CITY OF MILLBRAE

Sewer System Management Plan August 1, 2018

Original Council Adoption: June 17, 2009
Original Resolution 09-45
City Council Recertified: June 14, 2016, December 08, 2021
Resolution No 16-16, 21-89
City WDID # #2S8O10155

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Introduction

Sewer System Management Plan

This Sewer System Management Plan (SSMP) has been prepared by the Public Works Department of the City of Millbrae with the assistance of Causey Consulting, Walnut Creek, CA in 2016, and updated by City of Millbrae in 2018. 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.

The State Water Resources Control Board (SWRCB) has issued statewide waste discharge requirements for sanitary sewer systems, which include requirements for development of an SSMP. The State Water Board requirements are outlined in Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated May 2, 2006 (GWDR), and Order No. WQ-2008-0002-EXEC, dated February 20, 2008, which was amended by Order No. 2013-0058-EXEC, effective September 9, 2013, which changed the Monitoring and Reporting Program (MRP). This SSMP is intended to update the City's existing SSMP, in continued compliance with the GWDR.

The structure (section numbering and nomenclature) of this SSMP follows the above referenced GWDR and MRP. This SSMP is organized using the SWRCB outline of elements in WDR Section D.13; and contains language taken from the GWDR at that beginning of each element. The GWDR uses the term "Enrollee" to mean each individual municipal wastewater agency that has completed and submitted the required application for coverage under the WDR (in this case, the Enrollee is the City of Millbrae). The City's waste discharge identification number (WDID) in the California Integrated Water Quality System (CIWQS) is 2SSO10155.

The City on November 15, 2010 ("effective date") settled Civil Case No. CV 09-05675 SBA with the San Francisco Baykeeper with the execution of a consent decree in the United States District Court, Northern District of California. This consent decree requires that certain actions and activities be undertaken to improve the operations, maintenance and emergency response to prevent sewer system overflows and to enhance compliance with the applicable permits, laws, and regulations as related to sanitary sewer overflows. The consent decree will terminate six (6) years from the effective date above and requires the City to annually report on progress on the implementation of the performance requirements contained in the consent decree.

Sanitary Sewer System Facilities

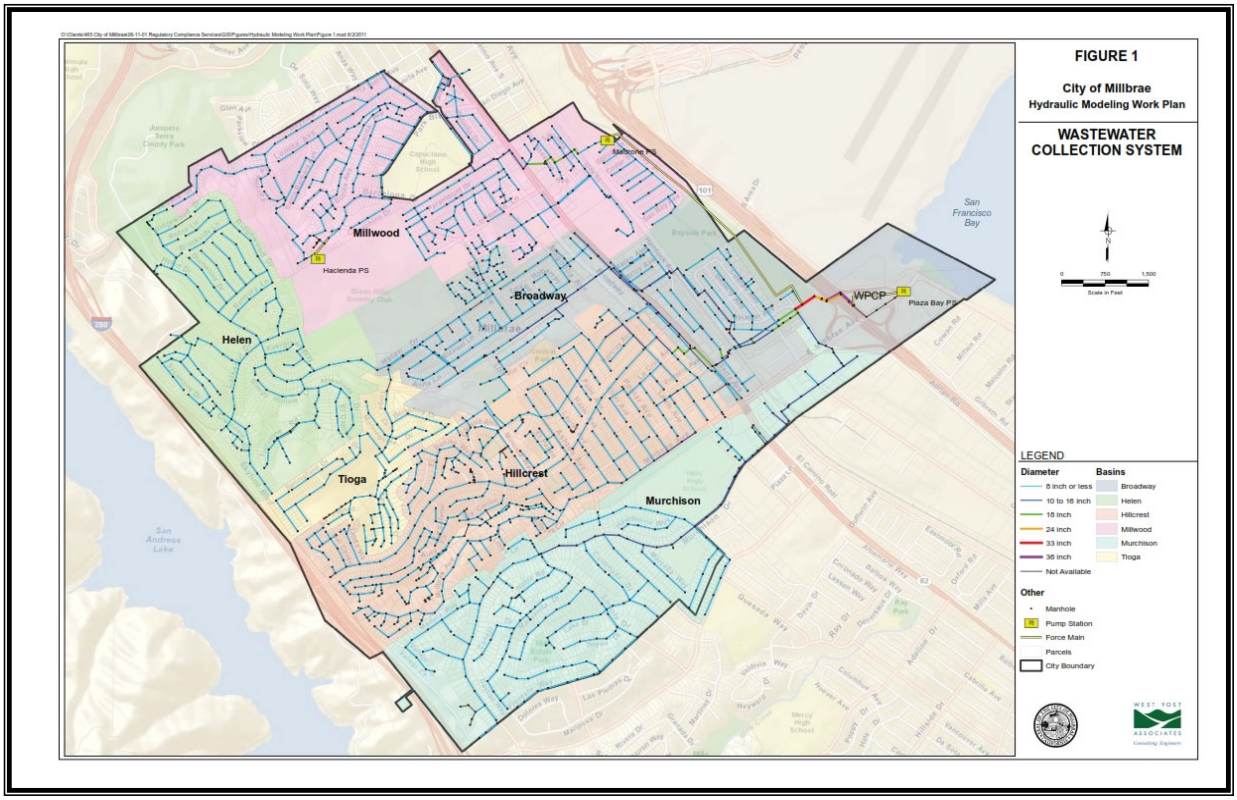
The City of Millbrae's sanitary sewer collection system serves a population of approximately 21,532 as reported in the 2010 census in a service area of 3.26 square miles with approximately 7000 sewer connections. The collection system consists of 55 miles of gravity sewers, 1600 manholes and 22 miles of publicly-owned lower laterals. The remaining lower and upper laterals are privately owned. The gravity sewer lines range in size from six (6) to thirty-six (36) inches in diameter. The City also operates three (3) pump stations and associated force mains. All wastewater is conveyed to and treated at the City's Publicly Owned Treatment Plant (POTW).

Intro Figure 1 contains a map of the City's sanitary sewer system

Intro Table 1: Gravity Sewer System Size Distribution and **Intro Table 2** provide the composition of the sewer piping by size and material of construction.

Intro Table 3 provides the installation age distribution of the City's collection system as reported in CWIQS.

Intro Figure 1: Millbrae Sewer System Map



Intro Table 1: Gravity Sewer System Size Distribution

Diameter, inches	Number of Line Segments	Pipe Length, linear feet	Portion of Sewer System, %
6	1190	226492	72.3
8	263	52283	16.7
10	59	13194	4.2
12	26	5387	1.7
14	2	3009	1.0
15	7	1504	0.5
16	35	5710	1.8
18	24	3476	1.1
24	9	1199	0.4
33	2	405	0.1
36	2	497	0.2
Totals	1619	313,156	100.00
Total. miles	N/A	59.31	100.00

Intro Table 2: Sewer System Materials of Construction

Material	Number of Line Segments	Pipe Length, LF	Percent of Sewer System
VCP	1261	248167	79.2
HDPE	297	52259	16.7
RCP	5	3079	1.0
DIP	6	1838	0.6
CIP	1	102	0.0
PVC	33	5609	1.8
PL	8	1032	0.3
Transite	5	593	0.2
Liner	1	204	0.1
Other	2	273	0.1
Total	**1619**	**313,156**	**100**

Intro Table 3: Inventory of Sewer Lines by Pipe Age

Age, Years	Construction Period	Percent of System*	Linear Feet of Main
0-15	2000 - current	10	30,861
16 – 35	1980 – 1999	5	14,520
36 – 55	1960 – 1979	12	40,656
56 – 75	1940 – 1959	37	115,302
76 - 95	1920 – 1939	36	112,000
95 - 115	1900 – 1119	0	0
>115	Before 1900	0	0
		Total, linear feet	**313,339**
		Total Miles	**59.34**
* Source: CIWQS Collection System Questionnaire 3/28/14			

Definitions, Acronyms, and Abbreviations

Asset Inventory Management Systems (AIMS) – see CMMS

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.

Building Lateral – see Private Sewer Lateral

Calendar Year (CY)

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

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

Cast Iron Pipe (CIP)

City
Refers to the City of Millbrae

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 the computerized maintenance management system that is used by the City to plan, dispatch, and record the work on its sanitary sewer system. The City currently uses a system called Asset Inventory Management System (AIMS).

Consent Decree (CD)
The consent decree between Baykeeper and the City of Millbrae dated November 15, 2010 in United States District Court, Northern District of California, Civil Case No. CV 09-05675 SBA

Corrugated Pipe (CP)

Ductile Iron Pipe (DIP)

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.

Fats, Roots, Oils and Grease (FROG)

Feet per sec (fps)

First Responder
Refers to the field crew or the On Call personnel that are the City's initial response to an SSO event or other sewer system event.

Fiscal Year (FY)
Means a 12-month periods beginning July 1st and ending June 30th.

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 or WDR)
Refers to the State Water Resources Control Board Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated 5/2/2006.

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 a field device it that is recommended to determine the longitude and latitude of sanitary sewer overflows for use in meeting CIWQS reporting requirements.

Gallons per Day (GPD)

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

High Density Polyethylene (HDPE)

Infiltration/Inflow (I/I)
Refers to water that enters the sanitary sewer system from storm water and/or groundwater.

- Infiltration enters through defects in the sanitary sewer system after flowing through the soil.
- Inflow enters the sanitary sewer without flowing through the soil. Typical points of inflow are holes in manhole lids and direct connections to the sanitary sewer (e.g. storm drains, area drains, and roof leaders).

Lateral – See Private Sewer Lateral

Legally Responsible Official (LRO)
Person(s) designated by the City of Millbrae to be responsible for formal reporting and certifying of all reports submitted to CIWQS and the SWRCB or SFRWQCB.

