



**Council Meeting: September 11, 2012**

**SUBJECT: Approval of Sewer System Management Plan (SSMP)**

**BACKGROUND**

On May 2, 2006, the State Water Resources Control Board (Board) adopted Order No. 2006-0003 – Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The Order requires public agencies that own or operate sanitary sewer systems to develop and implement a SSMP aimed at reducing sanitary sewer overflows (SSOs). It also requires these agencies to report all SSOs to the Board. The SSMP must include 11 elements demonstrating how the agency constructs, manages, operates and maintains its sanitary sewer system. These elements are described in the attached SSMP and are summarized below:

1. Goals of the SSMP
2. Organization and chain of communications for SSMP
3. Legal Authority to operate and maintain its sewage collection system
4. Sewer Collection System Operation & Maintenance Program
5. Sewer Collection System Design and Performance Provisions
6. Sewer Overflow Emergency Response Plan
7. Fats, Oil and Grease Control Program
8. Collection System Evaluation and Capacity Assurance Plan
9. Monitoring, Management and Plan Modifications
10. SSMP Program Audits
11. Communication Program with Public and Stakeholders

Finally, the Order requires that the governing body for each agency approve its agency's SSMP at a public hearing. This approval must be given, at two separate stages, during the development of the agency's SSMP. The Council approved the first part that addresses the Plan and Schedule for the development of the SSMP on August, 21, 2007 (RTC #07-283). This report recommends the adoption of the SSMP in its entirety to meet the second approval requirement.

**EXISTING POLICY**

The Environmental Management Chapter of the General Plan includes, in part, the following Goal and related Policy:

**Goal EM-6: Effective Wastewater Collection System**

Continue to operate and maintain the wastewater collection system so that all sewage and industrial wastes generated within the City are collected and conveyed under safe and sanitary conditions to the Water Pollution Control Plant.

## **DISCUSSION**

Sanitary sewers often contain high levels of pathogenic organisms and toxic pollutants. When overflows of the system occur, untreated sewage can flow into streets, onto properties, and through the storm drain system into local waterways. Consequently, SSOs have the potential to pollute surface water and groundwater, threaten public health, adversely affect aquatic life and impair the recreational use and aesthetic enjoyment of surface waters. There are many causes of SSOs. Some major causes of SSOs include grease and root blockages in sewer lines, sewer line damage, manhole structure failures, pump station outages or failures, excessive storm or ground water inflow and infiltration, sewer system aging, various operation and maintenance issues and/or insufficient capacity. Many SSOs are preventable with effective management, operation and maintenance of the sewer system. The purpose of the City's SSMP is to implement source control measures and improve the management, operation and maintenance of the sewer system in order to reduce the number of SSOs and mitigate the impacts of the SSOs that do occur.

The Environmental Services Department (ESD) in collaboration with the Department of Public Works has prepared the City's SSMP (Attachment A). The plan will be posted on the City's website after Council approval.

In addition to compliance with the Order, the plan will work toward reducing SSOs by improving the design construction, management, operation, and maintenance of the City's sanitary sewer system. The document will be re-evaluated regularly and improvements will be implemented as deemed appropriate.

## **FISCAL IMPACT**

There are no fiscal impacts at this time. Approval of the SSMP does not require additional funding. Any additional funding needs as a result of changes in the SSMP will be quantified and brought forward during future budget processes.

## **PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, and the Sunnyvale Senior Center, Community Center and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk and on the City's website.

ESD conducts on-going public outreach and education to residents and businesses related to sanitary sewer overflows, preventing grease blockages and Best Management Practices for handling of grease waste. Residential education on the negative impacts of discharging fats, oil, and grease into the sanitary sewer system includes the distribution of flyers, the provision of information at

community events, and the use of bill inserts. Additionally, ESD inspects all food service facilities annually for compliance with grease removal device maintenance requirements, and distributes educational materials during these inspections. The Community Development Department also conducts the plan checks for all new and remodeling restaurants and other food service facilities to determine proper grease removal device sizing.

**ALTERNATIVES**

1. Approve the Sewer System Management Plan as submitted in Attachment A.
2. Do not approve the Sewer System Management Plan.

**RECOMMENDATION**

Staff recommends that Council approve Alternative 1: Approve the Sewer System Management Plan as submitted in Attachment A.

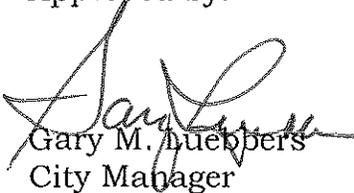
Reviewed by:



John Stufflebean, Director, Environmental Services

Prepared by: Mansour Nasser, Water & Sewer Division Manager

Approved by:



Gary M. Luebbers  
City Manager

ATTACHMENT A: Sewer System Management Plan

# CITY OF SUNNYVALE



## Sewer System Management Plan

Updated August 2012



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*Note: Section numbers are based on SWRCB General Waste Discharge Requirements (GWDR), dated May 2, 2006*

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# INTRODUCTION

## ***A. Sewer System Management Plan***

This Sewer System Management Plan (SSMP) has been prepared by the City of Sunnyvale Environmental Services Department. It is a compendium of the policies, procedures, and activities that are included in the planning, management, operation, and maintenance of the City's sanitary sewer system.

This SSMP is intended to meet the requirements of the San Francisco Bay Regional Water Quality Control Board and the State Water Resources Control Board.

The structure (section numbering and nomenclature) of this SSMP follows the General Waste Discharge Requirements for Wastewater Collection Agencies (GWDR), State Water Resources Control Board Order Number 2006-0003 dated May 2, 2006. The requirements of the San Francisco Bay Regional Water Quality Control Board, where they differ from the GWDR, are also included.

## ***B. Sanitary Sewer System Facilities***

### ***City of Sunnyvale***

The City operates a sanitary sewer system that serves a residential population of approximately 140,000 (daytime population approximately 230,000) in a 23 square mile service area. The sewer system consists of 283 miles of gravity sewers (approximately 6,886 line segments), approximately 9800-feet of 12-inch force main, and five pump stations. The sewers range in size from 6-inch to 42-inch diameter.

The City provides maintenance, repair, and replacement of private sanitary sewer laterals within the City if there is a City owned tree located near the lateral. If there is no City tree, then the lateral remains the responsibility of the property owner. However, the City will provide maintenance services to laterals located within the public right of way upon request, as a courtesy service to the residents of Sunnyvale, only if the area and the property line cleanout are accessible to City staff and equipment. The City does not own and will not maintain any of the upper portion of the service lateral, from the property line to the residence.

### ***Rancho Rinconada***

The City also owns and maintains the wastewater mains in the incorporated area in the City of Cupertino known as the "Ranch Rinconada area".

Maintenance, repair, and replacement of the sanitary sewer upper laterals within the Rancho Rinconada area are the responsibility of the property owner. The City will clear stoppages in the lower lateral, from the property line clean-out to the main, as a courtesy to the resident if the cleanout is accessible to City staff and equipment. The City will make some point repairs in the lower lateral as warranted. The City will not install any type of cleanout.

Information regarding sewer system piping by size and material of construction is presented in Table 1-3. Information regarding laterals is presented in Table 4. Data regarding the age of the City’s sewer system is not available; however, the average age is estimated to be 60 years based on the town’s incorporation in 1902 and its historical population growth.

**Table Intro-1. Sewer System Size Distribution - Sunnyvale**

Diameter	Total Number Line Segments	Portion of Sewer System
Unknown	129	1.9%
2 inch	3	0.04%
4 inch	50	0.73%
6 inch	1113	16.2%
8 inch	3713	53.9%
10 inch	700	10.2%
12 inch	495	7.2%
14 inch	43	0.62%
15 inch	172	2.5%
16 inch	13	0.12%
18 inch	151	2.2%
20 inch	1	0.14%
21 inch	91	1.3%
22 inch	1	0.14%
24 inch	63	0.91%
27 inch	68	0.99%
30 inch	1	0.14%
33 inch	32	0.46%
36 inch	7	.10%
39 inch	21	0.30%
42 inch	3	0.44%
48 inch	16	0.23%
<b>Grand Total</b>	<b>6886</b>	<b>100.0%</b>

Includes one line segment with Owner unspecified.

Source: City of Sunnyvale GIS, 2005.

**Table Intro-2. Sewer System Materials of Construction - Sunnyvale**

Material	Total Number Line Segments	Portion of Sewer System
CIP	34	0.49%
CONC	10	0.14%
CSP, STEEL, RCP, & PCC	60	0.87%
DIP	5	0.07%
PIP	171	2.5%
PVC	22	0.32%
ACP	5	0.07%
VCP	6535	94.9%
SS & SSP	40	0.58%
Unknown	4	0.06%
<b>Grand Total</b>	<b>6886</b>	<b>100.0%</b>

Includes one line segment with Owner unspecified.

Source: City of Sunnyvale GIS, 2005.

**Table Intro-3. Sewer System Size Distribution - Rancho Rinconada**

Diameter	Total Linear Feet	Portion of Sewer System
6 inch	42,480	54.96%
8 inch	25,030	32.39%
10 inch	4,005	5.19%
12 inch	2,230	2.88%
15 inch	3,540	4.58%
<b>Grand Total</b>	<b>77,285</b>	<b>100.0%</b>

Source: Rancho Rinconada wastewater block map.

Records indicate all piping is VCP.

**Table Intro-4. Laterals**

	Number of Laterals
City of Sunnyvale	27,600 est.
Rancho Rinconada	1,871

## **C. Definitions, Acronyms, and Abbreviations**

***American Society for Testing and Materials (ASTM)***

***American Water Works Association (AWWA)***

***Bay Area Clean Water Agencies (BAWCA)***

***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 a 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.

***California Emergency Management Agency (Cal EMA)***

Refers to the California Emergency Management Agency. All Category 1 SSOs must be reported to Cal EMA. (Formerly called the Office of Emergency Services, or OES).

***Capital Improvement Plan (CIP)***

Refers to the document that identifies future capital improvements to the City's sanitary sewer system.

***Capacity, Management, Operations, and Maintenance (CMOM)***

Refers to the federal (USEPA) program for regulating operation of sewer collection systems. CMOM requirements were incorporated into draft regulations that were subsequently withdrawn. The SSMP and its requirements closely resemble the CMOM program.

