and constructed.* The City will amend the Municipal Code to require that sanitary sewer facilities be designed and constructed in accordance with standards established by the City Engineer.
- *Require proper installation, testing, and inspection of new and rehabilitated sewers.* The City will amend the Municipal Code to require that new and rehabilitated sewer facilities must be properly installed, tested, and inspected. The testing and inspection standards will be in accordance with standards established by the City Engineer.
- *Clearly define City responsibility for laterals.* The City will amend the Municipal Code to define the City's responsibility for sewer service laterals.
- *Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City.* The City will amend the Municipal Code to provide

for access onto private property for the maintenance, inspection, or repair of the portions of the sewer service lateral owned or maintained by the City.

- *Control infiltration and inflow (I/I) from private service laterals.* The City will amend the Municipal Code to provide the authority to control I/I from private laterals.

The City will act to amend its Municipal Code to provide the required legal authorities by December 2013.

The City will continue to work with Delta Diablo Sanitation District to provide the legal authority for the District or its agents to permit and inspect FOG producing facilities within the City's service area.

Table 3-1: Legal Authorities

Requirement	Municipal Code Reference	Meets GWDR Requirements?
General		
Prevent illicit discharges into the wastewater collection system	6-4.108	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	6-4.109	Yes
Require that sewers and connections be properly designed and constructed		No
Require proper installation, testing, and inspection of new and rehabilitated sewers		No
Laterals		
Clearly define City responsibility		No
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City		No
Control infiltration and inflow (I/I) from private service laterals		No
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	6-4.103 6-4.112	Yes
Authority to inspect grease producing facilities	6-4.115	Yes
Enforcement		
Enforce any violation of its sewer ordinances	1-2.07	Yes

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. GWDR Requirements for Operation and Maintenance Element of SSMP

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.

4.3. Collection System Mapping

The City has a Geographical Information System (GIS) that includes the information for its wastewater collection system assets including: gravity line segments, manholes, pumping facilities and force mains. 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. A process exists for GIS updates and corrections that are initiated by the field crews.

GIS updates and corrections are incorporated annually (at a minimum), from record drawings, corrections from crews based on field observation and repairs, development plans, and CIP information/projects.

4.4. Preventive Maintenance

The elements of the City's sewer system Operation and Maintenance Program include proactive, preventive, and corrective maintenance of gravity sewers, and periodic inspection and preventive maintenance for pump stations. 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 3, 6, and 12 months.

The City has one CCTV inspection crew to proactively inspect its wastewater collection system facilities; to investigate the causes of stoppages and SSOs; and to support the Capital Improvement Program. The City has inspected all gravity sewers $\leq$ 10 inches in diameter and it is currently inspecting the condition of its larger gravity sewers. The City intends to continue its CCTV inspection program on an ongoing basis with an average inspection frequency of 10 years (actual inspection frequencies will be between 1 and 20 years).

The City has one sewer repair crew to correct problems identified by the CCTV or sewer cleaning crews. Repairs are completed in priority order.

The City conducts visual inspections of its wastewater collection system facilities during significant storm events. These facilities include sewers with known hydraulic limitations, pump stations, siphons, and creek crossings.

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.

The City uses its Lucity CMMS to plan work, initiate work orders, and document completed work.

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

4.4.2. Pump Stations

The City has a program of scheduled inspections and maintenance for the pump stations that it operates and maintains.

The preventive maintenance program consists of monthly inspection and cleaning and major maintenance as required.

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 has an ongoing sewer rehabilitation and replacement program to address 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 service charges are periodically reviewed and set based on need.

4.6. Training Program

4.6.1. City Staff

The City uses a combination of in-house classes; equipment manufacturer training; on the job training (including periodic rotation); and conferences, seminars, and other training opportunities to train its wastewater collection system staff. Recurring training opportunities are shown on Table 4-1 and 4-2.

Table 4-1: Training Opportunities

Sponsor	Event	Timeframe	References
California Water Environment Association	Annual Conference	April	www.cwea.org
	Northern Regional Training Conference	September	
	Northern Regional Safety Training	October	
	Bay Area Collection Systems Committee	Monthly/Quarterly	
	Specialty Conferences	Periodic	
Tri-State Conference	Annual Conference	September	www.tristateseminar.com
Water Environment Federation	Collection System Specialty Conference	Spring	http://www.wef.org/ConferencesTraining/ConferencesEvents/CollectionSystems/
California State University, Sacramento	Methods for Evaluating and Improving Collection System Performance		http://www.gateway.calstate.edu/extension/professional_development.cfm

Table 4-2: Training Resources (Materials)

Sponsor	Materials	Reference
California State University, Sacramento	Videos, manuals, home study courses	www.owp.csus.edu

The City requires its wastewater collection system employees in the position of Pipefitter II or higher to be certified in Collection System Maintenance by the California Water Environment Association. The certification process requires employees to demonstrate that they have participated in 12 hours 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 the City uses in the operation and maintenance of its sewer system is included in Appendix 4-C.