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

Mainline Sewer
Refers to City wastewater collection system piping that is not a private lateral connection to a user.

Monitoring, Measurement, and Plan Modifications (MMPM) Element IX of the SSMP.

Monitoring and Reporting Program (MRP)
State Water Resources Control Board WQ 2013-0058-EXEC effective September 9, 2013.

Notice of Correction (NOC)

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

Nuisance
California Water Code section 13050, subdivision (m), defines nuisance as anything that meets all of the following requirements:

a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
c. Occurs during, or as a result of, the treatment or disposal of wastes.

Office of Emergency Services (OES)
Refers to the California State Office of Emergency Services.

Operations and Maintenance (O&M)

Overflow Emergency Response Plan (OERP) Element VI of this SSMP.

Pipeline Assessment and Certification Program (PACP)
Refers to the NASSCO certification program that is used for the evaluation and condition assessment of sewer lines and appurtenances from closed circuit televising of the lines and appurtenances.

Polyvinylchloride Pipe (PVC)

Publicly Owned Treatment Works (POTW) – see WPCP below

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

Private Sewer Lateral (PSL)
That portion of a private property's building sewer as defined by the plumbing code, and is further defined as the piping of a drainage system that extends from the end of the building drain to the public sewer which includes the connection to the public sewer unless there is a cleanout in the sidewalk or within two and half feet of the property line. In this case the property owner is responsible for the lateral from the building drain to the cleanout only.

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

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

Public Works (PW)

Pump Station (LS)
A facility that transmits and Pumps sewage into the City gravity sanitary sewer collection system

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

Reinforced Concrete Pipe (RCP)

Sanitary Sewer Backup (Backup)
A wastewater backup into a building and/or on private property caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

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

(i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;
(ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
(iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

SSOs that include multiple appearance points resulting from a single cause will be considered one SSO for documentation and reporting purposes in CIWQS.

NOTE: Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned are not SSOs.

SSO Categories:

Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either:

- Reaches surface water and/or drainage channel tributary to a surface water; or
- Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.

Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either:

- Does not reach surface water, a drainage channel, or an MS4, or
- The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.

Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition.

Sanitary Sewer System or Sewer System
Refers to the sanitary sewer facilities that are owned and operated by the City of Millbrae and include main line sewers, manholes, pump stations, force mains and certain lower laterals and any other appurtenances in the publicly owned sewer system.

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

Sewer Service Lateral
Refers to the piping that conveys sewage from the building to the City's wastewater collection system or to the property line cleanout.

Sewer System Management Plan (SSMP)

Standard Operating Procedures (SOP)
Refers to written procedures that pertain to specific activities employed in the operation and maintenance of the Sanitary Sewer System.

Standard Specifications
Refers to the latest edition of Standard Specifications published by the City of Millbrae

State Water Resources Control Board (SWRCB)
Refers to the California Environmental Protection Agency, State Water Resources Control Board.

Note: The State Board is a separate entity from the San Francisco Bay Regional Water Quality Control Board, although the two agencies are closely connected.

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) Element VIII of this SSMP.

Untreated or Partially Treated Wastewater
Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.

Utility & Operations Division (U&O)

Vitrified Clay Pipe (VCP)

Waste Discharge Identification Number (WDID)
State of California Waste Discharge Identification Number for reporting sanitary sewer overflows and other required information required by the GWDR.

Waste Discharge Regulation (WDR) see GWDR above

Water Body
Any stream, creek, river, pond, impoundment, lagoon, wetland, or bay.

Water of the State
Refers to "any surface water or groundwater, including saline waters, within the boundaries of the state." (California Water Code § 13050(e)).

Water of the United States or Surface Waters
Refers to the Environmental Protection Agency definition included in the Clean Water Act Part 230.3 Definitions.

Water Pollution Control Plan (WPCP)
The City owned sewage treatment facility operated by the Public Works Department and located at 400 East Millbrae Avenue.

Water Quality Monitoring Program Plan (WQMP)

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

References

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

State Water Resources Control Board Order No. Order No. 2013-0058-EXEC, Amending Monitoring And Reporting Program For Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, September 9, 2013.

San Francisco Baykeeper vs. City of Millbrae, United States District Court, Northern District of California, Civil Case No. CV 09-05675 SBA Consent Decree dated November 15, 2010.

Element I: Goals

SWRCB Waste Discharge Requirement:

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

I-1. SSMP Goals

The goals of the City of Millbrae SSMP are:

- Manage, operate, and maintain the condition of the wastewater collection systems to provide reliable customer service.
- Cost-effectively minimize infiltration and inflow and provide adequate sewer capacity to convey peak flows
- Minimize the frequency of SSOs and mitigate the impacts of SSOs.
- Ensure long-term infrastructure investment and financial stability.
- Provide workforce training, planning and development.
- Ensure water quality and environmental protection.

I-2. References - None

Element II: Organization

SWRCB Waste Discharge Requirement:

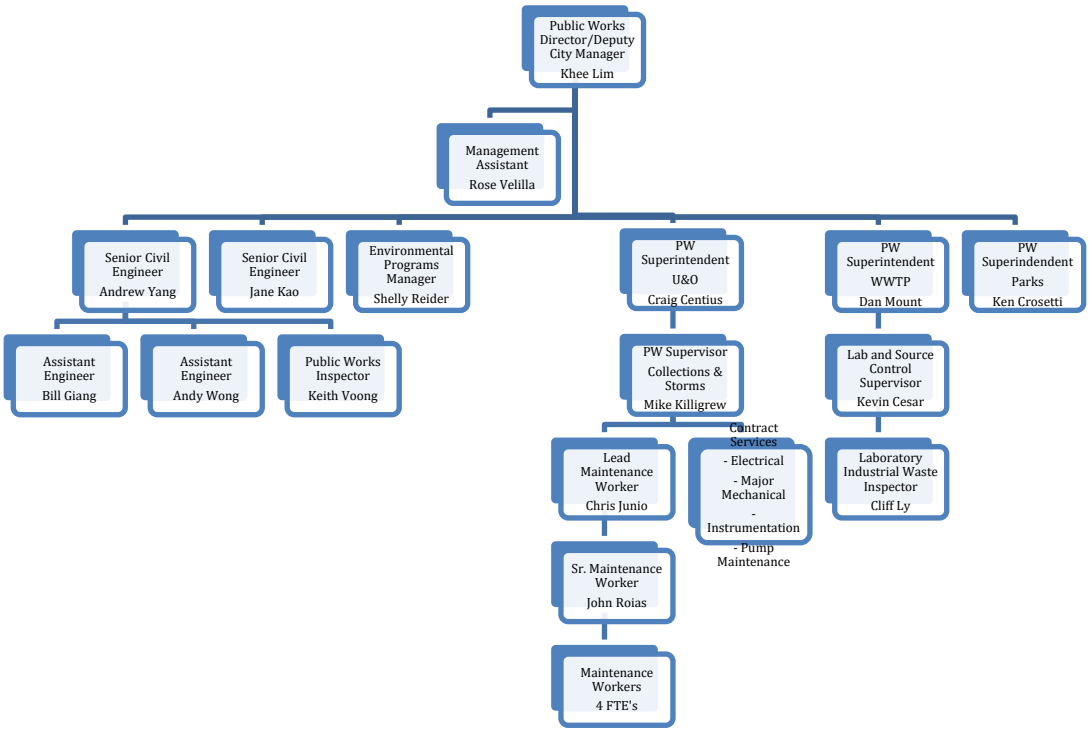
The Sewer System Management Plan (SSMP) must identify:

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

II-1. Organizational Structure

The organization chart for the management, operation, and maintenance of the City's wastewater collection system is shown below.

Figure II - 1: Millbrae Public Works Collection Systems Organization Chart



II-2. Authorized Representatives

The City's Legally Responsible Officials (LRO) for wastewater collection system matters as required by Section J of the WDR are identified below along with their roles and responsibilities for the collection system operations. They are authorized to submit electronic and written spill reports to the Office of Emergency Services (OES) to certify electronic spill reports and other required submittals to the SWRCB CIWQS. In addition the other City classifications that are responsible for collection system work are identified and their roles and responsibilities described.

Public Works Director – Plans, organizes, directs and supervises the public works activities of the City. Oversees all City public works activities including engineering, public improvement inspections, streets, storm drains, sanitary collection and treatment, water distribution and traffic engineering. Advises City officials on public works and related engineering matters. Assists in the formation of the City's Capital Improvement Program. Administers construction contracts and consultant requests for proposals and agreements.

Public Works Superintendent Utilities & Operations (U&O) - Legally Responsible Official (LRO) - Oversees the overall sanitary sewer program, communicates with the City Manager, provides reports to the City Council, establishes policy, plans strategy, reviews and certifies SSMP, allocates resources, delegates responsibility, authorizes outside contractors to perform services, and designates additional Legally Responsible Officials (LRO) to certify SSO reports and all Data Submitters (DS). Reports to Public Works Director.

Public Works Collections and Storms Operations Supervisor – Legally Responsible Official (LRO) - Manages field operations and maintenance activities, provides relevant information to agency management, prepares and implements contingency plans, leads emergency response, investigates and reports SSO's, and trains field crews. Reports to the Public Works Superintendent U&O.

Lead Maintenance Worker – Legally Responsible Official (LRO) - Responsible for maintenance and operations of the City's collection system. Implements preventive maintenance on the collection system and provides 24 hour emergency response. Reports to Public Works Supervisor.

Senior Maintenance Worker - Supervises and assists in the implementation of City and department rules, reports, regulations, policies and procedures; may inspect work being performed by outside contractors; inputs and retrieves data and work orders from a computer; and provides written reports. Reports to the Public Works Supervisor.