***Cast Iron Pipe (CIP)***

***City***

Refers to the City of Sunnyvale.

***Property Line Clean Out***

Refers to the clean out that is typically located on the building lateral near the sidewalk or at the edge of the City right-of-way. The property line clean out is used to provide access to maintain the lower lateral.

***Closed Circuit Television (CCTV)***

Refers to the process and equipment that is used to internally inspect the condition of gravity sewers.

***Computerized Maintenance Management System (CMMS)***

Refers to a database application used manage and document maintenance activities of a collection system.

***Concrete Pipe (CONC)***

***Corrugated Steel Pipe (CSP)***

***Department of Public Works (DPW)***

***Dispatch***

Dispatch refers to Sunnyvale 2 Communications.

***Drain Inlet (D/I)***

***Ductile Iron Pipe (DIP)***

***Environmental Services Department (ESD)***

Refers to City of Sunnyvale Environmental Services Department, which includes the City's Water and Sewer Services, Water Pollution Control Plant, Solid Waste and Recycling, and Regulatory Compliance Divisions.

***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.

***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.

***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, with revised monitoring and reporting program (Order WQ 2008-0002-EXEC) dated 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 that can be used to determine the longitude and latitude of sanitary sewer overflows for use in meeting CIWQS reporting requirements.

***High Density Polyethylene Pipe (HDPE)***

***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***

Refers to the piping that conveys sewage from a building to the City sewer system. The distinction is sometimes made between the upper lateral (from building to property line) and the lower lateral (from property line to the sewer main).

***Legally Responsible Official (LRO)***

Refers to the individual designated by the City to certify SSO reports on the CIWQS system. The LRO must be formally designated by the City and registered with the SWRCB

***Manhole (M/H)***

***Million Gallons per Day (MGD)***

***Monitoring, Measurement, and Plan Modifications (MMPM)***

***Municipal Operations Center (M.O.C.)***

***Sunnyvale 2 and DPS Communications***

The City of Sunnyvale operates two communication centers. During normal business operations, calls are received by Sunnyvale 2. During all other hours, calls are received by Sunnyvale DPS Communications, the City's 911 system which is staffed 24/7. For the purpose of this SSMP, both will be referred to as SV2 Communications.

***Operations and Maintenance (O&M)***

***Overflow Emergency Response Plan (OERP)***

For the purpose of this SSMP, this plan will be referred to as the Sanitary Sewer Overflow Response Plan (SSORP).

***Palo Alto Regional Water Pollution Control Plant (PARWPCP)***

***Polyvinylchloride Pipe (PVC)***

***Portland Cement Concrete Pipe (PCC)***

***Preventative Maintenance (PM)***

Refers to maintenance activities intended to prevent failures of the sanitary sewer system facilities (e.g. cleaning, CCTV, repair).

***Property Damage Overflow***

Refers to a sewer overflow or backup that damages a property owner's premises.

***Public Services Division (PSD)***

***Regional Water Quality Control Board (RWQCB)***

Refers to the San Francisco Bay Regional Water Quality Control Board.

***Reinforced Concrete Pipe (RCP)***

***Sanitary Sewer Overflow Response Plan (SSORP)***

Refers to the City's Overflow Emergency Response Plan which is a component of this SSMP that addresses the City's response to SSO events.

***Sanitary Sewer Overflows (SSOs)***

Refers to the overflow or discharge of any quantity of partially treated or untreated wastewater from the sanitary sewer system at any point upstream from the wastewater

treatment plant. SSOs are typically caused by blockages, pipe failure, pump station failure, or capacity limitation.

***Sanitary Sewer System***

Refers to the portion of the sanitary sewer facilities that are owned and operated by the City of Sunnyvale.

***Sewer System Management Plan (SSMP)***

***SSO Database***

Refers to the City of Sunnyvale database that is used to track and analyze SSOs.

***SSO Report***

Refers to sanitary sewer overflow report

***Standard Dimension Ratio (SDR)***

Refers to the ratio of pipe diameter to pipe wall thickness in plastic pipes.

***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.

***Supervisory Control and Data Acquisition (SCADA)***

Refers to the system that is employed by the City to monitor the performance of its pump stations and to notify the operating staff when there is an alarm condition that requires attention.

***System Evaluation and Capacity Assurance Plan (SECAP)***

***Vitrified Clay Pipe (VCP)***

***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. May also be referred to as surface water(s) or State waterway.

***Wastewater Division (WWD)***

Refers to the City of Sunnyvale, Public Services Department, Wastewater Division.

***Wastewater on-call duty***

Refers to the City of Sunnyvale Wastewater on-call worker.

***Welded Steel Pipe (WSP)***

***WPCP (Water Pollution Control Plant)***

**D. 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](http://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.waterboards.ca.gov/sanfranciscobay/publications\\_forms/documents/SSMP%20Development%20Guide%20-%20Final.pdf](http://www.waterboards.ca.gov/sanfranciscobay/publications_forms/documents/SSMP%20Development%20Guide%20-%20Final.pdf)

***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, with Revised Monitoring and Reporting Program, Order WQ-2008-0002-EXEC

*General Order:*

[www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/water\\_quality/2006/wqo/wqo2006\\_0003.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2006_0003.pdf)

*Revised Monitoring and Reporting Program*

[www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/water\\_quality/2008/wqo/wqo2008\\_0002\\_exec.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2008/wqo/wqo2008_0002_exec.pdf)

# SECTION I. GOALS

## ***A. Introduction***

This section identifies goals the City has set for the management, operation and maintenance of the sewer system and discusses the role of the SSMP in supporting these goals. These goals provide focus for City staff to continue the high-quality work to implement the improvements in the management and maintenance of the City's wastewater collection system.

## ***B. Regulatory Requirements***

### ***RWQCB Guidance:***

The collection system agency shall, at a minimum develop goals to properly manage, operate, and maintain all parts of its collection system, to provide adequate capacity to convey peak wastewater flows, to minimize the frequency of Sanitary Sewer Overflows (SSO), and to mitigate their impacts.

### ***SWRCB Requirement:***

The collection system agency 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.

## ***C. Goals for the Wastewater Collection System***

Providing safe, responsive, and reliable sewage conveyance is a key component of the goals and objectives of the City's Environmental Services Division, Wastewater Collections Section.

The following goals have been adopted by the City's Wastewater Collections Section. These goals outline responsibilities and provide direction and understanding for all sewer maintenance and cleaning activities.

- Provide for the reliable collection of sewage throughout the City to protect public health and the environment, to prevent sanitary sewer overflows and to minimize odors.
- Ensure all sanitary sewage is collected and transported to the City's Water Pollution Control Plant.
- Maintain and repair the City's Sanitary Sewer Collection System in a cost-effective, safe, reliable and timely manner.
- Comply with all federal, state, and local laws and regulations pertaining to sanitary sewer collection operation and maintenance.

- Respond to emergency events and provide assistance for residents and businesses.
- Provide contracted sewer collection services in the Rancho Rinconada area.
- Provide administrative and support services to promote customer satisfaction and confidence. Continue to professionally manage, operate and maintain all parts of the sewer collection system.
- Provide adequate capacity to convey peak flows.
- Minimize the frequency of SSOs which can pose a threat to public health.
- Mitigate the impact of SSOs.

This SSMP supplements and supports the City's existing Maintenance and Operations Program and goals by providing high-level, consolidated guidelines and procedures for all the aspects of the City's wastewater system management. The SSMP will contribute to the proper management of the collections system and assist the City in minimizing the frequency and impacts of SSO's by providing guidance for appropriate maintenance, capacity management and emergency response

#### ***D. Goals, Policies, and Action Statements:***

The City's General Plan contains Goals, Policies and Action Statements applicable to the wastewater collection system. Refer to the City's General Plan web page at:

<http://sunnyvale.ca.gov/CodesandPolicies/GeneralPlan.aspx>

NOTE: In May 2011, the City issued a draft of its new Consolidated General Plan. Revised goals and policies applicable to the sewer system appear in the executive summary of that document and in Chapter 7, Environmental Management. The draft Consolidated General Plan is available at <http://sunnyvale.ca.gov/CodesandPolicies/GeneralPlanNEW.aspx>

## SECTION II. ORGANIZATION

### **A. Introduction**

This section of the SSMP identifies City staff responsible for implementing this SSMP, responding to SSO events and meeting the SSO notification and reporting requirements. It also includes the designation of the Legally Responsible Official (LRO), who is responsible completing and certifying spill reports submitted to the SWRCB's on-line reporting system (CIWQS). This section fulfills the organization requirement of both RWQCB (Element 2) and the SWRCB (Element 2) SSMP requirements.

### **B. Regulatory Requirements**

#### **RWQCB Guidance:**

The collection system agency's SSMP must identify staff responsibility for implementing measures outlined in the SSMP, including management, administration and maintenance positions. Identify the chain of communication for reporting and responding to SSOs.