The City is developing a Critical Replacement Parts List. It is also developing a Replacement Parts Inventory procedure. The list and the procedure will be added as Appendix 4-D when complete. The planned completion date is December, 2012.

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 equipment – tripod, harness, and ventilation blower
5. Sanitary sewer system map book
6. Combo (jet rodder/vacuum) truck
7. 45 degree sewer cleaning nozzle and a rotating/spinning 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 pick-axe
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 hours 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 7:30 a.m. nor continue after 8:00 p.m. unless there is an emergency that warrants working outside of these hours.

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.

At the Jobsite

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

Cleaning Operation

1. Insert the debris trap.
2. Start the auxiliary engine.
3. Lower the hose, with a guide or roller to protect the hose, into the manhole and direct it into the sewer to be cleaned.
4. Start the high-pressure pump and set the engine speed to provide adequate pressure for the sewer cleaning operation.
5. Open the water valve and allow the hose to proceed up the sewer. The hose speed should not exceed 30 feet per minute.
6. Allow the hose to proceed 25% of the length of the sewer and pull the hose back.

7. Observe the nature and the quantity of debris pulled back to the manhole.
8. If there is little or no debris, allow the hose to proceed to the upstream manhole.
9. If there is moderate to heavy debris, clean the remaining portion of the sewer in steps not to exceed 25% of the length of the sewer.
10. Open the upstream manhole and verify that the nozzle is at or past the manhole.
11. The sewer has been adequately cleaned when:
12. Successive passes with a cleaning nozzle do not produce any additional debris, and
13. The sewer is able to pass a full size, six-wire skid ("proofer") for its entire length.
14. 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

15. Remove the debris from the manhole using the vacuum unit.
16. Rewind the hose on the reel.
17. Remove the debris trap.
18. Clean the mating surface and close the manhole. Ensure that the manhole is properly seated.
19. Enter the results on the Work Order.
20. Move the cleaning unit, break down and stow the traffic controls.
21. 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. Clean out debris box.
4. Turn in all completed Cleaning Work Orders to the Supervisor at end of shift.

Appendix 4-B: Rehabilitation and Replacement Program

Project Number	Project Title	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
7734	Sewer Trunk Line Rehabilitation	800	800	800	800	800
7736	Sewer Line Corrosion Rehabilitation	250	250	250	250	250
7738	Country Hills Sewer Main Replacement	800	0	0	0	0
7739	L Street Sewer Main Replacement at HWY 4	0	500	0	0	0
Annual Totals		1,850	1,550	1,050	1,050	1,050

Notes: All budget values are shown in $1,000

Sewer Main Capacity Improvements are shown in the Section X System Evaluation and Capacity Assurance Plan

Appendix 4-C: Major Sewer System Equipment Inventory

Inventory Date: July 10, 2012

Inventory/Condition Checked by: Tom Sains

Equipment Number	Major Equipment Type	Year Purchased
674	Hydroflush Truck	2000
638	Combination Hydroflush Truck	2005
697	Combination Hydroflush Truck	2011
671	CCTV Inspection Truck – (Updated the computer and camera equipment 2010)	2000
658	Ford F-250 Utility Truck with Boom	1999
677	Ford F-550 Utility Truck with Boom	2000
635	Chevrolet 3500 Flatbed Truck	1994
691	Ford F-750 Bobtail Dump Truck	2003
688	Caterpillar 430D Backhoe	2002
684	Caterpillar 924G Front Loader	2001
988	Godwin 8" Trailer-Mounted Pump	2000
989	Godwin 4" Trailer-Mounted Pump	2000
990	Pipe Trailer with Pipe and Fittings	2002
974/987	Light Trailer with Generator (2)	2000
966	Trailer Mounted Compressor	1997
	Diesel Whacker DS70 Soil Compactor (2)	2011
	MSA Altair 5X Air Monitor (4)	2011
	MSA Airhawk II Self Contained Breathing Apparatus (2)	2012
	6500 Watt and EZ2500 Watt Honda Generators	