Maintenance Worker I/II – **Public Works -** Responds to SSOs. Performs preventive maintenance activities and mobilizes and responds to notification of stoppages and SSO's. Reports to Public Works Supervisor.

Equipment Mechanic – Supervises the vehicle garage operation under the direction of the Superintendent of Public Works. Supervises and assists in performing a variety of skilled tasks while performing major and minor mechanical repairs to automobiles, trucks, sweepers, tractors and other power driven mechanical equipment and to do related physical work as required. Coordinates vendors associated with mechanical equipment.

City Engineer –Plans, designs, reviews, and prepares detailed engineering plans, specifications, cost estimates, contracts, and related documents for sewer and other public works projects. Coordinates with the Utilities and Operations Department on sanitary sewer system issues. Administers major public works projects. Updates engineering standard plans and specifications. Prepares reports, correspondence, budget documentation and other administrative documents. Prepares the Capital Improvement Plan and budget. Acts as resident engineer for public works projects.

Engineering Technician – Under direct and/or indirect supervision, performs sub professional engineering office and fieldwork of moderate difficulty. Responsibilities in support of the sewer collection system include drafting work for plans and base maps, locating existing utilities, assists with project and contract administration and fleld inspection of construction, plan checking of improvement plans, maintains division databases, prepares cost estimates, and responds to public inquires and requests for assistance either in person or over the phone.

Industrial Waste Inspector I/II - Under general supervision of the Laboratory/Source Control Supervisor, and guidance of the Senior Industrial Waste Inspector implements and enforces the Federal General Pretreatment Regulations, the City Sewer Ordinance, the Federal Storm Water Regulations and Pollution Prevention Program Requirements; performs POTW process monitoring and NPDES permit self-monitoring requirements. The position also manages the Fats, Oils and Grease program for the City.

Administrative Assistant – Provides clerical and administrative support to the collection system operations under direction of the Public Works Director. Supports the City AIMS system by producing and completing works orders into the AIMS system, by supporting the data management in the AIMS system. Receives and responds to public inquires related to public works operations. Supports public works staff as requested and required.

Contractors – The City utilizes many outside service contractors to support collection system functions such as major electrical and instrumentation operations, major mechanical equipment, pump maintenance, engineering design and support and root control operations. These services are provided through service agreements or purchase orders issued by the City.

II-3. Responsibility for SSMP Implementation and Maintenance

The Public Works Superintendent shall have the overall responsibility for, implementing, periodically auditing, and maintaining the City's SSMP. He/she may delegate these responsibilities to his/her staff.

Other City Staff responsible for developing, implementing, and maintaining specific elements of the City's SSMP, along with their job titles and contact information, are shown in **Table II - 1**.

Table II - 1: Responsible Officials in Public Works Chain of Communication

Element	Element Name	Responsible City Official	Phone	Email
	Introduction	Public Works Director/ Deputy City Manager Khee Lim	(650) 259-2339	klim@ci.millbrae.ca.us
1	Goals	Public Works Director/ Deputy City Manager Khee Lim	(650) 259-2339	klim@ci.millbrae.ca.us
2	Organization	Public Works Superintendent Craig Centis	(650) 259-2376	ccentis@ci.millbrae.ca.us
3	Legal Authority	Public Works Director/Deputy City Manager Khee Lim	(650) 259-2339	klim@ci.millbrae.ca.us
4	Operations and Maintenance Program	Public Works Supervisor Michael Killigrew	(650) 259-2381	mkilligrew@ci.millbrae.ca.us
5	Design and Performance Provisions	Senior Civil Engineer Jane Kao	(650) 259-2545	jkao@ci.millbrae.ca.us
6	Overflow Emergency Response Plan	Public Works Supervisor Michael Killigrew	(650) 259-2381	mkilligrew@ci.millbrae.ca.us
7	Fats, Oils and Grease (FOG) Control Program	WPCP Lab Supervisor Kevin Cesar	(650) 259-2374	kcesar@ci.millbrae.ca.us
8	System Evaluation and Capacity Assurance Plan	Senior Civil Engineer Jane Kao	(650) 259-2545	jkao@ci.millbrae.ca.us
9	Monitoring, Measurement and Program Modifications	Public Works Superintendent Dan Mount	(650) 259-2388	dmount@ci.millbrae.ca.us
10	Program Audits	Senior Civil Engineer Jane Kao	(650) 259-2545	jkao@ci.millbrae.ca.us
11	Communications Program	City Clerk Elena Suazo	(650) 259-2414	esuazo@ci.millbrae.ca.us

II-4. SSO Reporting Chain of Communication

The SSO Reporting Chain of Command follows the Organization Chart shown above in Figure II - 1: Millbrae Public Works Collection Systems Organization Chart. The SSO reporting process and responsibilities are described in detail in the Overflow Emergency Response Plan in Element VI.

II-4.1. Reporting Structure

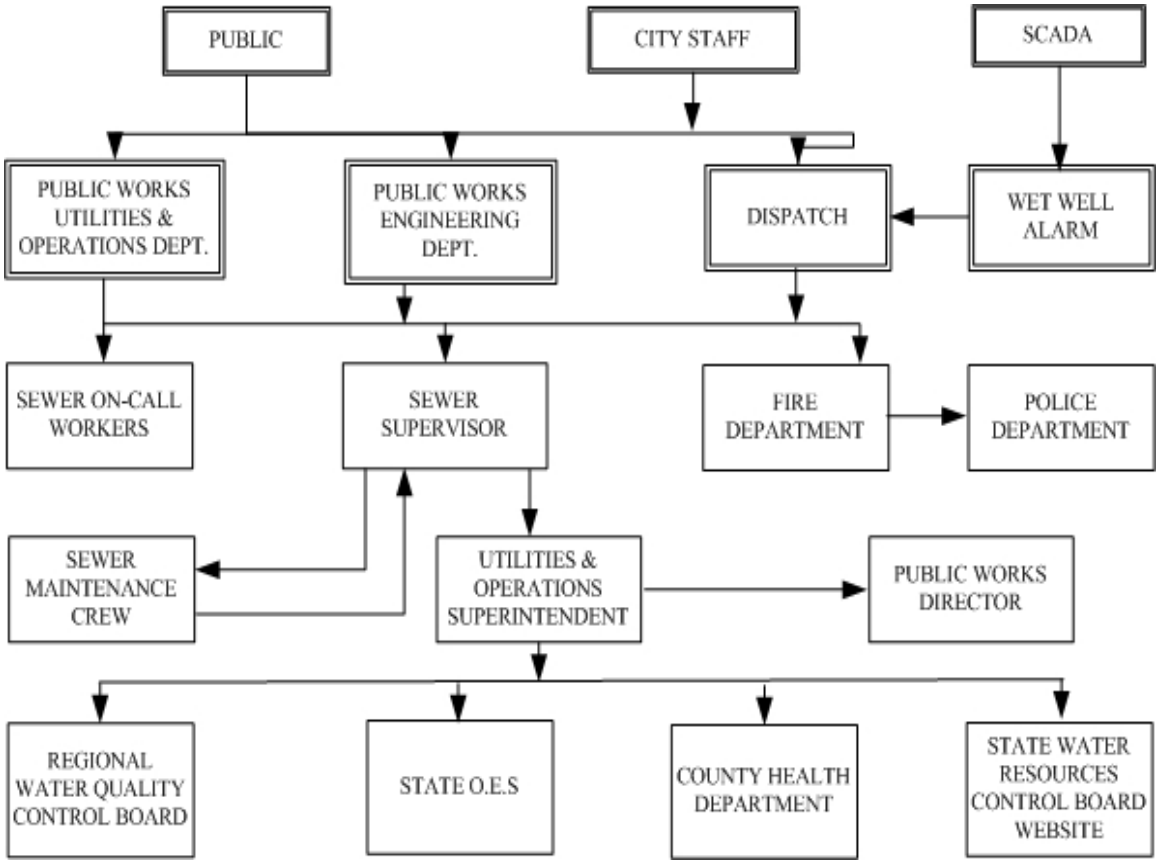
Both the U&O and WPCP superintendents report to the Public Works Director. The sewer crew reports to the Public Works Supervisor. These meetings are to encourage adequate communication among the groups and to ensure information is relayed and problems are addressed to provide better service to the customers.

Table II - 2: Contacts on the SSMP Organization Chart

Title	Name	Phone Number
City Manager (Interim)	Tom Williams	(650) 259-2334
Director of Public Works/Deputy City Manager	Khee Lim	(650)259-2339
Senior Civil Engineer	Jane Kao	(650) 259-2545
Utilities & Operations Superintendent	Craig Centis	(650) 259-2374
WPCP Superintendent	Dan Mount	(650) 259-2388
Sewer Collections Supervisor	Michael Killigrew	(650) 259-2381
Chief WPCP Operator	Julio Mejia	(650) 259-2393
Lab/Source Control Supervisor	Kevin Cesar	(650) 259-2392
Maintenance Leadworker	Chris Junio	(650) 259-2453

II-4.2. SSO Response Chain of Communication

Figure II - 2: Millbrae SSO Response Chain of Communication Chart



II-4.2.1 *Responding to Service Calls*

- The Fire Department is notified if hazardous substances are involved. The Fire Department will send a report to the Public Works Utilities and Operations Supervisor who will use this report for reporting purposes to the regulatory agencies.
- After the Sewer Maintenance Crew has contained the spill, fixed the sewer-related problem, and performed cleanup, the Sewer Maintenance Crew submits a report to the Public Works Supervisor.
- The SSO Reporting Process is described in detail in the Overflow Emergency Response Plan, Element VI of the SSMP, which has been prepared and is currently in- place.
- The City office is open Monday through Friday, 8:30 A.M. to 5:00 P.M. All service calls received during the business hours are directed to the Public Works Supervisor and the information is recorded in CMMS with a Service Call Number assigned to the service call. The office receptionist then relays the message to the Public Works

Supervisor. Service calls received after business hours are directed to the City Police Department Dispatch Center, and the message is relayed to the designated on-call sewer worker. The sewer worker summons additional help as necessary.