#### **SWRCB Requirement:**

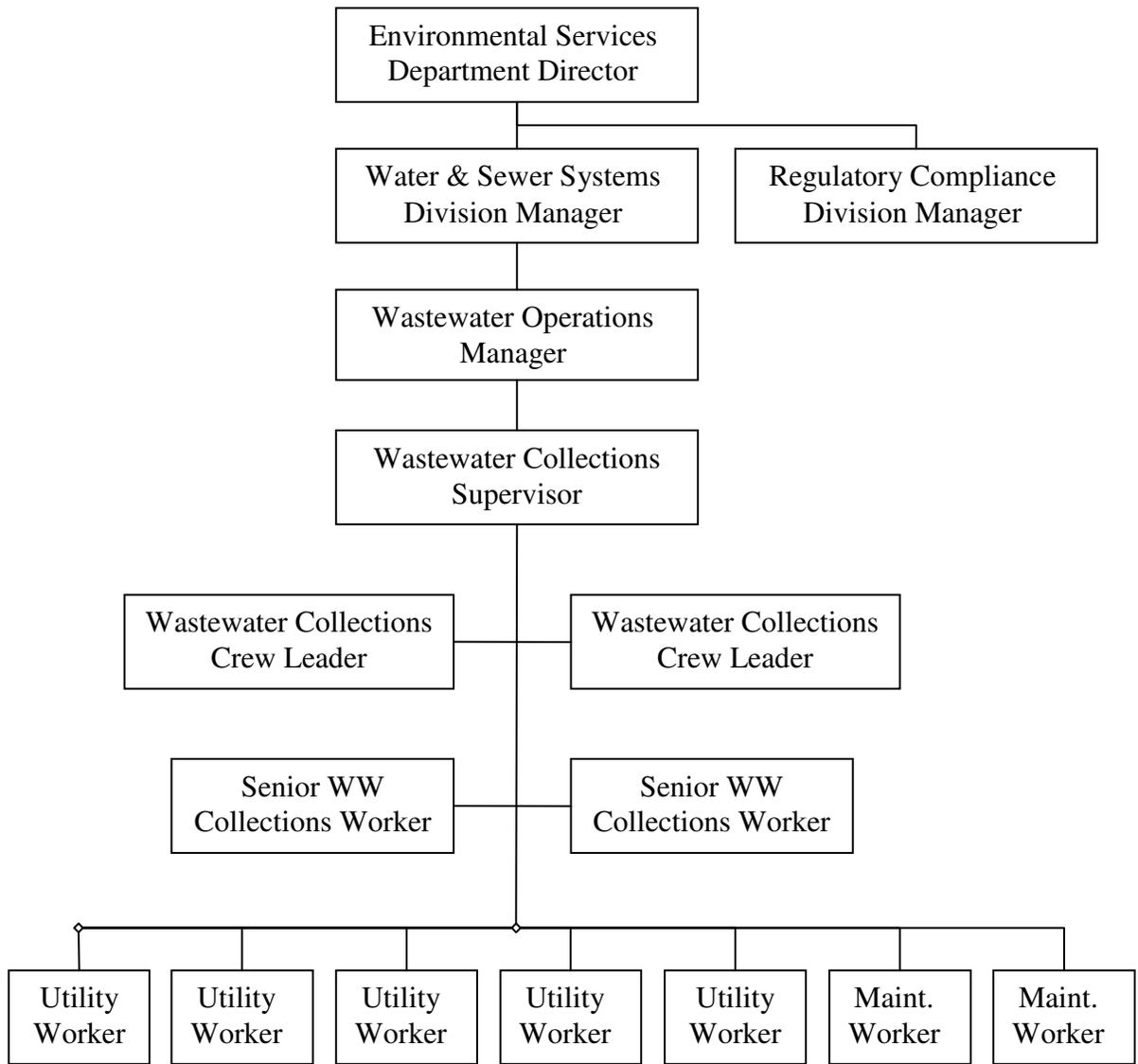
The collection system agency's SSMP must identify:

1. The name of the responsible or authorized representative;
2. The names and telephone numbers for management, administration, 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 the California Emergency Management Agency (Cal EMA)).

### **C. Organization and Staffing**

The organization chart for the management, operation and maintenance of the City's wastewater collections system is shown on Figure II-1. General Responsibilities are described below. Table II-1 is a listing of telephone numbers for key positions.

**Figure II-1. Organization Chart for Wastewater Collections**



**Table II-1. Contact Numbers for Key ESD Positions**

<b>Contact</b>	<b>Telephone Number</b>
City Hall	408-730-7500
Answer Point / Dispatch	408-730-7510
Department of Public Safety	408-730-7100
Wastewater Operations Manager	408-730-2781
Wastewater Collections Supervisor	408-730-7566
Wastewater Collections Crew Leader	408-992-5846
Wastewater on-call staff	408-859-3559
Water and Sewer Systems Div. Manager	408-730-7558
Environmental Services Dept. Director	408-730-7420

**Description of General Responsibilities**

**Environmental Services Director**

Under administrative direction, provides overall management of the Environmental Services Department, consisting of the Water Pollution Control Plant, Water and Sewer Services, Solid Waste, and Regulatory Compliance Divisions. Along with the City Manager, City Attorney, and other Department heads, serves as a member of the City’s Executive Leadership Team.

**Water and Sewer Systems Division Manager**

Under administrative direction, provides general direction to direct the work of the Water and Wastewater Operations Programs; acts as the Environmental Services Director in the Director’s absence or at the Director’s discretion.

**Wastewater Operations Manager**

Under general direction from the Water and Sewer Systems Division Manager, the Wastewater Operations Manager manages operation of the City’s wastewater and stormwater collection systems. This is a management level classification in which the incumbent plans, organizes, directs, and coordinates the activities of the wastewater and stormwater collection system programs.

**Wastewater Collections Supervisor**

Under direction, supervises the activities of lead personnel, field crews and individuals in the maintenance and repair of public utilities that are operated by the Environmental Services Department. Positions in this classification are characterized by an intermediate structure where work activities change considerably from day to day, or even hour to hour, but usually within

some reasonable or expected bounds. Contacts are regularly made both inside and outside the organization at all organizational levels, and require considerable tact, discretion and persuasion to obtain willing action and consent.

### **Wastewater Collections Crew Leader**

Under direction, works with and leads field crews and individuals in the maintenance and repair of public utilities including, but not restricted to, storm drains, sanitary sewers and water systems; does related work as required.

Incumbents in this classification will normally receive assignments from individuals in the higher-rated classification of Wastewater Collections Supervisor, although they may also receive direction from the managerial classification of Wastewater Operations Manager.

### **Senior Wastewater Collections Worker**

Under general direction, performs skilled manual tasks in the maintenance of sanitary sewers, storm drains, water and recycled water distribution facilities, and supporting facilities; operates motorized equipment; leads small field crews; performs related work as required.

### **Utility Worker / Maintenance Worker I and II**

Under general supervision, performs a variety of semi-skilled and some skilled manual tasks in the construction, repair and maintenance of sanitary sewer and storm drain facilities; operates motorized equipment; performs related work as required.

### **Crew Assignments:**

The Wastewater Operations Manager oversees the entire Program. The Wastewater Collections Supervisor oversees the day to day operation. The Wastewater Collections Crew Leaders and Senior Wastewater Collections Workers generally rotate from leading the construction crew to operating hydro-flushers. Hydro-flushing and general maintenance duties are shared amongst Senior Utility Workers and the Utility/Maintenance Workers.

The construction crew makes needed repairs of the city sanitary sewer system which includes but is not limited to mains, laterals, pump/lift stations, manholes, and repairs or installs property line clean outs. The construction crew generally consists of three employees.

The hydro-flushing crews perform all cleaning of City sewer mains. Hydro-flushing uses high pressure water to clean the sewer mains. A hydro-flushing crew consists of two employees on a hydro-flushing truck.

The on-call service tech receives and responds to sanitary and storm sewer calls and emergency response requests for wastewater and other issues as required.

One employee is assigned to locating duties, and performs all city utility USA locates. Utilities owned and maintained by the City include sewer, storm and water mains, street light conduit, as well as other City owned subsurface infrastructure. This employee also shares the televising of wastewater laterals duties.

### **Legally Responsible Official**

The City's authorized representative in all wastewater collection system matters is the Environmental Services Director. The Water and Sewer Systems Division Manager is authorized to act in Director's absence. There are currently three individuals designated as Legally Responsible Official (LRO) for purposes of CIWQS reporting and certification: the Wastewater Operations Manager (primary), the Water and Sewer Systems Division Manager (backup), and the Environmental Services Department Director.

### **Responsibility for SSMP Implementation**

The Environmental Service Director is responsible for implementing all elements of this SSMP. The Environmental Service Director coordinates with the Public Works Director regarding construction of new City-owned sewer facilities.

### **SSO Response and Reporting Chain of Communication**

The SSO reporting process is described in Section VI: Overflow Emergency Response Plan. Figure VI-1 depicts the chain of communication for responding to and reporting SSO's from observation of an SSO to reporting the SSO to the appropriate agencies. Table II-1 above lists the contact phone numbers for the parties involved in the chain of communication.

## SECTION III. LEGAL AUTHORITY

### A. Introduction

This section of the SSMP discusses the City's Legal Authority, including the Municipal Code and agreements with other agencies.

### B. Regulatory Requirements

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

#### **RWQCB Guidance:**

Each wastewater collection system agency shall, at a minimum, describe its legal authority, through sewer use ordinances, services agreements, or other legally binding procedures to:  
Control infiltration/inflow (I/I) from satellite wastewater collection systems and laterals,  
Require proper design and construction of new and rehabilitated sewers and connections, and  
Require proper installation, testing, and inspection of new and rehabilitated sewers.

#### **GWDR Requirement:**

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

- (a) Prevent illicit discharges into its 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 [from GWDR FOG provisions], and
- (g) Authority to enforce sewer-related ordinances

### C. Sunnyvale Municipal Code

The *Sunnyvale Municipal Code*, Chapter 12, describes the City's current legal authorities. The legal authorities provided by the Municipal Code and other sources that address the regulatory requirements are summarized in Table III-1.

**Table III-1. Summary of Legal Authorities in Municipal Code and Other Sources**

<b>Requirement</b>	<b>Municipal Code Reference</b>	<b>Meets GWDR Requirements</b>
<b><i>General</i></b>		
Prevent illicit discharges into the wastewater collection system	Chapter. 12.12.020	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	Chapter 12.12.020 Chapter 12.12.025 Chapter 12.12.026	Yes
Require that sewers and connections be properly designed and constructed	Chapter 12.08.010 Chapter 12.08.020 Chapter 16.24	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	Chapter 16.24 Chapter 18-12-150 City Std. Specs.	Yes
<b><i>Maintenance and Inspection, including Laterals</i></b>		
Clearly define City responsibility and policies	City Council Policy No. 3.3D.6	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City	Chapter 18.08.040 (f), 18.12.150 (a) and 18.12.080(a)	Yes
Control infiltration and inflow (I/I) from private service laterals (RWQCB Guidance)		See Text
<b><i>FOG Source Control</i></b>		
Requirements to install grease removal devices, design standards for the grease removal devices, maintenance, BMP, record keeping and reporting requirements	Chapter 12.12.026	Yes
Authority to inspect grease producing facilities	Chapter 12.12.026 Chapter 12.12.260	Yes
<b><i>Enforcement</i></b>		
Enforce any violation of sewer ordinances	Chapter 12.12.050 Chapter 12.12.060 Chapter 12.12.080 Chapter 12.18.090	Yes

The one area where the City’s legal authority does not meet the RWQCB guidance for SSMP development is in the control infiltration and inflow (I/I) from private service laterals. (The GWDR has no equivalent requirement). However, inflow and infiltration does not appear to be a significant issue for the City. Average daily flows during rain events are typically only 10-30% above dry weather flows, and the sewer system has not historically experienced capacity related SSOs. In addition, with its large area of oxidation ponds providing flow equalization, the WPCP readily manages peak wet weather flows without the need for “blending”. The Wastewater Collection System Master Plan effort which began development

in early 2012, includes a task to evaluate sewer system I/I, and to make cost-effective improvements to reduce I/I.