Appendix 4-D: Critical Sewer System Replacement Parts Inventory

Inventory Date: July 18, 2012

Inventory/Condition Checked by: Tom Sains/Cleveland Porter

Part Description	Quantity in Inventory	Location
VCP Pipe – 4", 6", 8", 21", 36"		Maintenance Yard/Central Stores
PVC Pipe – 6", 8", 10", 12"		Maintenance Yard/Central Stores
Ductile Iron Pipe – 4", 6", 8", 10", 12", 16", 18"		Maintenance Yard/Central Stores
VCP, PVC, and Ductile Iron Pipe, various fittings and couplings for multiple sizes		Maintenance Yard/Central Stores
Various sizes of manhole covers and rodding inlet covers		Maintenance Yard/Central Stores

Section 5. Design and Performance Provisions

5.1. Introduction

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

5.2. GWDR Requirements for Design and Performance Provisions Element of SSMP

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

The City 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 City 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 for Design and Construction (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. GWDR Requirements for OERP Element of SSMP

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

(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. SSO/Backup Response Plan

The SSO/Backup Response Plan[1] has been adopted as the City's OERP and is included at the end of Section 6.

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[1] David Patzer, DKF Solutions Group, "City of Antioch, CA Sanitary Sewer Overflow and Backup Response Plan", Copyright © 2004-2008 or as revised.

6.4. 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 forms from the SSO/Backup Plan,
- Reviewing past maintenance records,
- Reviewing available photographs,
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs, and
- Interviewing staff that responded to the spill.

The product of the failure analysis investigation should be the determination of the root cause and the identification of the corrective actions. The completed Collection System Failure Analysis Form (Appendix 6-A) should be included in the SSO file.

6.4.1. Internal Documentation

6.4.1.1. ***Category I and II SSOs***

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

- Initial service call information
- Forms from the SSO/Backup Plan,
- Lucity 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

6.4.1.2. ***Private Lateral SSOs***

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

6.4.2. External SSO Record Keeping Requirements[2]

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;
- 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.

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[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

6.5. Post SSO Event Debriefing

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.

6.6. Equipment

Appendix 6-B provides a list of specialized equipment that is required to support the Overflow Emergency Response Plan.

6.7. Training

This section provides information on the training that is required to support the SSO/Backup Plan.

6.7.1. 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 the SSO/Backup Plan. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

6.7.2. 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.

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

6.8. 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 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-B: Equipment Required to Support OERP

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 items such as storm drain mats, plastic sheeting, and clean up materials.

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

Portable Pumps, Piping, and Hoses – Portable pumps, piping, and hoses will be used to pump around failed facilities and to recover spilled sewage. The portable pumps required to support this plan are:

- One 2 ½" pump
- One 4 inch pump
- One 8 inch pump

Two Combination Sewer Cleaning Trucks – 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.

One High Velocity Cleaning Truck – A high velocity sewer cleaning truck without vacuum capabilities to clear blockages in gravity sewers.

Flow Block Plugs, Hoses, and Air Compressor – Various sizes of plugs to contain sewage in the storm drain system preventing or minimizing the sewage from entering a body of water. Plugs contain air hoses to provide inflation with a compressor.

Confined Space Equipment – Air monitors, SCBAs, tripod, winch, body harness, ropes, and air blower will be used to facilitate an entry into a confined space.

Traffic Control Devices – Traffic cones, barricades, signs, steel traffic plates, sand, rock, and asphalt, will be used to safely direct traffic through or around an SSO event.

Section 7. Fats, Oils, and Grease (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. GWDR Requirements for FOG Control Element of SSMP

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

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

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

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

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

(d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, 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