- The ability of the police, fire department, or citizen to be able to talk to a live person 24 hours per day adds the positive benefits of human interaction, significantly reducing the possibility of a missed call or misunderstanding about the nature of a problem.
- The Public Works Supervisor makes a report on every SSO. All SSO reports are forwarded to the appropriate regulatory agencies.

Table II - 3: Departments on the SSMP Organization Chart

Contact / Key Personnel	Office Phone Number	Mobile Number
City Hall	(650) 259-2334	Not available.
Utilities Department	(650) 259-2374	Not available.
Engineering Department	(650) 259-2339	Not available.
Police Department Dispatch	(650) 697-2300	Not available.
Fire Department	(650) 259-2400/2425	Not available.
Utilities & Operations Superintendent	(650) 259-2376	(650) 280-0916
Sewer Collections Supervisor	(650) 259-2381	(650) 280-0914
Sewer On-Call Worker	Not available.	(650) 280-0919 (650) 333-0723

II-4.3. Legally Responsible Officials (LRO)

1) Public Works Superintendent U&O, Craig Centis
2) Public Works Supervisor, Michael Killigrew
3) Maintenance Leadworker, Chr Junio

II-5. References - None

Element III: Legal Authority

SWRCB Waste Discharge Requirement:

Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

- Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc.);
- Require that sewers and connections be properly designed and constructed;
- Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;
- Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and enforce any violation of its sewer ordinances.

III-1. Municipal Code

The Millbrae Municipal Code describes the City's current legal authority required for compliance with the GWDR. That authority is specifically contained within of the Municipal Code and generally within other Municipal Code Titles that are summarized below.

Table III - 1: Summary of Legal Authorities City of Millbrae Municipal Code and Other Sources

Requirement	Legal Authority Reference Title 8 PUBLIC WORKS Chapter 8.20 MUNICIPAL SANITARY SEWER SYSTEM
Prevent illicit discharges into the wastewater collection system	8.20.720 Illicit Discharge Elimination
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	8.20.290 Prohibited Waste Discharges

Requirement	Legal Authority Reference Title 8 PUBLIC WORKS Chapter 8.20 MUNICIPAL SANITARY SEWER SYSTEM
Require that sewers and connections be properly designed and constructed	8.20.240 Design Standards, General
Require proper installation, testing, and inspection of new and rehabilitated sewers	8.20.270 Inspection Requirements
Clearly define City responsibility and policies for sewer lateral ownership, maintenance and rehabilitation or repair	8.20.160 Building Drain and Sanitary Sewer Lateral 8.20.430 Sanitary Sewer Laterals
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City	8.20.240 Design Standards, General
Control infiltration and inflow (I/I) from private service laterals	8.20.450 Testing & Replacement of Sanitary Sewer Laterals 8.20.460 Inspection of Sanitary Sewer Laterals as Precondition to Obtaining Building permit
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements	ARTICLE V- INDUSTRIAL WASTEWATER PRETREATMENT REQUIREMENTS 8.20.510 Pretreatment of Industrial Wastewater 8.20.670 Interceptors- When Required 8.20.680 Maintenance of Interceptors 8.20.620 Retention of Records 9.25.010 Adoption of California Plumbing Code, 2013 Edition

Requirement	Legal Authority Reference Title 8 PUBLIC WORKS Chapter 8.20 MUNICIPAL SANITARY SEWER SYSTEM
Authority to inspect grease producing facilities	ARTICLE VI- ENFORCEMENT REMEDIES 8.20.750 Right of Entry- Inspection and Sampling
Enforce any violation of its sewer ordinances	ARTICLE VI- ENFORCEMENT REMEDIES 8.20.760 Enforcement Actions

III-2. Agreements with Satellite Agencies

The City of Millbrae has no satellite agency agreement(s).

III-3. References

- City Municipal Code Titles 8 and 9

Element IV: Operations and Maintenance Program

SWRCB Waste Discharge Requirement:

The Sewer System Management Plan (SSMP) must include those elements listed below that are appropriate and applicable to the Enrollee's system:

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 stormwater 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 Preventive 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 provide equipment and replacement part inventories, including identification of critical replacement parts.

IV-1. Collection System Mapping

The wastewater collection system map and the storm water drainage map include the facilities and basic map information described herein. Some areas or facilities may not have the complete information; however, these maps are updated by the

Public Works Engineering Section staff as changes to the systems occur. The maps are complete and current, and are updated on an ongoing basis as new information is gained. The sewer system maps capture newly-replaced sewer mains and any connections to new subdivisions. Sewer and stormwater maps are stored in the Corporation Yard, in the City Public Works Engineering office, and in emergency response vehicles.

IV-1.1. Wastewater collection system map

- Manhole – ID number, location with reference to streets and property lines.
- Pipe and Force Main – name, location, size, shape, direction of flow, length, type of material.
- Pump Station – name, location

IV-1.2. Storm drainage map

- Manhole – ID number, location
- Storm water facilities – direction of flow, location, size
- Pump Station – name, location

The storm water facilities are not included on the same wastewater collection system map, but are shown on a separate set of maps. However, all of these maps are readily accessible to cross-verify the existence of both sanitary sewer and storm drainage facilities at the Corporation Yard and at the Public Works Engineering Office. In addition, the emergency response vehicles have copies of both of these maps.

All maps are update regularly based upon reports of changes from the field, additions or changes due to capital project work or other changes identified by either Public Works or Engineering. The maps are maintained on AIMS, the City's GIS system.

IV-2. Operations and Preventive Maintenance

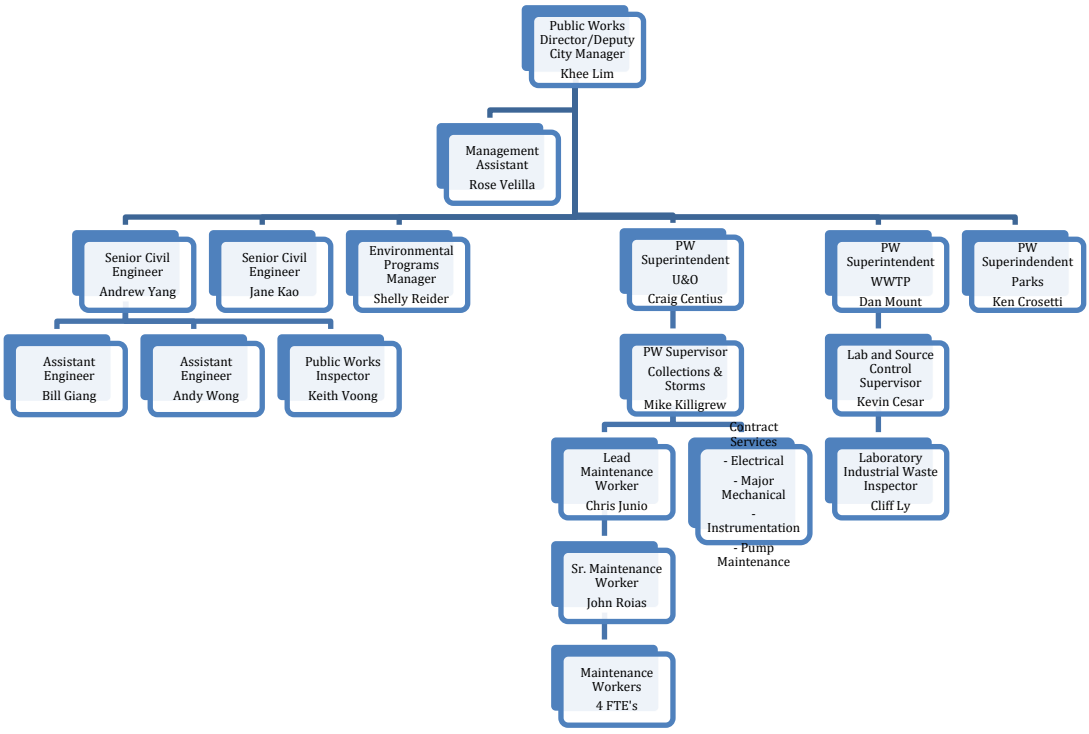
The elements of the City's sewer system O&M program include:

- Proactive, preventive, and corrective maintenance of gravity sewers;
- Ongoing CCTV inspection program to determine the condition of the gravity sewers;
- Rehabilitation and replacement of sewers that are in poor condition; and
- Periodic inspection and preventive maintenance for the Pump stations and force mains.

The collection system organization chart for implementing the City's O&M program is shown below in **Figure IV - 1: Millbrae Public Works Department Organization Chart**.

The details of the program are explained following the chart.

Figure IV - 1: Millbrae Public Works Department Organization Chart



IV-2.1. Gravity Sewers

IV-2.1.1 *Cleaning*

The City proactively cleans the entire Sanitary Sewer System at least annually, as directed by Section XII, Paragraph 46 of the 11/15/2010 Consent Decree. In addition, a separate cleaning program for hotspot locations is described in Paragraph 47.

The line cleaning crew executes cleaning with a variety of equipment, as described in the City's **Standard Operating Procedures** shown in **Appendix IV-A**.

Cleaning results are shown in annual reports required by the Consent Decree but are summarized below and in Appendix A for convenience.

Summary statistics for the hot spot lines are shown in **Error! Reference source not found.** below.