#### ***D. Agreements with Satellite Agencies***

The City has informal undocumented mutual aid agreements with the neighboring Cities of Santa Clara, Los Altos, and Mountain View. It also has a contract with a local underground construction company for general emergency services. The City will continue to assist any surrounding cities when requested as able to do so.

## **SECTION IV. OPERATIONS AND MAINTENANCE PROGRAM**

### **A. Introduction**

This section is intended to provide an overview of the City's sewer system operations and maintenance (O&M) program. Note: the RWQCB refers to this element as "Measures and Activities".

### **B. Regulatory Requirements**

#### **RWQCB Guidance (Measures and Activities)**

- (a) *Collection System Map*: Each wastewater collection system agency shall maintain up-to-date maps of its wastewater collection system facilities.
- (b) *Resources and Budget*: Each wastewater collection system agency shall allocate adequate resources for the operation, maintenance, and repair of its collection system.
- (c) *Prioritized Preventive Maintenance*: Each wastewater collection system agency shall prioritize its preventive maintenance activities.
- (d) *Scheduled Inspections and Condition Assessment*: Each wastewater collection system agency shall identify and prioritize structural deficiencies and implement a program of prioritized short-term and long-term actions to address them.
- (e) *Contingency Equipment and Replacement Inventories*: Each wastewater collection system agency shall provide contingency equipment to handle emergencies, and spare/replacement parts intended to minimize equipment/ facility downtime.
- (f) *Training*: Each wastewater collection system agency shall provide training on a regular basis for its staff in collection system operations, maintenance and monitoring.
- (g) *Outreach to Plumbers and Building Contractors*: 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.

#### **GWDR Requirement (Operations and Maintenance)**

- (a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;
- (b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;

- (c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;
- (d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and
- (e) Provide equipment and replacement part inventories, including identification of critical replacement parts.

### ***C. Operations and Maintenance Program***

RWQCB guidance and GWDR requirements for the Operations and Maintenance Program generally conform to each other. The following descriptions respond first to the SWRCB requirements RWQCB guidance that is not addressed by the GWDR requirements follow at the end of this section.

#### ***Collection System Maps***

The City has a Geographical Information System (GIS) that includes information for wastewater collection system assets including: gravity line segments, manholes, pumping facilities, and pressure pipes (force mains). The City also has information in its GIS for the storm drainage system. The GIS information is available to internal City staff.

The field crews use hard copy “block maps”. Map corrections are noted by field crews and made in the main block maps.

#### ***Preventive Operation and Maintenance***

The elements of the City’s sewer system O&M program include:

- Proactive, preventive and corrective maintenance of gravity sewers;
- CCTV inspection;
- Rehabilitation and replacement of sewers that are in poor condition; and
- Periodic inspection and preventive maintenance for the pump stations.

#### **Gravity Sewers**

With current funding and staffing levels, the City proactively cleans the sewer system every three to five years, and preventively cleans sewers with a history of issues on an accelerated cleaning interval as necessary.

City crews or a contractor correct problems that are identified by CCTV and sewer cleaning crews. Repairs are completed in priority order. Repairs and replacement projects are coordinated with the City's street resurfacing program and annual water main replacement projects.

Gravity sewer maintenance is currently scheduled using maps and lists of enhanced frequency cleaning line segments. Completed sewer maintenance is recorded on field crew daily reports. Upon implementation of the computerized maintenance management system (CMMS) that is currently in progress, the CMMS will be used to generate work orders and track history for sewer line maintenance, and provide other O&M related functions. The City's Standard Operating Procedure for sewer cleaning is included as Appendix IV-A.

In 2011, the City committed to an aggressive schedule of manhole inspections to identify potential cross-connections between the sewer system and the storm drain system. (Such connections were historically incorporated into the design of certain manholes as a means of preventing uncontrolled SSOs in the event a backup, but are no longer considered acceptable). The City plans to inspect all 5,783 manholes by the end of 2013. As part of this process, the City will document condition of the manholes and identify other issues (e.g., deterioration, excessive I/I). The information obtained will be used to prioritize manhole repair or rehabilitation efforts.

The City historically has used an outside contractor for CCTV inspection services, for both periodic condition assessment and for follow-up on SSO events. In February 2012, the City took delivery on its own CCTV equipment truck, so that inspections can be conducted by ESD staff, with the contractor providing backup when needed. ESD staff will receive training in the use of the CCTV equipment, and an SOP for CCTV inspections will be created. Upon completion, this SOP will be added as Appendix IV-B.

### **Wastewater Pump/Lift Stations**

City crews inspect the operation of the Arques, Lawrence Station, Sunken Gardens, Baylands and Kifer Sewage Lift Stations weekly. Maintenance activities include vacuuming out grease and debris or applying de-greasers as warranted.

### **Rehabilitation and Replacement Program**

The current budget will allow the City to inspect the condition of its gravity sewers on an approximately seven year cycle. The information gathered during the condition assessment will be used to select individual gravity sewers for repair, rehabilitation, or replacement.

Funding for the Capital Improvement Program is derived from the City's Sewer Fund. The sewer fund is an enterprise fund; sewer fees are established on the basis of projected needs and are updated periodically. The budget and project description currently included in the City's Capital Improvement Program are listed in Appendix IV-C. This listing will be revised upon completion of the Wastewater Collection System Master Plan. Additional funding for special projects may be approved by the City Council on a case-by-case basis.

### **Training**

The City uses a combination of in-house classes; on the job training, CWEA conferences, seminars, and other training opportunities to train its Wastewater Collections staff. The City strongly encourages staff to advance their CWEA certification grade and provides training and advancement opportunities. Senior staff are involved in leadership roles in CWEA and BACWA.

The City also maintains an ongoing safety training program that addresses both general and task-specific safety issues. The “Tailgate Schedule for Corp Yard” lists safety training activities for the Water and Sewer Division Program. This schedule is updated annually

The City’s contract language requires contractors working in the wastewater collection system to provide training for their employees in the activities that may cause SSOs and in responding to contractor-caused SSOs.

### **Replacement Parts**

No critical replacement parts are warranted. The pump stations have gravity bypasses and the City has informal agreements with neighboring agencies for equipment support in the event the sewer maintenance equipment fails. However, the Division maintains an inventory of routine parts for repair of sewer lines.

### **Operation and Maintenance Resources**

City staff positions dedicated to the maintenance of the collection system facilities are listed on Table IV-1. These positions also receive administrative and clerical support provided by the Environmental Services Department. Major pieces of equipment used to support maintenance activities are listed in Appendix IV-C. Staffing and resources are constrained under current budgets, but are sufficient to maintain services at an acceptable level and, with careful prioritization, to address long-term needs.

**Table IV-1. Collection System Staff Maintenance Resources**

Position/Activity	FTEs
Wastewater Operations Manager	1
Wastewater Collections Supervisor	1
Wastewater Collections Crew Leader	2
Senior Wastewater Collections Worker	2
Utility Worker / Maintenance Worker I, II	7
<b>Total</b>	<b>13</b>

### **Outreach to Sewer Service Contractors**

The City participates in the Bay Area Clean Water Agencies (BACWA) region-wide outreach program and has sent out notifications to local plumbing contractors. The City plans to repeat the mailing approximately every two years. The City also conducts general outreach

to the public on proper disposal of FOG and other items that can cause SSOs. City outreach activities are described in detail in the WPCP's Annual Pollution Prevention Reports.

## **SECTION V. DESIGN AND PERFORMANCE PROVISIONS**

### **A. Introduction**

The City's design and construction standards are used by the City Staff and they are communicated to consulting engineers and/or developers at the start of a design process or proposed development.

### **B. Regulatory Requirements**

#### **RWQCB Guidance (Design and Construction Standards)**

- (a) *Standards for Installation, Rehabilitation and Repair:* Each wastewater collection system agency shall identify minimum design and construction standards and specifications for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems.
- (b) *Standards for Inspection and Testing of New and Rehabilitated Facilities:* Each wastewater 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.

#### **GWDR Requirement (Design and Performance Provisions)**

- (a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and
- (b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

### **C. Design and Construction Standards**

The City's design standards for residential drainage systems are specified in "City of Sunnyvale – Single-Family Construction Standards", February 2011, located on the City's Community Development web page at:

<http://sunnyvale.ca.gov/Portals/0/Sunnyvale/CDD/Residential/Residential%20Construction%20Standards-Text.pdf>

Design requirements for replacement of sewer lines are specified in "Plumbing (sewer and water line) Replacement" located on the City's Community Development web page at:

[http://sunnyvale.ca.gov/LinkClick.aspx?fileticket=zMvQ5a0\\_dRk%3d&tabid=478](http://sunnyvale.ca.gov/LinkClick.aspx?fileticket=zMvQ5a0_dRk%3d&tabid=478)

Requirements for grease removal devices for food service establishments are specified in "Grease Removal Devices" located on the City's Community Development web page at:

<http://sunnyvale.ca.gov/Portals/0/Sunnyvale/CDD/Non-Residential/Grease%20Removal%20Devices.pdf>

The above requirements are consistent with the 2010 California Plumbing Code, which the City has adopted. The City's Building Division issues permits, conducts plan checks, and conducts inspections for all residential and commercial construction.