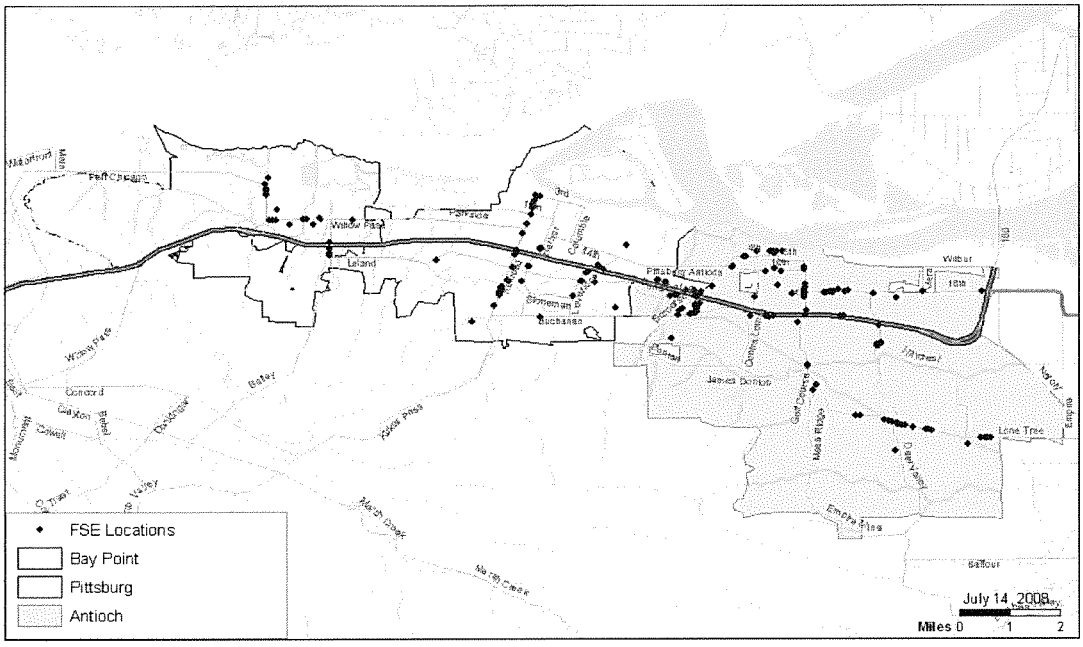
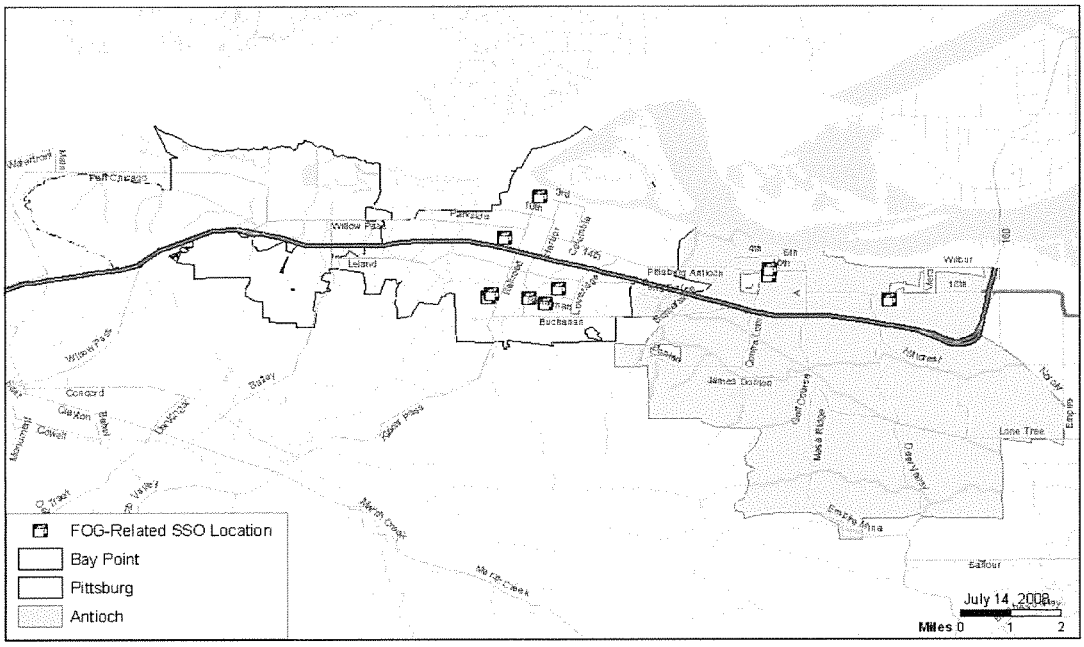