An extensive scoring and actions matrix is shown in the Consent Decree beginning on page 18. Paragraph 5, which begins with this declaration:

"Millbrae shall collect all observations made by its sewer cleaning crews regarding the extent and nature of materials removed during the cleaning process. The observations shall be recorded in Millbrae's database. Millbrae shall maintain or change the frequency of its hot spot cleaning for a Sewer Line Segment based on the Sewer Cleaning Results."

The historical line cleaning results are shown in **Table IV - 2: Historical Line Cleaning Results** below.

Table IV - 1: Hot Spot Lines

Frequency (Area)	Number of Pipe Segments	Line Cleaning, LF/period	Line Cleaning, Miles/period	Percent of System
3 months (Group 12)	4	751	0.14	0.2%
6 months (Group 6 Bayside)	76	13,820	2.62	4.4%
6 months (Group 10)	13	2,568	0.49	0.8%
6 months (Group 11)	7	1,646	0.31	0.5%

Table IV - 2: Historical Line Cleaning Results

Fiscal Year	Line Cleaning, LF	Line Cleaning Miles	Percent Of System
2008/2009	321,560	61	102%
2009/2010	298,111	56	95%
2010/2011	271,144	51	87%
2011/2012	247,103	47	79%
2012/2013	323,996	61	103%
2013/2014	277,723	53	89%
2014/2015	200,417	38	64%
2015/2016	229,020	43	73%
2016/2017	274,339	52	87%

The number of SSOs (Eight) that were reported through the California Integrated Water Quality System (CIWQS) increased in 2017, as compared to 2016 (five). Three of the SSOs were caused by root intrusion into a Lower Lateral (two) and Gravity Mainline (one). Two SSOs from manhole were due to flow exceeding the system capacity. There were two SSOs in Lower Laterals caused by debris; one from general, and the other from activity related to construction. Finally, an SSO was caused by FOG accumulation in a lower lateral. The City prepared a SSO Reduction Action Plan for 2018 that will focus on reducing and managing root intrusion into the collection system. The SSO Reduction Action Plan will be included in the 2018 Annual Report.

Table IV - 3. City of Millbrae Collect System SSO Reported from 2010 through 2017

Calendar Year	Maximum Allowable Number of SSOs Per 100 Miles of Sewer Line	Equivalent Maximum Allowable Number of SSOs Per 77 Miles of Sewer Line	Actual Number of SSOs Per 77 Miles of Sewer Line/Year
2010	65	50	34
2011	50	38	49
2012	30	23	13
2013	15	11	8
2014	7	5	3
2015	4	3	6
2016	3	2	5
2017	3	2	8

IV-2.1.2 *CCTV Inspection and Condition Assessment*

The City CCTV program is defined by the requirements that appear in the Consent Decree and is structured around a condition-based approach based upon the PACP rating system. In addition, the City is required to take certain actions to correct the defects found within time frames stated in the consent decree in paragraph 38**.** This paragraph also provides for the return inspection frequencies based upon the defect ratings. Finally the City is also required to CCTV locations of SSOs resulting from a lower lateral or from roots or debris. All City collection system lines shall be inspected at least once every five (5) years by City staff.

The historical results of the City CCTV efforts are shown below in **Table IV - 4: Historical Results of Closed Circuit Television**.

Table IV - 4: Historical Results of Closed Circuit Television

Fiscal Year	CCTV Results, LF	CCTV Results, Miles	Percent of System
2008/2009	0	0	0
2009/2010	0	0	0
2010/2011	36,010	6.82	11.49

2011/2012	45,304	8.58	14.46
2012/2013	110,535	20.93	35.28
2013/2014	125,597	23.78	40.08
2014/2015	68,094	12.89	21.73
2015/2016	28,557	5.41	3.24
2016/2017	77,561	14.69	8.81
Total Linear Feet	**491,658**		
Total Miles		**93.1**	**135.09**

IV-2.1.3 *Root Foaming*

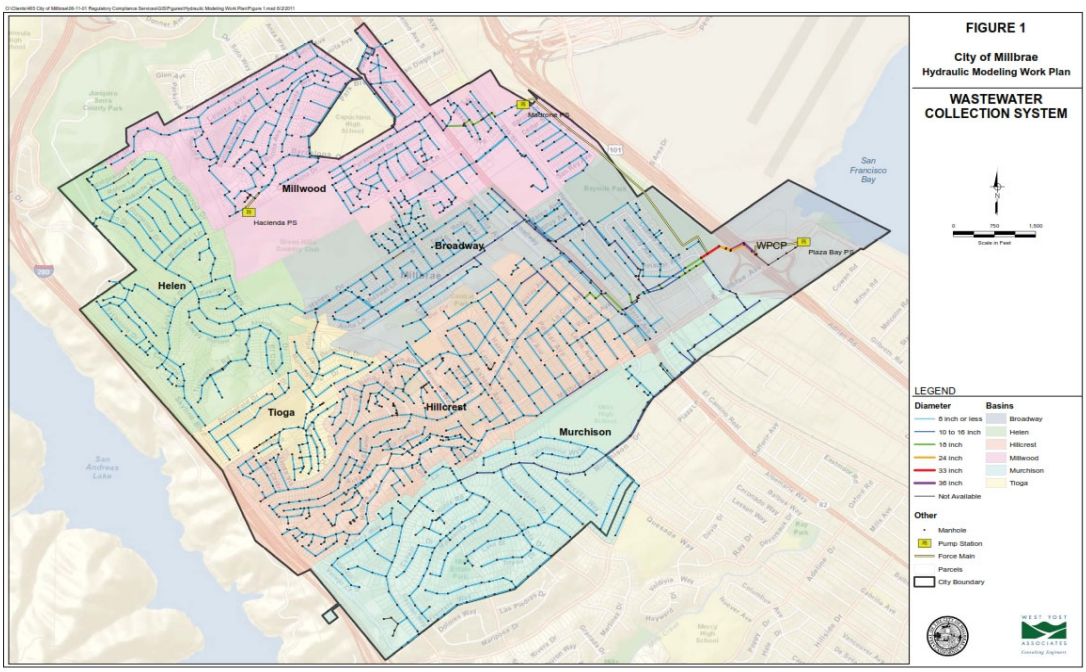
The City stopped root foaming from 2012 to 2018. However, because root intrusion has remained a stubborn problem in the City's collection system, the City has re-evaluated the feasibility of using chemical root control methods to address this issue. Until recently, the City would have required an outside contractor for chemical root control, which would have been cost prohibitive at the level of application that would have been required so as not to upset the City's treatment process. However, in April 2018, the City determined that chemical root control technology has advanced sufficiently that it can be economically and safely employed by City staff, rather than an outside contractor. When employed by City staff, chemical root control can be both economically viable and pose low risk to the City's. The City has developed a draft Standard Operations Procedures for its in-house chemical root project to be finalized by the end of 2018.

IV-2.2. Pump Stations

The City operates and maintains three pump stations and associated force mains: Madrone, Hacienda, and Plaza Bay Pump Stations., ranging in firm capacity from 300 to 1,425 gallons per minute, as shown below in **Figure IV - 2: Pump Station Location Map**. Each of the 3 pump stations discharge to force mains and they are identified and described in **Table IV - 3: Pump Station Locations and Descriptions** and **Table IV - 4: Force Main Locations and Descriptions** shown below.

The City conducts regular operational inspections of its Madrone pump stations in accordance with the OP57 shown in **Appendix IV-A: Standard Operating Procedures.**

Figure IV - 2: Pump Station Location Map



Source: Pump Station Access and Containment Map Book, October 2006

All Pump stations include SCADA monitoring systems that automatically page City staff if unusual conditions or alarms are registered 24/7. The Public Works Supervisor for Collections and Storm is responsible for all work scheduling and documentation for the Pump stations maintenance. In addition, he/she is to provide training to other collections system staff on the operations of each pump station so that staff is familiar with emergency response procedures in case of emergencies. An outside service contractor specializing in this type of maintenance provides major high voltage electrical maintenance.

The Public Works Department has established emergency response procedures during power outages for pump station operations. The City has contracted for the preparation of individual pump station contingency plans for each of the stations that should be completed by July 2016. These documents include important response information to protect Waters of the United State from SSOs that might reach these water bodies.

The contingency plans include wet well retention times, overflow containment directions and locations and directions of overflow paths from the stations. These procedures are intended to assure the maximum protection of the City's very important environmentally

sensitive areas. All emergency response employees are trained and required to understand these important procedures.

Table IV - 3: Pump Station Locations and Descriptions

Pump Station Name/Install Date	Pump Station Address	Number of Pumps	Pump Manufacturer	Pump Station Capacity, gpm	Standby Power, kW
Madrone	350 Madrone	3	Fairbanks Morse	1700	50
Hacienda	871 Hacienda	1	Chicago Yeoman	30	None
Plaza Bay	401 Millbrae Ave	2	Flygt	1700	None but bypass used

Table IV - 4: Force Main Locations and Descriptions

Force Main Name/Install Date	Force Main Length, LF	Force Main Size, Inches	Force Main Material	Installation Date
Madrone	8,000	14	Asbestos Cement	1980
Hacienda	400	4	Ductile Iron	1980
Plaza Bay	2,000	6	Ductile Iron	1975
Totals	10,400			

IV-2.3. **Private Sewer Laterals**

The City has no responsibility for the installation, maintenance, operation, repair or replacement of private sewer laterals connected to the City mains. This includes the upper and lower lateral. However, the city will maintain that portion of sanitary sewer lateral from a cleanout wye, inclusive of the cleanout wye, to the city sanitary sewer main under the following conditions (lower lateral):[1]

A. A cleanout is provided either in the sidewalk, or within two and one-half feet of the face of curb or edge of pavement where there is no sidewalk, or in a side or rear yard within two and one-half feet of the city main; when the cleanout is located outside of these designated areas, the property owner is responsible for maintaining the sanitary sewer lateral all the way to the city sanitary sewer main, including the wye connection at the main. The above maintenance responsibilities shall be conducted in full compliance with all applicable requirements contained in this chapter.