Design, installation and testing requirements for sewer mains and related appurtenances constructed in the public right-of-way are specified in the "*City of Sunnyvale Standard Details and Specifications*", located on the City's Department of Public Works web site at: <http://sunnyvale.ca.gov/Departments/PublicWorks/CityStandardDetailsandSpecifications.aspx>

Projects in the public right-of-way are coordinated through the DPW's Engineering Division, which approves construction plans and specifications and conducts inspections.

The Wastewater Collection System Master Plan project, initiated in early 2012, includes a task for review of the City's design standards and standard details for wastewater systems, along with recommendations for revisions where needed.

## **SECTION VI.**

# **SANITARY SEWER OVERFLOW RESPONSE PLAN**

### ***A. Introduction***

The City of Sunnyvale's Environmental Services Department, Water & Sewer Systems Division is responsible for the operation and maintenance of the sanitary sewer system. The system consists primarily of gravity flow lines that lead to the City of Sunnyvale's Wastewater Pollution Control Plant (WPCP).

#### **Purpose**

The Sanitary Sewer Overflow Response Plan (SSORP) is designed to ensure that every report of a confirmed sanitary sewer overflow (SSO) is immediately dispatched to the appropriate crews. This plan provides a procedure that, when enacted in response to the sewer overflow/spill, would reduce or eliminate public health hazards, prevent unnecessary property damage, and minimize the inconvenience of service interruptions. This plan provides procedures for City staff to follow when responding to, cleaning up, and reporting SSOs.

#### **Objectives**

The primary objectives of the Sanitary Sewer Overflow Response Plan are to:

- Protect public health and the environment;
- Protect collection system personnel;
- Protect private and public property;
- Respond quickly to minimize the volume of the SSO;
- Satisfy regulatory agencies and waste discharge permit requirements;
- Minimize enforcement actions against the City; and
- Safeguard the infrastructure of the collection system.

#### **Safety**

Whenever qualified City personnel respond to a report of an overflow/spill, they may encounter an emergency situation that requires immediate action. The most critical aspect of resolving an incident of this nature is to safely and competently perform the actions necessary to return the system or facility to normal operations as soon as possible.

The most important item to remember during this type of incident is that safe operations always take precedence over expediency or shortcuts. Safety also takes precedence over regulatory notifications and reporting.

Upon arrival at a SSO, the Wastewater duty person will conduct a hazard assessment to determine potential safety hazards. There is always a possibility that a sewage overflow may contain unknown hazardous waste or chemicals. On rare occasions, gasoline and industrial

solvents have been found in the sewer system. If a hazardous waste is suspected the responding field crew should notify DPS Communications immediately and request the Fire Department's Hazardous Materials Response Team.

The Wastewater Operations Manager should also be notified of a SSO as soon as possible. Personnel shall stay clear of any hazards and secure the area from the public.

Depending on the nature or cause of the SSO, personnel may be required to remove a mainline blockage with a hydro-flusher, repair a damaged section of pipeline, or wash/clean a City street. At this point, it is essential that all standard safety procedures and/or duties are followed as deemed appropriate.

Typical responses may require personnel to implement the following types of safety procedures:

- Standard personal protective equipment (PPE);
- Confined space entry procedures;
- Traffic control;
- Heavy equipment operation; and/or
- Adequate communication via two-way radio and/or cellular telephone.

## **B. Regulatory Requirements**

### **RWQCB Guidance**

Each wastewater collection system agency shall develop an overflow emergency response plan with the following elements:

- Notification – Provide SSO notification procedures.
- Response – Develop and implement a plan to respond to SSOs.
- Reporting – Develop procedures to report and notify SSOs per SSO Monitoring and Reporting Program.
- Impact Mitigation – Develop steps to contain wastewater, to prevent overflows from reaching surface waters, and to minimize or correct any adverse impact from SSOs.

### **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.

### ***C. Sanitary Sewer Overflow Response***

City of Sunnyvale employees are required to report all wastewater spills to their supervisor. Secure the wastewater spill area, do whatever is necessary to relieve the cause of the wastewater spill and bring it under control, and clean the wastewater spill as soon as possible to minimize health hazards to the public and to protect the environment.

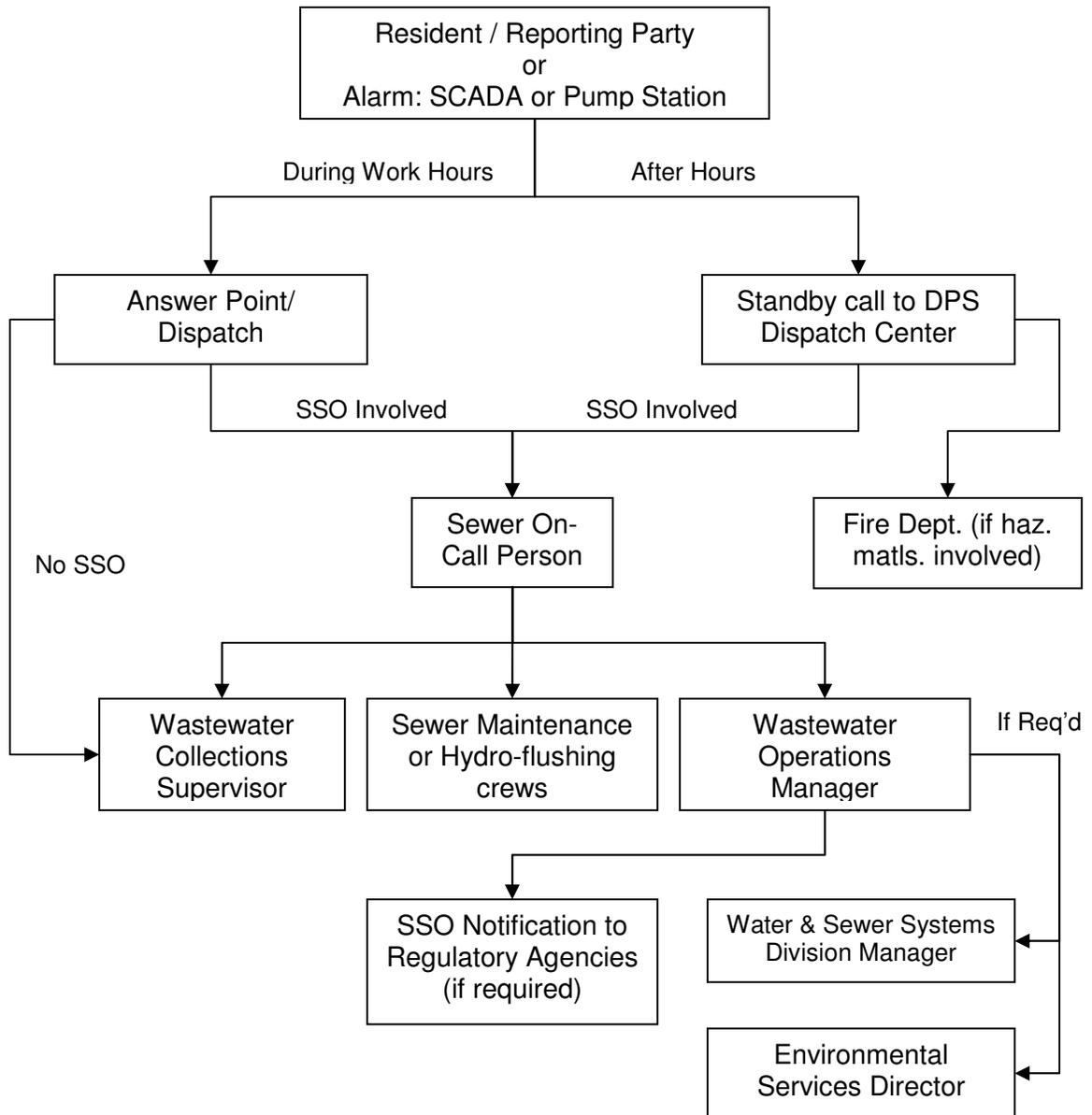
- NOTE: There are stringent regulatory notification and reporting requirements for SSOs, which vary depending on the category of spill. See Section D “SSO Reporting” below.
- If industrial toxic substances are involved, any volume must be immediately reported to the Fire Department and then reported, as soon as possible, to the State Office of Emergency Services and the Regional Water Quality Control Board.

#### ***Internal SSO Communications***

- The Wastewater duty person (or Responder) should complete a Wastewater SSO Report and notify the Wastewater Operations Manager and/or the Wastewater Collections Supervisor.
- The Wastewater Operations Manager will notify the Water and Sewer Systems Division Manager and Environmental Services Director, as needed.
- The Wastewater Collections Supervisor will meet with field crew(s) at the site of the SSO event to assess the situation, document the conditions with field logs, photos, and direct recovery and cleanup activities.
- The Wastewater Operations Manager will generally notify regulatory agencies as described in Section D “SSO Reporting”. In the Wastewater Operations Manager’s absence, the Water & Sewer Systems Division Manager will assume this responsibility.

Figure VI-1 depicts the chain of communication for responding to an SSO. Appendix VI-A contains a complete listing of Environmental Services Department employees and contact information.

**Figure VI-1 SSO Internal Communications**



**Duties and Procedures:**

The City of Sunnyvale emergency response procedure shall be followed for all minor or major sewage spills or overflows, and spills involving discharge from industries into City of Sunnyvale sewer or storm systems.

The City utilizes the document *SSO and Backup Response Plan* as a field manual for responding to SSOs and sewer backups. An abbreviated version of that document is kept in City vehicles. A copy of the full document is included as Appendix VI-B of this SSMP.

## **REPORTING PROCEDURES**

Mandatory notification and reporting requirements are described under “SSO Reporting” (subsection D of this Section.). In addition, under some circumstances, it may be appropriate to notify the following City Departments:

- Department of Public Safety Communications: (408) 730-7180
- Water Pollution Control Plant: (408) 730-7260

## **CONTROL THE CAUSE OF THE WASTEWATER SPILL:**

- (a) Set out absorbent materials to contain the sewage overflow. This is done to contain and prevent sewage runoff from entering into the storm system.
- (b) Do whatever is necessary to correct the origin of the wastewater spill, or, if the overflow is caused by a stoppage in the sewer collection main, call for assistance and use the hydro jet flushing truck to relieve the stoppage immediately.