Figure 7-2: Locations of FOG-Related SSOs



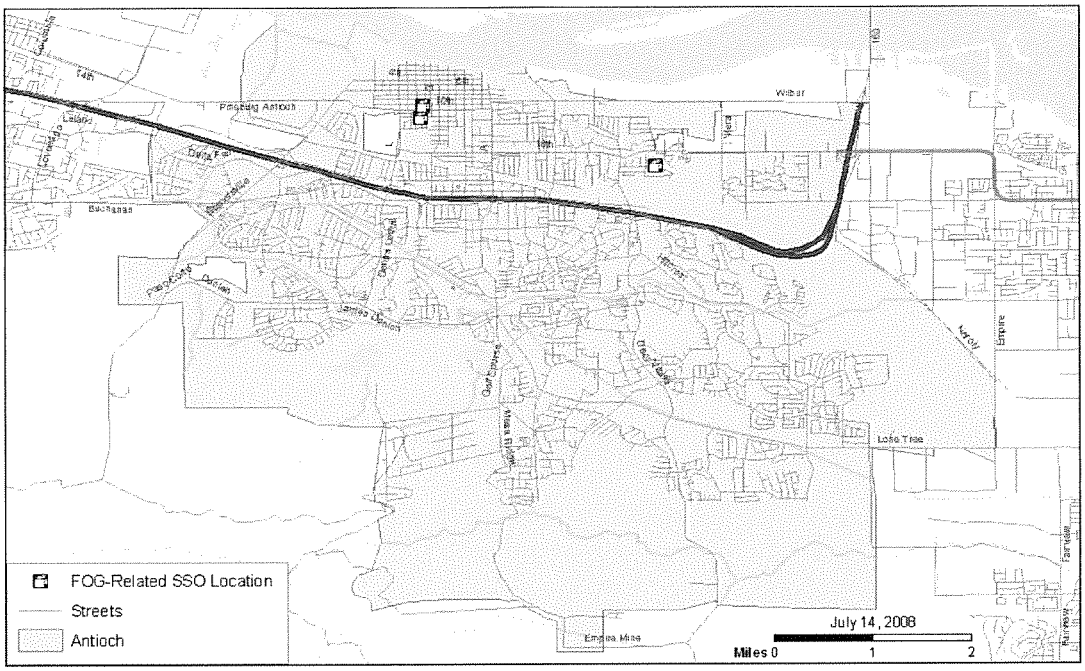
The following sections present the nature and extent of FOG-related problems in each of the three service areas.