B. Prior to the city's acceptance of maintenance responsibility for that portion of a sanitary sewer lateral from a newly installed cleanout to the main, including the wye connection to the main, the property owner shall be responsible for having this section of lateral inspected internally by a closed circuit television camera and providing these results to the city for review. If the city determines that this section of the lateral is defective and does not meet city's requirements, the property owner shall be required to perform all repairs necessary to bring the condition of the lateral up to city standards. Property owner must obtain an encroachment permit from the city prior to performing any required repairs on the city's right-of-way. The city will accept maintenance responsibility for the section of the lateral from the new cleanout to the main only after both of the following conditions have been met: (1) the city has issued an encroachment permit for the required repairs in the city's right-of-way, and (2) all repair work is completed to the city's satisfaction. The City voluntarily reports all private sewer lateral SSOs as they become aware of the overflows.

Prior to transfer of ownership (close of escrow), property owners must perform an in-line closed circuit video inspection of their existing sanitary sewer lateral from the building to the City main per Millbrae Municipal Code section 8.20.450. The inspection is exempt if the lateral has been tested and passed within the last 5 years or if the entire lateral has been replaced within the last 20 years.

[1] Millbrae Municipal Code Section 8.20.430

During the video inspection the City Sanitary Sewer Lateral Inspection Form shall be filled out and submitted to the Public Works Engineering Division. The video submitted must be in DVD format and must be performed from the building to the City main. The City has an approximate one-week turn-around time on all videos submitted and follow-up is performed via e-mail.

The City of Millbrae Sanitary Sewer Lateral Rebate Program provides rebates to assist property owners with the cost of upgrades made to their private sanitary sewer laterals. Recently separated sanitary sewer laterals, sewer laterals that are required to upgrade to current City code, sewer laterals at risk of overflowing and broken sewer laterals, may qualify for a rebate from the City in the amount of 20% of the total cost paid for the upgrade or up to $2,000.00. Funds are limited and are available on a first-come, first-serve basis. The City has currently budgeted $300,000 annually for this program. Each residence is limited to one rebate from the City.

IV-2.4. Rehabilitation and Replacement Program

The City's Capital Improvement Plan for the next five (5) years was developed from the CCTV inspection program that assessed the condition of all gravity sewers, and that included PACP condition assessment of each line segment. The information gathered during the condition assessment was used to select and prioritize gravity sewers for repair/rehabilitation/replacement.

The City has an annual sewer rehabilitation and replacement program to rehabilitate or replace the portions of its wastewater collection system and pump stations related assets where conditions warrant. The projects that are included in the **City's Renewal & Replacement Program Budget are listed in Appendix IV-B**. The funds that support the Capital Improvement Program come from the City's sewer service charges that are based upon regular sewer service charge rate analyses.

IV-2.5. Training

The City uses a combination of in-house classes and field exercises; on the job training; conferences, seminars, OSHA classes and other training opportunities that are provided in the California area. The City requires its wastewater collection system employees to be certified in Collection System Maintenance by the California Water Environment Association. The certification process requires employees to demonstrate that they have participated in 12 hours of training every two years in order to renew their certificates.

The City conducts department seminars for its wastewater collection system employees on both the SSMP and OERP annually including volume estimation and SSO start time

determinations. This training includes field exercises in the estimation of SSO volume and SSO containment.

In addition, the City conducts annual confined space entry and certification for all employees that might be required to enter confined spaces anywhere in the City. Finally, the City conducts weekly tailgate meetings with all collections system staff to discuss topics related to safety, operations and performance expectations.

The City's maintenance crews receive work-related training on a regular basis, and the City documents the training programs and activities in writing. Training courses attended by staff in 2016 include the following:

- PACP Certification
- Underground Utility Maintenance & Construction Safety
- CWEA TCP Prep Training
- Sewer Spill Mitigation Training
- SSO Response & Reduction Workshop
- Electrical Instrumentation: Pump Station Optimization
- First Aid & C.P.R.
- Respirator Training
- Injury & Illness Prevention Program
- Safety & Traffic Control Plans for Work Zones
- Bi-Monthly, In-House Job Site Safety Tailgates including Housekeeping & Work Practices

IV-2.6. Equipment and Replacement Parts

The list of the major equipment that City uses in the operation and maintenance of its sewer system is included in **Appendix IV-C: Major Sewer System Equipment Inventory**.

The City has developed a Critical Replacement Parts List. It has also developed a Replacement Parts Inventory procedure that is included in **Appendix IV-D: Critical Sewer System Replacement Parts Inventory**.

IV-2.7. Outreach to Sewer Service Contractors

Public Works Standards for Public Works Construction on City projects require plumbers and contractors to implement proper procedures in preventing blockages in sanitary sewer laterals and sewer mains. Plumbers and contractors are required to use the specific materials and methods, and to conduct good housekeeping during their work, such as

removal of foreign materials in the pipes by not disposing or pushing these, materials into the main. In addition, during lateral maintenance, plumbers are required to place traps downstream of the lateral to catch and dispose of all materials from cleaning.

During permit applications or response to questions from plumbers and building contractors, Public Works refers this group of people to the City Standard Drawings and the City Municipal Code that are both available on the web or at the Public Works counter at City Hall where experienced staff are always available.

The City's standard service and construction contract language requires all contractors working in the wastewater collection system to provide training for their employees on the City's Sanitary Sewer Overflow Emergency Response Plan, or demonstrate they have been trained on an equivalent emergency response plan of their own.

The City general provisions provide language requiring that contractor's certify to the City that their emergency response programs are at least as comprehensive as the City OERP. Emergency response procedures are reviewed at all pre-construction meetings and regularly during City construction projects.

All construction contractors working on City sewer facilities will be required to develop a project-specific OERP, will provide project personnel with training regarding the content of the contractor's OERP and their role in the event of an SSO, and to follow that OERP in the event that they cause or observe an SSO. Emergency response procedures shall be discussed at project pre-construction meetings, regular project meetings and after any contractor involved incidents.

IV-3. References

- Wet Weather Alternatives Analysis. July 2014, West Yost Associates
- San Francisco Baykeeper vs. City of Millbrae. Civil Case No. CV 09-05675 SBA, Consent Decree dated 11/15/10
- Sanitary Sewer Later Rebate Program
- Millbrae Municipal Code, Chapter 8.20 Municipal Sanitary Sewer System
- Sanitary Sewer Lateral Inspection Process on Sale, April 11, 2011

IV-4. Element IV Appendices

Appendix IV-A: Standard Operating Procedures

The City of Millbrae maintains a library of standard operating procedure that is divided into two groups: **Operations Standard Procedures** and **Equipment Standard Operating Procedures**. The staff is working on reviewing and revising as necessary.

The SOP's are subject to ongoing revisions and are listed below in this document to provide efficient access to the documents for inspection and reference.

Operations Standard Operating Procedures:

OP-3- Lateral Cleaning.doc

OP-4- Hand Rodding.doc

OP-5- Power Rodding.doc

OP-6-Sewer Lateral Video Inspection.doc

OP-7- Sewer Main Video Inspection.doc

OP-8- Pipe Bursting.doc

OP-14-Pipe Locating-USA Marking.doc

OP-16- Sewer Callouts.doc

OP-17- Sewer Main Repairs.doc

OP-18- Sewer Lateral Repairs.doc

OP-50-Pumping Utility Vault Lids.doc

OP-52- USA Ticket Handling.doc

OP-54-Shoring (Excavating.doc

OP-56-Confined Space Entry.doc

OP-57-Maintenance at Madrone Pump Station.pdf

OP-59-Concrete & Asphalt Cutting.doc

Equipment Standard Operating Procedures

EQ-1- Cable Machine.doc

EQ-2- Seeker Lateral Camera.doc

EQ-3- Pathfinder Mainline Camera.doc

EQ-4- H.D.P.E. Fusion Welder.doc

EQ-22- Backhoe.doc

EQ-29 Utility (Pickup Truck.doc

EQ-38- Bobcat Loader.doc

EQ-40- Steel Plates.doc

EQ-42- MSDS.doc

EQ-46-VacConCombination Machine.doc

EQ-47- Pipe Bursting Equipment.doc

EQ-57- Power Rodder.doc

EQ-59- Self Contained Breathing Apparatus.doc

Appendix IV-B: Renewal & Replacement Program Budget in $1000's

Description	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	TOTAL ALL FY
Flow Monitoring	$ 50	$ 50	$ 50	$ 50	$ 50	**$ 250**
Smoke Testing	$ 50	$ 50	$ 50	$ 50	$ 50	**$ 250**
CCTV Inspection	$ 200	$ 200	$ 200	$ 200	$ 200	**$ 1,000**
I/I Reduction Per Baykeeper Consent Decree	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	**$ 10,000**
Madrone Pump Station/Force Main	$ 1,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	**$ 7,000**
Emergency Sewer Lateral and Main Replacement	$ 500	$ 500	$ 500	$ 500	$ 500	**$ 2,500**
Sewer Main Replacement/Repair	$ 2,900	$ 2,000	$ 2,000	$ 2,000	$ 2,000	**$ 10,900**
Capital Equipment Outlay	$ 50	$ 50	$ 50	$ 50	$ 50	**$ 250**
Total	**$ 6,750**	**$ 6,850**	**$ 6,850**	**$ 6,850**	**$ 4,850**	**$32,150**