## **MAIN LINE STOPPAGE AND OVERFLOW:**

- (a) Check downstream manholes to determine between which two manholes the stoppage exists.
- (b) Flush or rod from first clear downstream manhole towards stoppage.
- (c) Capture and remove all debris if at all possible, if this can't be done check the downstream manholes for any sign of restrictions or the possibility of a second mainline stoppage. Where possible, drag the debris down to a larger main.
- (d) Immediately flush the area and wash down manholes and street, contain and remove any solid debris.
- (e) Collect as much runoff as possible and dispose back into the sanitary sewer system, estimating how much was captured and placed back into the sanitary sewer system.
- (f) Sanitize affected area if necessary.

## **LATERAL STOPPAGE**

- (a) Check main line - if clear, stoppage must be in lower lateral, upper lateral, or house plumbing.
- (b) Check lower lateral from property line cleanout to main line. If this line is clear, the resident is advised that the City lines are clear and the problem exists in the upper lateral or plumbing and it is the responsibility of the resident to correct the problem.
- (c) When the cleanout is buried or non-existent, the resident is advised that the main line is clear and it is the responsibility of the resident to expose the line.
- (d) If a property line cleanout exists, the City will attempt to rod the lateral to the main and clear any stoppage that may exist as a courtesy service. If the stoppage cannot be

cleared, the City may expose the line to determine the exact location of the stoppage or break.

- (e) If the stoppage or break is in the portion of the lateral that is in the public right-of-way, the City may repair the line as necessary at no charge to the resident.
- (f) If there is a City-owned tree in front of the residence the City may make necessary repairs from the residence to the main if the tree has been determined to be the source of the damage, unless the lateral is bituminous coal tar impregnated (Orangeburg) pipe, in which case the resident needs to replace the pipe prior to the City doing any type of follow up work.
- (g) If the lateral stoppage or break does not meet the conditions described in (e) or (f), the City will turn the project over to the resident and the resident will have to complete the project at their expense. There is no charge to the property owner for exposing the line.

### **CLEAN-UP AND MITIGATION**

- (a) To minimize health hazards to the public and to protect the environment, start cleaning the wastewater spill area as soon as possible.
- (b) Inspect the storm drain catch basins to determine whether wastewater has entered the storm system, and to what extent.
- (c) Install air plugs or sandbags in storm lines to contain the wash water. Flush the area with water and vacuum up the excess or pump it back into the sanitary sewer collection system.
- (d) Remove all debris found in the wastewater spill area by vacuuming the surface area and depositing the material into the collection system.
- (e) Thoroughly inspect the spill area before you leave.

### **SAMPLING AND LAB TESTS**

For those SSOs that reach surface waters or drainage channels, and if feasible and safe, water quality samples should be collected. Whenever possible, samples should be collected by WPCP Laboratory or ESD / Inspection staff who are trained in field sampling procedures, rather than by Wastewater Collections Division staff. Ideally, samples should be collected at the point of discharge and at upstream and downstream locations. The upstream location should be far enough from the spill to be unaffected by the spill. The appropriate number and location of downstream samples will depend on various factors including volume of spill, volume or flow rate of receiving water, sample access, etc. Ideally a “near field” downstream sample (e.g. 100-ft downstream) and one or more “far field” samples (e.g. 500-ft, 1000-ft) should be collected. If tidal conditions are such that it is unclear as to what is “upstream” and “downstream” from the discharge location, analysis for conductivity may be useful. Samples should be analyzed for ammonia, dissolved oxygen, and a bacterial indicator. (The WPCP lab is set up to perform both enterococcus and total coliform analysis. The enterococcus analysis is preferred to characterize SSO impacts). Field observations should also be made at each sampling location, including any visual evidence of the spill, presence

of odor, evidence of fish kills. Follow-up sampling should be conducted on successive day(s) (or other appropriate time intervals) to document the return to normal conditions.

Field crews should exercise their best judgment in deciding whether to conduct sampling, and consult with the Wastewater Operations Manager or Wastewater Collections Supervisor. Water quality sampling should not be given precedence over stopping the SSO or protection of public health. However, if sufficient personnel are available, sampling can be conducted in parallel with these activities or with the clean-up effort.

#### **SIGN POSTING AND BARRICADING**

- (a) If needed to exclude the public from interfering with clean-up activities or coming into contact with spills, secure the area with barricades and/or yellow caution tape.
- (b) If the spill has entered an open creek, post warning signs and secure the area with barricades and/or yellow caution tape. Do not remove the signs or barricades until the results of the lab tests show the area to be clear. Appendix VI-H shows an example warning signed used by the City.

#### **RECORDKEEPING AND FOLLOW UP WORK**

- (a) A City of Sunnyvale Main Line Stoppage Report (yellow form) shall be filled out for all system stoppages that result in SSOs. A City of Sunnyvale Flushing Report shall accompany the mainline stoppage report. Copies of these Reports are included in Appendix VI-C. The information will be entered into the ESD mainline stoppage report system and become part of the collection system maintenance history. It will also be used by the Wastewater Operations Manager in reporting the incident to regulatory agencies.
- (b) A City of Sunnyvale Surcharge Report (green form) shall be filled out for all stoppages that do not result in SSOs. These shall be submitted to the Wastewater Collections Supervisor to determine appropriate follow up. A Flushing Report shall accompany the mainline Surcharge Report. These reports will be kept at the Corporation Yard.
- (c) The segment will generally be scheduled for televising, which will aid in determining an appropriate frequency for follow-up work needed to maintain the segment in a clear condition. The recommended follow-up work will then be scheduled onto one of several enhanced cleaning lists (60-day, 90-day, or semi-annual) if needed.
- (d) Any mainline stoppage that caused property damage shall be placed on an enhanced cleaning list as appropriate.

### ***D. SSO Notification and Reporting***

All confirmed sanitary sewer overflows must be reported to the Wastewater Operations Manager, who will be responsible for notification and reporting to regulatory agencies. Notification and reporting requirements depend on the type of spill, as described below.

## **External SSO Notification and Reporting Procedures**

The City is required to report all SSOs to the SWRCB using the California Integrated Water Quality System (CIWQS). SSOs of any size that reach a drainage channel or surface water must also be reported by phone to the California Emergency Management Agency (Cal EMA) and the Santa Clara County Health Service Agency within 2 hours as described below.

### **Category 1 SSOs**

#### **Definition:**

All discharges of sewage resulting from a failure in the City's sanitary sewer system that:

- Equal or exceed 1000 gallons; or
- Result in a discharge to a drainage channel and/or surface water; or
- Discharge to a storm drain pipe that was not fully captured and returned to the sanitary sewer system.

### **Notification & Reporting Requirements**

#### **2-hr Notification:**

Contact Cal EMA and the Santa Clara County Health Services Agency within 2 (two) hours of becoming aware of the SSO, at the numbers indicated below. This is the "Notification" requirement.

The Cal EMA operator will provide a Control Number and they will notify other State agencies of the spill. Their notification list includes Regional Water Quality Control Board, California Department of Fish and Game, California Highway Patrol, California Department of Health Services, Caltrans, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service.

#### ***California Emergency Management Agency (Cal EMA)***

Telephone: (800) 852-7550 or (916) 262-1621

#### ***Santa Clara County Health Services Agency***

Contact: Richard Fuchs  
Telephone: (408) 918-1951  
Cell Phone: (408) 892-2123  
Fax: (408) 258-5891

The Santa Clara County Health Services Agency will post public notices at parks, or beaches when necessary if discharges reach the public lands, creeks or bay waters.

**NOTE:** Technically, the 2-hr notification requirement applies only to SSOs that result in a discharge to a drainage channel and/or surface water, rather than to all Category 1 spills. Category 1 spills that do not reach surface water or a drainage channel actually fall under the 3-day/15-day Reporting requirement described below. Adherence to the 2-hr notification for all Category 1 spills is therefore conservative.

### 3-day / 15-day Reporting

As soon as possible, but no more than three days after the City has knowledge of the SSO, file an initial report of the SSO using the SWRCB's online Reporting Database (CIWQS) at <http://ciwqs.waterboards.ca.gov/> A final certification must be submitted via CIWQS within 15 days of the conclusion of SSO response activities. This is the "Reporting" requirement for Category 1 SSOs.

NOTE: A "Data Submitter" may enter data and create an SSO report in CIWQS. However, only a "Legally Responsible Official" (LRO) can certify SSO reports.

NOTE: Requirements to provide 2-hr notification and 24-hr certification to the Regional Water Quality Control Board (via the online "WBERS" system) were eliminated in June 2011.

### **Category 2 SSOs**

#### **Definition:**

All other discharges of sewage resulting from a failure in the City's sanitary sewer system.

#### **Reporting Requirements**

No initial notification is required. A final certified report must be filed using CIWQS within 30 days after the end of the calendar month in which the SSO occurs.

### **Summary of SSO Notification, Certification & Reporting Requirements**

Table VI-1, excerpted from the RWQCB's May 1, 2008 letter, summarizes current SSO notification/certification/reporting requirements described above. Additional information regarding use of the CIWQS SSO reporting tools can be found at:

[http://www.swrcb.ca.gov/water\\_issues/programs/sso/docs/discharger\\_workbook.pdf](http://www.swrcb.ca.gov/water_issues/programs/sso/docs/discharger_workbook.pdf)

### **Private Lateral SSOs**

#### **Definition**

Sewage discharges that are caused by blockages or other problems in privately owned sewer laterals.

#### **Reporting Requirements**

Reporting of SSOs from private laterals is not required. However, private lateral SSOs may be reported at the City's discretion through CIWQS.

### **No Spill Certification**

Even if there are no SSOs during the calendar month, the City must certify through CIWQS that there were no SSOs for the designated month. This "No Spill Certification" must be submitted within 30 days after the end of each calendar month.

## CIWQS Questionnaire Annual Update

The City must annually update the CIWQS Collection System Questionnaire, even if there are no changes from the previous year.