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

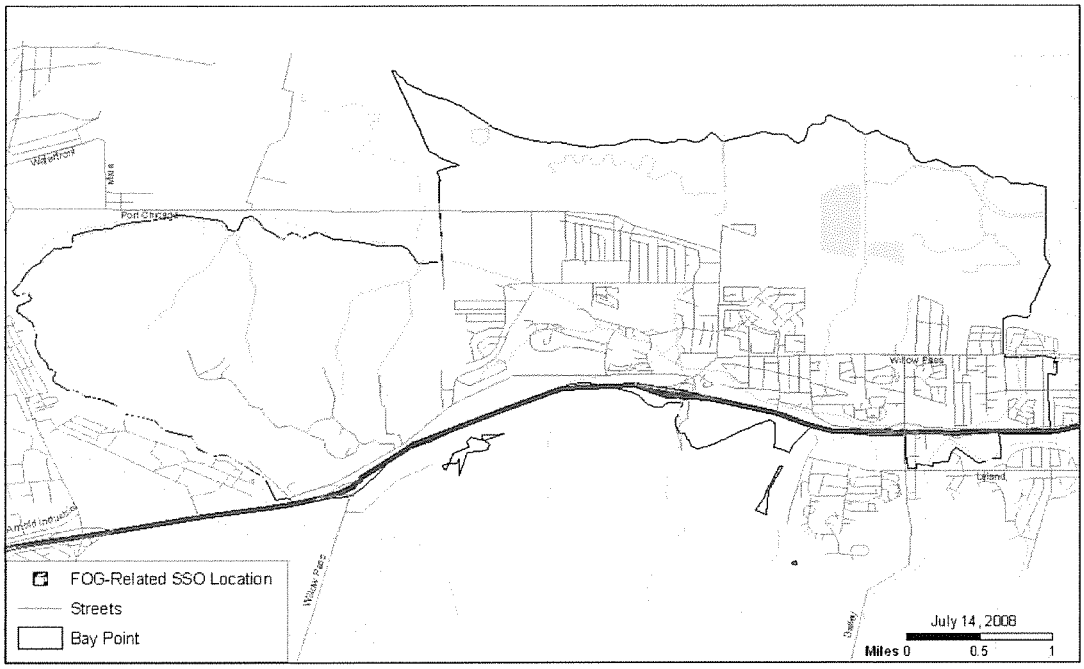


7.3.2. Bay Point Sewer System

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

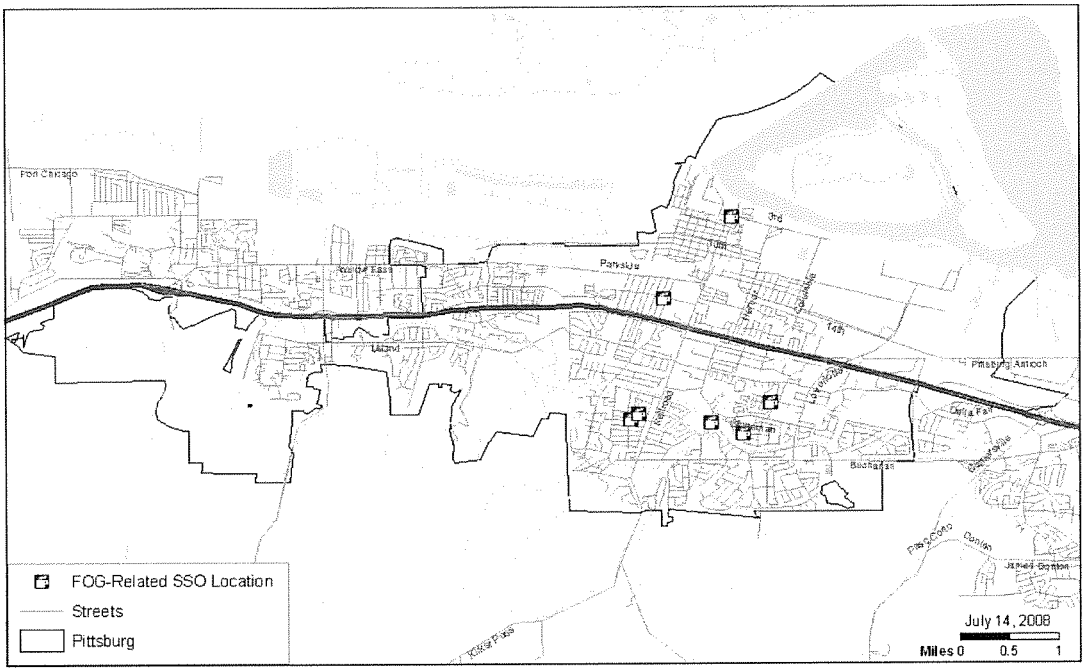


7.3.3. Pittsburg Sewer System

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 FSE Program (permits, inspections)				X
	Inspect GRD maintenance				X
	Develop common standards for GRD	X	X	X	X
	Require installation of GRD	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	
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	
	Customer survey				X

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. The list will be provided to commercial grease haulers regularly working within the service area. 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.

7.7. FOG Inspections

7.7.1. FOG Legal Authority

The District's Code and the City Municipal Codes are identified providing 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.

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 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/day.
East Bay Municipal Utility District (EBMUD)	Oakland	(510) 287-1632	Accepts grease.
Palo Alto Wastewater Treatment Plant	Palo Alto	(650) 329-2598	Accepts 5,000 to 6,000 gallons/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 (EBMUD) Approved Grease Haulers

EBMUD Approved Grease Haulers as of February 27, 2008
East Bay Municipal Utility District, Environmental Services Division
Telephone (510) 287-1651

Name	Phone Number
A-1 Septic Tank Service, Inc.	(510) 886-4455
A-1 – 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 94591	(916) 371-4160
ABC Plumbing, Heating & Air Conditioning	205 22nd Street, Sacramento, CA 95816	(916) 448-0801
Ace Plumbing, Heaing & 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
Chuck & 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
C & C Septic Service	12851 Stockton Blvd., Galt, CA 95632	(916) 366-1111
Howard's Grease Trap Pumping	8185 Cashel Way, Sacramento, CA 95829	(916) 681-0433
Liquid Environmental Solutions of CA	Corpoate 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 capacity.

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

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

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

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

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

(c) Capacity Enhancement Measures: The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, inflow and infiltration (I/I) reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.

(d) Schedule: The 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 – Collection System Master Plan

The City completed a Sewer System Master Plan in September 2003 (Master Plan). The master planning effort included flow monitoring, elevation surveys, and the development of a hydraulic model.

Flows were monitored in 15 sewer basins. The flow monitoring was conducted during December 2002 and January 2003 and captured flow data for three major storm events.

Manhole rim and invert elevations were measured for 751 of the 809 manholes in the hydraulic model.