FUNDING SOURCE:	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	TOTAL ALL FY
Sanitation Fund (1661)	$ 6,750	$ 6,850	$ 6,850	$ 6,850	$ 4,850	**$32,150**
Unfunded (future)						
Total	$ 6,750	$ 6,850	$ 6,850	$ 6,850	$ 4,850	**$32,150**

Appendix IV-C: Major Sewer System Equipment Inventory

Equipment Number	Major Equipment Type	Year Purchased
628	Ford 350 Utility Truck	1999
755	Ford F350 Utility Truck	2004
709	Ford F250 Utility Truck	2009
712	Ford F250 Pick Up Truck	2015
715	GMC Camera Van	2014
304	Street Sweeper International/Schwartze	2006
342	Vac-Con Combo Unit International Chassis	2014
711	Vac-Con Combo Unit Freightliner/Chassis	2014
326	GMC 7500 Dump Truck	2000
328	GMC 6500 Dump Truck	2000
360	Ford F250 Pick Up Truck	2015
468	John Deere 310 SE Backhoe	2000
311	John Deere 310 SG Backhoe	2000
	Bobcat with Hammer and Backhoe Attachment	2000
377	Wacker Asphalt Roller	2007
708	Ingersoll Rand Air Compressor	2006
	Bri-Mar Hydraulic Dump Trailer	2005
480	Wacker Light Tower	2002
476	Wacker Light Tower	2002
474	Gas Powered Arroe Board	1990
	Battery Powered Arroe Board	2006
322	Power Washer	1995
	Genie TL-34/20 Lift	2012
	Dewalt Portable Gas Compressor	2008
	Dewalt Portable Electronic Compressor	2008
	Trick Pipe Bursting Unit	2010
	6” HDPE Fusion Unit	2005

	4” HDPE Fusion Unit	2005
	Wacker Trench Tamper	2000
	Wacker Asphalt Tamper	2006
	Stihl Cut-Off Saw	2005
	Stihl Walk-Behind Saw	2008
	Honda EN500 Generator	2005
	Honda EU1000 Generator 7	2009
	Honda 3500 SX Generator on Trailer	2000
	Spartan Cable Machine 3	2000
	Friat Thermal Coupler Unit	2005
	12’ Equipment Trailer	2000
	15’ Equipment Trailer	2000
	Bosch Large Hammer	2008
	Bosch Bulldog Small Hammer	2008
	De Walt Combo Tool Kit Sawzall Skill Saw	2010
	Aries Mainline Camera with 800’ Reel	2012
	Aries Lateral Camera 200’	2012
	Camera Van Computer Aims/Itpipe	2015
	Stihl Chainsaws 12”-30”	2002
	Stihl Pole Saws (2)	2002

* Equipment Inventory as of February 2016

Appendix IV-D: Critical Sewer System Replacement Parts Inventory

Part Description as of February 2016	Number in Inventory	Location
6”x6”x6” Clay WYE	3	Aviador
6”x6”x4” Clay WYE	2	Aviador
8”x8”x4” Clay WYE	7	Aviador
6”x6” VCP Pipe	3	Aviador
45 HDPE Elbow	36	Aviador
Flexible Thermal Coupler 4”	2	Aviador
4” Thermal Coupler	20	Aviador
6” Thermal Coupler	14	Aviador
4” HDPE Clean Out Adaptor	8	Aviador
6” HDPE Clean Out Adaptor	1	Aviador
6” Clay to Clay Band	12	Aviador
8” Clay to Plastic Band	12	Aviador
6” Clay to 4” Plastic Band	4	Aviador
4” Clay to Clay Band	12	Aviador
4” 33° HDPE Elbows	50	Aviador
6”x6”x6” HDPE WYE	1	Aviador
6”x6”x4” HDPE WYE	20	Aviador
4”x4”x4” HDPE WYE	4	Aviador
4’x4’ Check Valve	2	Aviador
4” Pop-Up Valve	100	Aviador
6”x20” HDPE Pipe (Grey)	1	Aviador
12”x12” SDR Pipe	1	Aviador
B9 Concrete Box	3	Aviador
8” Round Concrete Box	5	Aviador
6”x20” HDPE Pipe (Black)	15	Corp Yard
4”x20” HDPE Pipe (Black)	20	Corp Yard
4” Corrugated Pipe	50’	Aviador
6” Corrugated Pipe	50’	Aviador

Element V: Design and Performance Provisions

SWRCB Waste Discharge Requirement:

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.

V-1. Design Criteria for Installation, Rehabilitation and Repair

The City's Wastewater Collection System Design Criteria are administered by the Public Works Department of the City and its various Divisions.

V-1.1. General

The City standards provide for both new construction and rehabilitation and repair of all main lines sewers, trunk sewers, manholes, pump stations and other collection system appurtenances.

V-1.2. Private Sewer Systems and Private Laterals

The City of Millbrae has standards and specifications in-place for its sanitary sewer system. As necessary, these documents are updated to incorporate new designs and technologies applicable to its wastewater collection system, and to reflect actual site-specific conditions within the City. Likewise, the City refers also to the *Greenbook Standard Specifications for Public Works Construction* and the *Caltrans Standard Plan and Specifications* as complementary documents for construction of new sewer facilities, rehabilitation, and repair construction methods. On certain occasions, the design by the private sector, manufacturer, and other agencies are adapted and used in City projects and private improvements.

The standards and specifications for the City wastewater collection system that are commonly used in the bid or contract documents under the section on *Technical Provisions for Public Works Construction.*
These include the following elements:

- Design Criteria.
- Materials and Installation, including pipes and joints, manholes, cleanouts, service laterals, connections, backflow preventer device.
- Excavation and Backfill
- Cleaning, Testing and Inspection

The standard drawings include the following:

- Sanitary Sewer Lateral Connection
- Sanitary Sewer Cleanout and Backflow Preventer Device
- Precast Concrete Sewer Manhole
- Concrete Manhole (18" or larger pipe diameter)
- Manhole Frame and Cover (30")
- Manhole Frame and Cover (36")
- Utility Frame and Cover Adjustment
- Sanitary Sewer Monitoring Manhole
- Sanitary Sewer Crossing
- Sanitary Sewer Peaking Factor Chart
- ABS and PVC Extendable Backflow Preventer Device

V-2. Inspection and Testing Criteria

The City assigns an inspector or contracts with an engineering firm to inspect new construction, rehabilitation and repair projects. The inspector ensures that all construction complies with City standards and codes prior to acceptance of the work.

The procedures and standards for inspecting and testing the installation of new sewers and its appurtenances, rehabilitation and repair projects are described in the City standards and specifications, contract documents, manufacturer's specifications and the City Municipal Code. These include testing of manholes, gravity pipes, force mains, cleanouts, pump stations and valves; compaction and material testing; pipe cleaning and CCTV inspections, SCADA testing; requirements for performance bonds; inspection fees; and inspectors checklists which needs to be addressed before acceptance of the work

V-3. References

- City Public Works Standards
    - Part I General Conditions
    - Part II Technical Conditions

    - Part III Standard Plans
- Standard Specifications for Public Works Construction and the Caltrans Standard Plan and Specifications, Greenbook

Element VI: Overflow Emergency Response Plan

SWRCB Waste Discharge Requirement:

Each Enrollee 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 an 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 MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The Sewer System Management Plan (SSMP) 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 and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to 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.

VI-1. Purpose

The purpose of the City of Millbrae's Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for City personnel to follow in responding to, cleaning up, reporting and debriefing/failure analyses SSOs that may occur within the City's service area. This OERP satisfies the SWRCB Statewide General Waste Discharge

Requirements (GWDR), which require wastewater collection agencies to have an Overflow Emergency Response Plan. All Appendices references in this Element refer to the appendiced in the DKF Solutions, Inc. Sanitary Sewer Overflow and Response Field Guide (Field Guide) found in all City vehicles.

VI-2. Policy

The City's employees are required to report all wastewater overflows found and to take the appropriate action to secure the wastewater overflow area, properly report to the appropriate regulatory agencies, relieve the cause of the overflow, and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and protect the environment. The City's goal is to respond to sewer system overflows as soon as possible following notification. The City will follow reporting procedures in regards to sewer spills as set forth by the California State Water Resources Control Board (*SWRCB)*.

VI-3. Goals

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

- Work safely;
- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Prevent sewage system overflows or leaks from entering the storm drain system or receiving waters to the maximum extent practicable;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO;
- Meet the regulatory reporting requirements;
- Evaluate the causes of failure related to certain SSOs; and
- Revise response procedures resulting from the de brief and failure analysis of certain SSOs.

VI-4. SSO Detection and Notification

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

The City operates three (3) wastewater pump stations. In the event of any pump failure, the high level sensor activates the SCADA alarm system and the City is contacted. To

prevent overflow, wastewater from the wet well can either be pumped into a vacuum truck for disposal to a nearby sanitary sewer manhole, or bypassed around the station into the sanitary sewer system.

VI-4.1. Public Observation

Public observation is the most common way that the City is notified of blockages and spills. Contact numbers and information for reporting sewer spills and backups are in the phone book and on the City's website: www.ci.millbrae.ca.us. The City's telephone number for reporting sewer problems is (650) 259-2374.

Normal Work Hours

When a report of a sewer spill or backup is made during normal work hours, the Senior Office Assistant receives the call, completes the Sewer Service Callout Form, and relays the information to the Collections Supervisor who will then dispatch a Collections Crew to the incident.

After Hours

After hours callers are directed to call County Dispatch, which will notify the Standby Employee indicated on the most recent Standby Callout List.