### Annual Report (RWQCB Guidance)

The City must submit a written report to the RWQCB covering all SSOs that occur within a calendar year. The written report is due by March 15<sup>th</sup> of the following year. The annual SSMP audit (biannual for GWDR) must be attached to the SSO report.

**Table VI-1. Summary of Communication Requirements for SSOs**

(adapted from Regional Water Board’s May 1, 2008 letter; subsequently modified by the Regional Water Board’s June 2, 2011 email deleting the 2-hr RWB notification and 24-hr certification)

Communication Type (all are required)	Agency Being Contacted	Timeframe Requirements	Method for Contact
1. Notification	Office of Emergency Services	As soon as possible, but not later than <b>2 hours</b> after becoming aware of the SSO.	Telephone – (800) 852-7550 (obtain a control number from Cal EMA)
	Local Health Department	As soon as possible, but not later than <b>2 hours</b> after becoming aware of the SSO.	Santa Clara Co. Health Department (408) 918-1951
	<del>Regional Water Board</del>	<del>As soon as possible, but not later than <b>2 hours</b> after becoming aware of the SSO.</del>	<del>Electronic<sup>1</sup> www.r2esmr.net/ sso_login2.asp</del>
<del>2. Certification</del>	<del>Regional Water Board</del>	<del>As soon as possible, but not later than <b>24 hours</b> after becoming aware of the SSO.</del>	<del>Electronic<sup>2</sup> www.r2esmr.net/ sso_login2.asp</del>
3. Reporting	State Water Board (CIWQS)	Category 1 SSO: initial report within <b>3 business days</b> , final report within <b>15 calendar days after response activities have been completed.</b>	Electronic (only) to CIWQS <a href="https://ciwqs.waterboards.ca.gov/">https://ciwqs.waterboards.ca.gov/</a>
		Category 2 SSO: within <b>30 calendar days</b> after the end of the calendar month in which the SSO occurs.	Electronic (only) to CIWQS <a href="https://ciwqs.waterboards.ca.gov/">https://ciwqs.waterboards.ca.gov/</a>

## ***E. Equipment***

A listing of equipment used by the Wastewater Collections section is included as Appendix IV-C.

## ***F. Training***

### ***SSO Response Training***

All employees who may have a role in responding to, reporting, and/or mitigating a SSO should receive training. All new employees should receive training before they are placed in a position where they may have to respond in an independent manner, i.e. without the benefit of accompanying an experienced employee.

Employees are encouraged to participate in SSO response training and exercises offered by CWEA or other sanitation agencies, to the extent these opportunities can be accommodated within the Division's workload schedule.

### ***Record Keeping***

Records shall 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 or exercise should include date, time, place, content, name of trainer(s), and names of attendees.

## ***G. List of Plumbing and Emergency Response Contractors:***

A list of plumbing contractors that the City uses for contract work on sewer mains or laterals is included in Appendix VI-A. A list of contractors who may be called out to assist with emergency response is included as Appendix VI-E

## SECTION VII. FOG CONTROL PROGRAM

### **A. Introduction**

This section of the SSMP evaluates the extent and nature of SSOs related to Fats, Oils, and Grease (FOG), the need for a FOG Control Program, and outlines the elements of the City's FOG Control Program.

### **B. Regulatory Requirements for FOG Control Section**

#### **RWQCB Guidance:**

Each wastewater collection system agency shall evaluate its service area to determine whether a FOG control program is needed. If so, a FOG control program shall be developed as part of the SSMP. If an agency determines that a FOG program is not needed, the agency must provide justification for why it is not needed.

#### **GWDR Requirement:**

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

- (a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
- (b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;
- (c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
- (d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, best management practices (BMP) requirements, record keeping and reporting requirements;
- (e) Authority to inspect grease producing facilities, enforcement authorities, and determination of whether the collection system agency has sufficient staff to inspect and enforce the FOG ordinance;
- (f) An identification of sewer system sections subject to FOG blockages and the establishment of a cleaning maintenance schedule for each section; and

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

### **C. Nature and Extent of FOG Problem**

The City has approximately 360 potential commercial and industrial sources of FOG discharge to the collection system. The largest concentration of commercial FOG sources are the food service establishments (FSEs) located in the vicinity of Murphy Ave and along some portions of El Camino Real. Some of the FSEs are located in older buildings and have undersized grease traps. In addition, there are eating and drinking establishments, cafeterias, bakeries, deli's, meat preparation, mobile facilities and two food processing plants (butter and sausage manufacturing) that are located throughout the City.

Although FOG is not the major cause of SSOs in the City of Sunnyvale, given the large number of FSEs and other potential FOG sources in the City, and the level of sewer cleaning that has historically been necessary to respond to or prevent FOG-related SSOs, it is clear that the City needs a FOG Program. The City includes line segments that have had FOG-related SSOs or surcharging on the Enhanced Frequency Cleaning listings (60-day, 90-day, semi-annual, and annual), which are used by the Wastewater Collections Section to schedule sewer lines preventive maintenance. The Enhanced Cleaning listings reside on the City network, are accessible by ESD staff, and are periodically updated based on information collected during maintenance activities (and particularly the results of video inspections). Such periodic updating allows the City to tailor cleaning frequencies to the needs of the particular line segment and more effectively utilize maintenance resources.

### **D. FOG Control Program**

#### **Environmental Services Department FOG Control Program Elements**

##### **A. Sewer Line Cleaning**

FOG blockage information is being shared between the Wastewater Collections Section (WW Collections) and the Regulatory Programs Division / Inspection Group.

1. WW Collections will contact the Inspection Group for enforcement or outreach support when an SSO event is in progress or has occurred.
2. WW Collections provides line stoppage information to the Inspection Group for review and any follow up.
3. WW Collections will advise the Inspection Group of any possible grease discharge identified during mainline stoppage, follow up or annual maintenance flushing or televising of scheduled wastewater segments.
4. The Inspection Group will advise WW Collections of all findings, all outreach program participants and their findings of any investigation initiated by WW Collections caused by concerns identified during the follow up or annual maintenance flushing of wastewater main segments.

## **B. Legal Authority – Ordinance**

The Sunnyvale Municipal Code (SMC) identifies FOG-related prohibitions and requirements. The Regulatory Programs Division incorporated additional SMC requirements in 2000.

1. Prohibitions on discharges (SMC 12.12.020)
2. Grease disposal prohibited (SMC 12.12.025)
3. Grease removal device required (SMC 12.12.027)
4. Discharge and threatened discharge into storm drain prohibited (SMC 12.12.040)
5. Administrative civil penalties (SMC 12.18.090)

## **C. FSE Permits/Registration**

The Inspection Group has identified all FSEs in the City and performs sampling, inspection, and enforcement to verify compliance with Sunnyvale Municipal Code and Best Management Practices. New or remodeled FSEs are identified in conjunction with the City Building Department.

## **D. FSE Inspections/Enforcement**

1. The Inspection Group schedules inspections of all FSEs on an annual basis. Emphasis is on:
  - a. Grease removal device (GRD) installation and maintenance.
  - b. Process information
  - c. Grease management
  - d. Best Management Practices
  - e. Storm water pollution prevention
2. Enforcement actions are clearly outlined in the Enforcement Response Plan. Elements include:
  - a. Identifying and investigating instances of noncompliance
  - b. Enforcement procedures
  - c. Enforcement response guide

## **E. Grease Interceptor and Trap Installation Requirements**

All GRDs installed or caused to be installed are sized in conformance with the currently adopted edition of the Uniform Plumbing Code (SMC 12.12.027). The Inspection Group coordinates with the Building Department in the permit review of FSEs.

## **F. Grease Interceptor and Trap Maintenance Requirements**

All GRDs installed or caused to be installed shall be kept in good repair and shall be maintained in continuous operation. The GRD contents shall be removed every six months at a minimum, and documentation of all grease removal activities shall be maintained (SMC 12.12.027). The Environmental Compliance Inspectors inspect FSEs for these criteria and will routinely conduct FOG accumulation measurements of the GRD. The City requires compliance with the 25% rule Best Management Practice. When the GRD is over 25% total capacity of measured solids and FOG, a complete pump out is required.

## **G. Grease Hauling and Disposal Requirements**

It is unlawful for any person to dispose of any grease by discharge into any sanitary sewer or storm drainage system (SMC 12.12.025).

1. Environmental Compliance Inspectors review the contracted grease hauling and disposal company documents when conducting an FSE inspection.
2. FSEs that conducts self-cleaning of GRDs are provided guidance regarding proper disposal of the FOG.

## **H. Grease Hauling and Disposal Facilities**

A listing of grease haulers and disposal facilities is available at <http://www.calfog.org>. The nearest disposal site for FOG is the South Bayside System Authority (SBSA) treatment plant in Redwood City. Other local facilities that accept FOG from outside their service areas include the East Bay Municipal Utility District's (EBMUD) treatment plant in Oakland and the City of Watsonville Wastewater Treatment Facility. The recently-issued design contract for rehabilitation of Sunnyvale WPCP anaerobic digesters No. 1 and No. 2 includes the evaluation and design of a FOG and food waste receiving station at the WPCP. The San Jose/Santa Clara Water Pollution Control Plant is also exploring the feasibility of constructing a regional FOG acceptance facility.

## **I. Kitchen BMP Requirements**

Kitchen BMP activities are observed and related inquiries are made during inspections of FSEs. All FSEs receive BMP documents or displayable posters regarding FOG reduction, and the BMPs are now expressed in five languages.

## **J. Residential Program**

The Inspection Group previously conducted surveys and inspections of residential complexes located in FOG "hot spots," as identified by WW Collections. These facilities receive information on BMPs, and their effectiveness will be monitored.

## **K. Education and Outreach**

The Environmental Division's Public Outreach coordinates with the Inspection Group in selecting and distributing both FSE and residential complex BMPs related to FOG reduction. FOG outreach regularly occurs as articles in a city-wide distributed Quarterly Report, on community public access television, and on flyers and utility bill inserts. A FOG reduction workshop exclusively for FSE employees and owners was presented, and similar workshops are being considered.