The criteria used for judging the capacity of a gravity sewer were:

< 12 inch diameter	Maximum d/D < 0.75
12 inch diameter and larger	Maximum d/D < 0.90

The flows were estimated using the HYDRA 6.2 flow modeling software, all gravity sewers 10 inches in diameter and larger, and a 5 year – 24 hour return interval design storm

The Master Plan identified 211 gravity sewer line segments (60,100 feet) that needed additional capacity in order to handle the current flows associated with the design storm event; 24 hydraulic bottlenecks (short sections with capacity limitations) with a total length of 7,500 feet that should be corrected; and 45 gravity sewer line segments with negative slope (10,500 feet) that can be anticipated to provide ongoing maintenance issues. The Master Plan also identified 31 additional gravity sewer line segments (11,500 feet) that would need additional capacity to support anticipated development in the northwestern part of the City. The projects to address the capacity-related issues were organized in six construction phases. The recommended projects and phases are shown on Appendix 8-A.

The current status of the capacity improvement projects identified in Master Plan is shown on Appendix 8-A.

8.4. Design Criteria

The capacity-related design criteria, including base wastewater flow and peaking factors, are included in Section 4 - Design and Performance Provisions.

8.5. Capacity Enhancement Measures - Capital Improvement Program

The City prepares an annual list of capital improvement projects that includes projects to address known collection system capacity issues. Public Works Engineering Staff prioritize and select the projects to be included on the annual list. Alternatives are analyzed and schedules are established during the design process. The City's Capital Improvement Program funding for sewer main capacity improvements is shown on Table 8-1.

Table 8-1: Sewer Main Capacity Improvement Funding

Fiscal Year	Sewer Expansion Fund
2012/2013	$3,650,000
2013/2014	$2,410,000
2014/2015	$3,470,000

8.6. Schedule

The schedule for the City's capacity improvement projects is included in the City's Capital Improvement Program Detailed Budget which is included as Appendix 8-B.

8.7. References

Wastewater Collection System Master Plan, Winzler & Kelly, September 2, 2005.

Appendix 8-A: Capital Improvement Program Detailed Budget

Phase	Project	Length	Start Point	Probable Cost*	Project Status
1	1a	1,684	Lemontree Way & 'L' Street	$500,000	Under Construction
	1b	197	West of Rio Grande Drive & Santa Barbara Way	$150,000	Under Construction
	1c	7,711	County Hills Drive & Hillcrest Avenue	$3,000,000	Under Design
2	2a	6,114	East 19th Street & A Street	$1,700,000	Under Design
	2b	594	East Tregallas Road & Patricia Avenue	$180,000	Not Initiated
	2c	346	Sunset Drive & Cavallo Road	$100,000	Not Initiated
	2d	1,546	Eisenhower Way & Belle Drive	$430,000	Not Initiated
3	3a	340	'G' Street & Glouchester Court	$110,000	Not Initiated
	3b	2,252	West of Contra Loma Boulevard & Fitzuren Road	$970,000	Not Initiated
	3c	1,821	West Antioch Creek & Sycamore Drive	$890,000	Not Initiated
	3d	2,798	West 10th Street & 'O' Street	$1,500,000	Not Initiated
4	4a	3,738	Lone Tree Way & Hillcrest Avenue	$2,570,000	Not Initiated
	4b	4,147	Lone Tree Way & Sagebrush Drive	1,750,000	Not Initiated
	4c	3,303	Lone Tree Way & Mokulumne Drive	$1,400,000	Not Initiated
5	5a	1,446	West Antioch Creek & West 6th Street	$680,000	Not Initiated
	5b	1,907	North of Poppy Way & Aster Drive	$650,000	Not Initiated
	5c	2,775	Hillcrest Avenue & Lone Tree Way	$1,210,000	Not Initiated
	5d	3,994	Prewett Ranch Drive & Hillcrest Avenue	$1,650,000	Not Initiated
6	6a	2,644	Lone Tree Way & Heidorn Ranch Road	$1,820,000	Not Initiated
7	7a	5,305	North of Empire Avenue & Lone Tree Way	$2,420,000	Not Initiated
	7b	1,760	Manhole J24-8-003	$1,100,000	Not Initiated
8	8a	3,566	Manhole G24-2-002	$1,790,000	Not Initiated
	8b	4,192	Manhole H24-1-004	$1,670,000	Not Initiated
	8c	2,359	Manhole H24-6-004	$1,380,000	Not Initiated
Totals		66,539		$29,810,000	

* Probable costs are shown in August 2012 $ (Engineering News Record Construction Cost Index = 9,351)

Appendix 8-B: Schedule for Capacity Improvement Projects

Phase	Project	Length	Start Date	Project Status
1	Lemontree Way & 'L' Street	1,684	May 2012	Under Construction
1	West of Rio Grande Drive & Santa Barbara Way	197	September 2012	Under Construction
1	County Hills Drive & Hillcrest Avenue	7,711	Spring 2013	Under Design
2	East 19th Street & A Street	6,114		
2	East Tregallas Road & Patricia Avenue	594		
2	Sunset Drive & Cavallo Road	346	Fall 2013	Under Design
2	Eisenhower Way & Belle Drive	1,546	Fall 2013	Not Initiated
2	'G' Street & Glouchester Court	340	Fall 2013	Not Initiated
3	West of Contra Loma Boulevard & Fitzuren Road	2,252	Spring 2014	Not Initiated
3	West Antioch Creek & Sycamore Drive	1,821	Summer 2014	Not Initiated
3	West 10th Street & 'O' Street	2,798	Summer 2014	Not Initiated

Section 9. Monitoring, Measurement, and Program Modifications

9.1. Introduction

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

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

The requirements for the Monitoring, Measurement, and Program Modifications element of the SSMP are that 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 system, is shown on Table 9-1.

Trend and geospatial analysis will be added in future years as data becomes available for analysis.

Table 9-1: Baseline Performance January 2008 through December 2011

	Calendar Year 2008		Calendar Year 2009		Calendar Year 2010		Calendar Year 2011	
Performance Indicator	Mains	Laterals	Mains	Laterals	Mains	Laterals	Mains	Laterals
Size of System, miles	290	162.7	297	162.7	297	162.7	297	162.7
Number of SSOs	9	32	8	18	14	52	4	27
SSO Rate/100 Miles/Year	3.1	19.8	2.7	11	4.7	31.9	1.35	16.6
Volume, gallons	8,020	3,051	3,139	122	1,547	350	895	108
Portion Recovered	93%	77%	100%	72%	95%	84%	97%	77%
Portion to Surface Waters	7%	3%	0%	0%	0%	0%	0%	0%
Average Volume, gallons/SSO	891	95	392	6.8	110.5	6.7	223.8	4.3

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. 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. GWDR Requirements for the SSMP Program Audits Element

The regulatory requirements for the SSMP are:

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

10.3. SSMP Audits

The City will audit its SSMP every two years. 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 will be completed by March 1, 2010 and will cover CY 2008 and 2009.

The audit will be 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 Audit Checklist, based on the requirements in the GWDR, will be used for the audit (included in 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 - Monitoring, Measurement, and Program Modifications will be reviewed during the audit. Tables and figures or charts will be used in the Audit Report to summarize trends in the performance indicators. The Audit Report will include a list of any changes made to the SSMP resulting from the Audit findings. The Audit Report will be completed by March 1st following each audit 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 will be completed on or before March 1, 2013.

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 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 procedural changes is delegated to the Director of Public Works.

Appendix 10-A: SSMP Audit Checklist

Audit Date _____

Audit Team Members _____

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
1	Goals	Reduce, prevent, and mitigate SSOs			
2	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			
3	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			
4	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			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Provide regular technical training for City sanitary sewer system staff			
		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			
5	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			
6	OERP	Procedures for the notification of primary responders			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Procedures for the notification of regulatory agencies			
		Program to ensure appropriate response to all SSOs			
		Proper reporting of all SSOs			
		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			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Program of accelerated monitoring to determine the impacts of any SSOs that occur			
7	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			
		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			
8	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			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		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			
9	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			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Identify and illustrate SSO trends			
10	SSMP Program Audits	Conduct periodic audits			
		Record the results of the audit in a report			
		Record the changes made and/or corrective actions taken			
11	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 presents 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. GWDR Requirements for the Communications Program Element of SSMP

The Communication Program requirements from the GWDR are:

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

The Enrollee shall also 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 the following notice on its website to inform interested members of the public it was developing an SSMP. The notice was:

> The City of Antioch 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 will cover the management, planning, design, and operation and maintenance of the agency's sanitary sewer system. The development process began in January 2007 and it is expected to be 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 Yard, 1201 West 4th Street, during normal business hours. Interested parties can contact Tom Sains, Collection Systems Superintendent, at (925) 779-6962 or tsains@ci.antioch.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 District's 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.

The three agencies will continue to work together. The opportunities for communication during this period will be:

- Semi-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 - 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	Mike Bechtholdt	(925) 779-6953	mbechtholdt@ci.antioch.ca.us
DDSD	Mike Dixon	(925) 778-4040	miked@ddsd.org
City of Pittsburg	Walter Pease	(925) 756-1921	wpease@ci.pittsburg.ca.us