## **L. FOG Characterization**

The effectiveness of the Environmental Services Department FOG Control Program is dependent upon characterizing the FOG, and the following related activities were conducted:

1. Identify and inspect all FSEs as to FOG generation
2. Identify geographical locations where FOG-related issues have or could occur.

A technically-based program from the findings was then connected to the conditions:

1. GRDs in FSEs and the maintenance of them became a requirement.
2. All FSEs and residential complexes on Enhanced Cleaning Listings are being surveyed or inspected.
3. Incidents of blockages identified by WW Collections are reviewed by the Inspection Group as to source control and enforcement.
4. Extensive televising of sewer lines to determine FOG accumulation is being addressed. The Inspection Group will coordinate with WW Collections to determine the related source control actions to be taken.

## **SECTION VIII. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN**

### ***A. Introduction***

This section outlines the City's programs and activities to provide adequate capacity.

### ***B. Regulatory Requirements for the System Evaluation and Capacity Assurance Plan Section***

#### ***RWQCB Guidance (Capacity Management)***

- Capacity Assessment  
Each wastewater collection system agency shall establish a process to assess the current and future capacity requirements for the collection system facilities.
- System Evaluation and Capacity Assurance Plan  
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.

#### ***GWDR Requirement (SECAP)***

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 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.

## **C. System Evaluation and Capacity Assurance Plan**

### **Evaluation –Sewer System Master Plan**

The City completed a Sewer System Master Plan in 1992 (Master Plan). The master planning effort evaluated the capacity of the existing sanitary sewer system assets and provided capacity design criteria for future assets.

At the time the Master Plan was prepared, the City was at or near build-out. Projects within the City's service area are primarily redevelopment projects. The City requires that redevelopment project proponents evaluate the offsite capacity impacts of their project through an engineering study.

The City initiated the development of a new Wastewater Master Plan in early 2012. The project's scope of work includes:

- Updating the Citywide Vertical Control/Benchmark system
- A report on the sewer and storm systems, their conditions and capabilities
- Flow monitoring and a report and recommendations regarding inflow and infiltration to the sanitary sewer
- A dynamic hydraulic systems models and flow projections;
- A report on Operations and Maintenance, including fee assessment and fee schedules;
- Up-to-date wastewater system maps in GIS format and drawings in CAD format;
- A recommended comprehensive long-term Capital Improvement Program
- A review and recommendations for revisions to the City's design standards and standard detail for wastewater systems,
- Development of an intranet web browser for technical and engineering documents

The City Council awarded a contract for developing the Master Plan on January 31, 2012. The schedule calls for completion of the Plan by mid-year 2013.

### **Evaluation - Hydraulic Model**

The City periodically monitors the flow in its sanitary sewer system to identify capacity deficiencies and to monitor the quantity of inflow and infiltration present.

The flows were most recently monitored at eight locations during April and May 2005. These sites had been previously monitored in 1998. The 2005 Flow Monitoring effort demonstrated that the City's large diameter sewers have adequate capacity (the maximum observed d/D was 72%). Capacity issues will be revised as part of the Wastewater Collection System Master Plan effort described below

### **Design Criteria**

The capacity-related design criteria are included in Section V Design and Performance Provisions.

### **Capacity Enhancement Measures - Capital Improvement Program**

There were no known capacity deficiencies at the time this SSMP was prepared. The City's Wastewater Collection System Master Plan effort calls for additional monitoring, development of a new collection system model, and capacity assessment at existing and future flows, up to and including 2035 "build-out" flows based on population and land use projections contained in City planning documents. The Master Plan will make recommendations for addressing any current or future capacity deficiencies. The resulting projects will be incorporated into the Capital Improvement Program.

### **Schedule**

The schedule for the City's capacity enhancement projects is included in the City's Capital Improvement Program. A listing of the annual budgets and project description for Sewer System CIP projects is included as Appendix IV-C.

## **SECTION IX. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS**

### ***A. Introduction***

This section of the SSMP outlines the process that the City will follow to evaluate the effectiveness of the SSMP and to identify updates that may be needed for a more effective program.

### ***B. Regulatory Requirements for the Monitoring, Measurement, and Program Modifications Section***

#### ***RWQCB Guidance:***

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.

#### ***GWDR Requirement:***

The Enrollee shall:

- (a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
- (b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
- (c) Assess the success of the preventative maintenance program;
- (d) Update program elements, as appropriate, based on monitoring or performance evaluations; and
- (e) Identify and illustrate SSO trends, including: frequency, location, and volume.

### ***C. Performance Measures***

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

- Total number of SSOs
- Number of SSOs by cause (roots, grease, debris, pipe failure, capacity, pump station failures, and other);
- Locations with multiple SSOs;
- Volume of sewage spilled, recovered, and reaching waters of the state.
- Volume spilled as a fraction of volume conveyed through system
- Emergency response times

- Planned to actual performance for preventive maintenance. (Future metric to be developed upon implementation of the CMMS)

#### ***D. Performance Monitoring and Program Changes***

The City will evaluate the performance of its wastewater collection system and SSMP effectiveness annually using the performance measures described above. Results of the evaluation will be recorded in SSMP Audit Table 1 and in trend plots derived from that data. Examples of such plots are included as Appendix IX-A. The City will also evaluate the effectiveness of individual SSMP elements. The primary tool for documenting the evaluation will be the SSMP audit. The City will prioritize its actions and initiate changes to this SSMP and the related programs based on the results of the evaluation. Examples of changes that could result from ongoing evaluation include:

- Revisions to frequency of cleaning cycles and/or FSE inspections based on field observations and CCTV inspections
- Reprioritization of rehabilitation and replacement projects based on the results of CCTV inspection, manhole inspections, and capacity analysis.
- Implementation of new methods and procedures based on experience developed in-house and from other agencies.
- Increased use of information technology (GIS, GPS, CMMS) for administrative and field operations.

## **SECTION X. SSMP PROGRAM AUDITS**

### ***A. Introduction***

This section of the SSMP outlines the process that the City will follow to evaluate the effectiveness of the SSMP to identify updates that may be needed for a more effective program.

### ***B. Regulatory Requirements***

#### ***RWQCB Guidance***

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.

#### ***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), including identification of any deficiencies in the SSMP and steps to correct them.

### ***C. Audits***

The City has conducted annual audits of the SSMP starting with Calendar Year 2008. Audits are normally conducted in late February or early March of the following year by the Wastewater Operations Manager and an outside consultant. Other parties may be added to the future audit teams. The audit is submitted to the RWQCB as an attachment to the SSO Annual Report due on March 15. A copy of the most recent SSMP Program Audit is included as Appendix X-A.

The audit covers each of the major sections of the SSMP. An Audit Checklist, adapted from a document developed by BACWA and based on the requirements of the GWDR is used. In addition to the Yes/No response to questions, the checklist provides space for each group of related questions to document any deficiencies and steps taken or planned to correct them. The comment spaces can also be used to document qualitative evaluations related to the particular element or sub-element. In this way, the audit serves as the primary tool for documenting SSMP effectiveness as described in Section IX.

### ***D. SSMP Updates***

The City will determine the need to update the SSMP based on the results of the Monitoring and Measuring Program and the SSMP audit. As part of the 2012 SSMP revision, information that is expected to require regular updating (contact lists, performance statistics,

Enhanced Cleaning lists, etc) was moved to the SSMP Appendices or replaced by reference to the appropriate external documents. This will facilitate the update process, and will reduce the frequency at which the main body of the SSMP will require updating. The Wastewater Operations Manager is responsible for maintenance and updating of the SSMP.

## **SECTION XI. COMMUNICATION PROGRAM**

### ***A. 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.

### ***B. Regulatory Requirements for the Communication Program Section***

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

#### ***RWQCB Guidance***

The RWQCB does not require a Communication Program.

#### ***GWDR Requirement***

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.

### ***C. Communication during SSMP Development and Implementation***

#### ***Communication During SSMP Development***

The City Council approved the schedule for completion of the SSMP at its August 27, 2007 council meeting. In advance of such approval, Public Works staff prepared a Report to Council that provided background information including regulatory drivers for SSMP development, SSMP purpose and content, relationship to existing City policy as described in the Wastewater Management Sub-element of the City's General Plan, and the SSMP implement schedule. The Council report was available to the general public through posting of the Council agenda on the City's official notice bulletin board, posting of the agenda and report on the City Council web page, and through the City Library and the City Clerk's Office. The August 27 Council meeting was open to the public and included a period for public comment.

In May 2009, the City amended the sewer use ordinance to implement additional FOG Program elements as required by the SSMP. The proposed ordinance revisions were also publicly noticed and made available to the public through the channels listed above.

#### ***Ongoing Communication***

**Posting of SSMP on City Web Site** The City plans to post the SSMP and results of annual SSMP audits (which include the performance assessments that are discussed in

Section IX) on the City's web site. The link to the document will be on the Environmental Services Department, Water and Sewer Services page. That page currently includes contact information for reporting sewer backups (SSOs).

**SSO Reporting** The Wastewater Operations Manager is responsible for reporting SSOs to State and Local agencies (State Office of Emergency Services, State Water Board, and County Health Department). Information on individual SSOs is available to the general public through a GIS-based application on the State Board's web site at [http://gistest.waterboards.ca.gov/webmap/sso\\_pub.html](http://gistest.waterboards.ca.gov/webmap/sso_pub.html)

**FOG Program** The City operates a FOG Program that regulates the discharge of FOG from commercial food service establishments (FSEs) by requiring the installation and maintenance of grease removal devices and through distribution of BMP information (see Section VII). FSE inspections and enforcement are administered through the WPCP Pretreatment Program. Control of FOG from residential sources is achieved primarily through education and outreach efforts that communicate a consistent and ongoing message regarding the impacts of FOG on the collections system, provides information for proper disposal, distributes FOG scrapers, etc. The FOG outreach activities are conducted at the community events such as the Health and Safety Fairs, during school presentations, and other venues. The Program also uses the City's quarterly newsletter, utility bill inserts, electronic billboards and links to online site to communicate a variety of pollution prevention messages, including FOG-related messages. In addition, the City also participates in regional outreach activities through the Bay Area Clean Water Agencies (BACWA)/Bay Area Stormwater Agencies Association (BASMAA) Regional Media Relations Campaign.