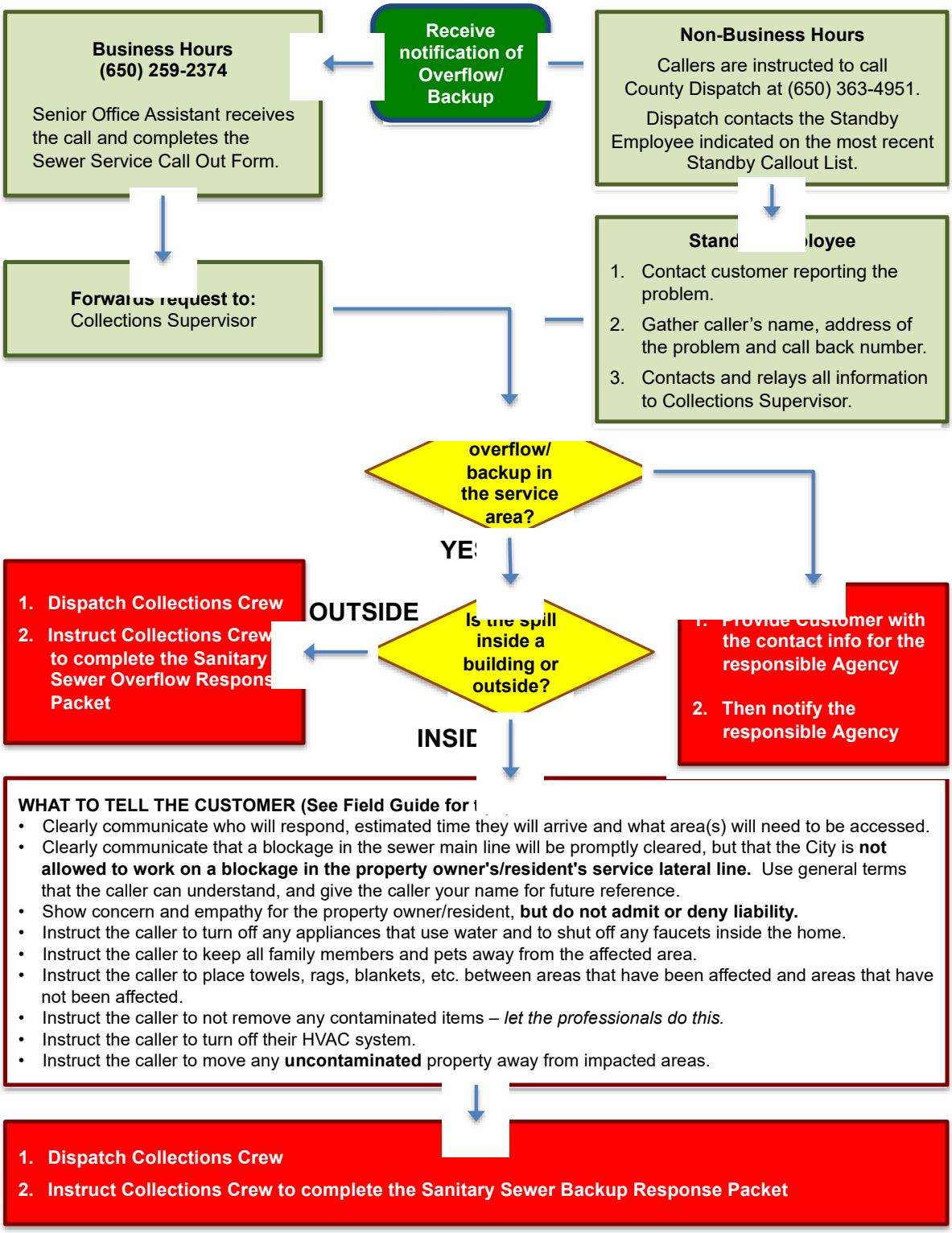
When calls are received, either during normal work hours or after hours, the individual receiving the call will collect the following information:

- Time and date of call
- Specific location of potential problem
- Nature of call
- In case of SSO, estimated start time of overflow
- Caller's name and telephone number
- Caller's observation (e.g., odor, duration, location on property, known impacts, indication if surface water impacted, appearance at cleanout or manhole)
- Other relevant information

The following is an overview of receiving a sewage overflow or backup report:

Figure VI - 1: Overview of Receiving a Sewage Overflow or Backup Report below is an overview of the sewage overflow reporting input process.

Figure VI - 1: Overview of Receiving a Sewage Overflow or Backup Report



VI-4.2. City Staff Observation

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

VI-4.3. Contractor Observation

The following procedures are to be followed in the event that a contractor/plumber causes or witnesses a Sanitary Sewer Overflow. If the contractor/plumber causes or witnesses an SSO they will:

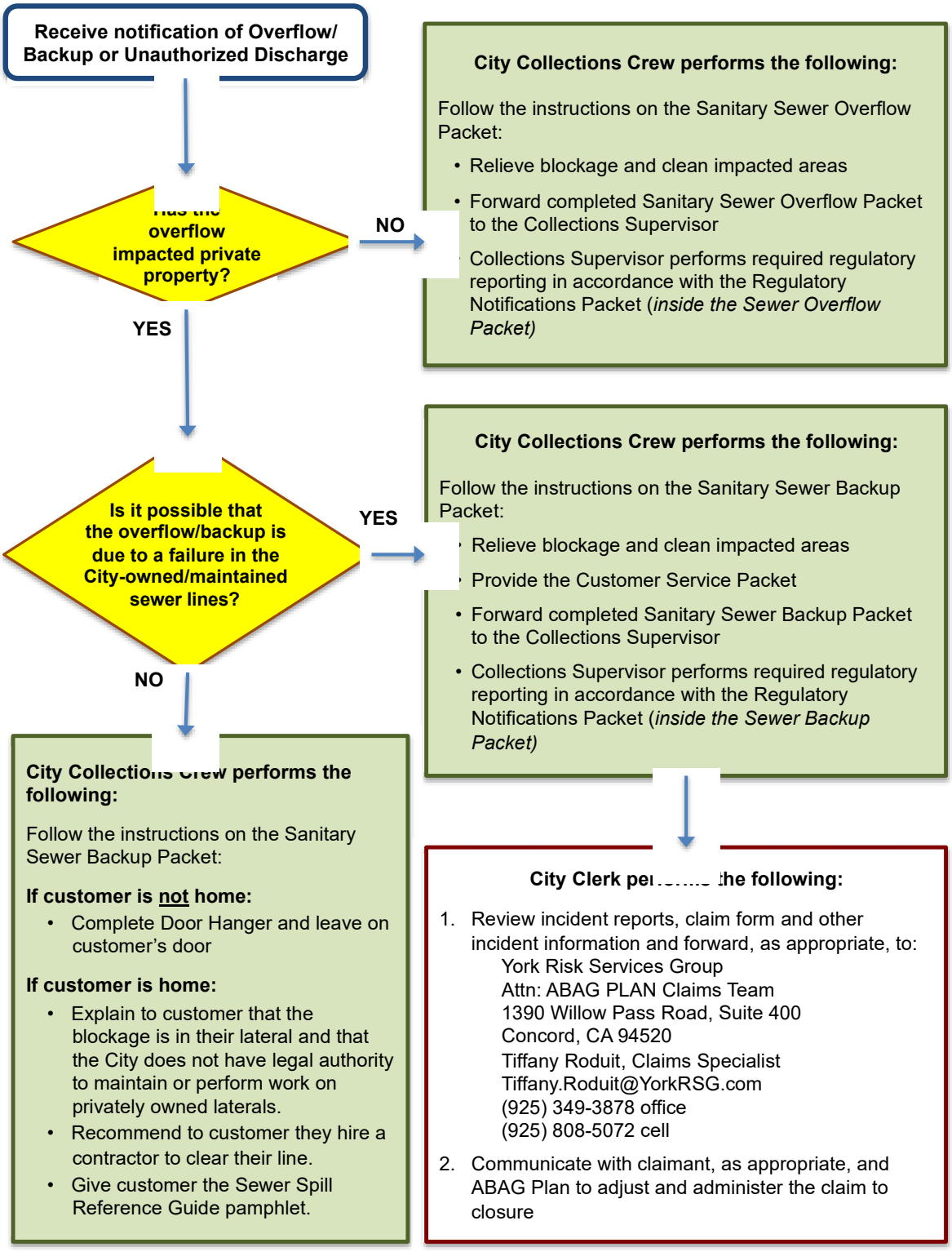
1. Immediately notify the City
2. Protect storm drains
3. Protect the public
4. Provide information to the City Field Crew such as start time, appearance point, suspected cause, weather conditions, etc.
5. Direct ALL media and public relations requests to the Director of Public Works.

VI-5. SSO Response Procedures

VI-5.1. Sewer Overflow/Backup Response Summary

The City will respond to SSOs as soon as feasible following notification of an overflow/backup or unauthorized discharge. The following diagram is an overview of the response activities.

Figure VI - 2: Overview of SSO/Backup Response



VI-5.2. First Responder Priorities

The first responder's priorities are:

- To follow safe work practices.
- To respond promptly with the appropriate and necessary equipment.
- To contain the spill wherever feasible.
- To restore the flow as soon as practicable.
- To minimize public access to and/or contact with the spilled sewage.
- To promptly notify the Senior Operations Supervisor of the SSO.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).
- To photograph and document affected and unaffected areas from the spill.

VI-5.3. Safety

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. There may be times when City personnel responding to a sewer system event are not familiar with potential safety hazards peculiar to sewer work. In such cases it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before starting the job. This includes the use of gas monitoring detectors for air quality in manholes and traffic controls at the site.

VI-5.4. Initial Response

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

The first responder will:

- Note arrival time at the site of the overflow/backup.
- Verify the existence of a public sewer system spill or backup.
- Determine if the overflow or blockage is from a public or private sewer.
- Identify and assess the affected area and extent of spill.
- Contact reporting party if time permits.
- If the spill is large or in a sensitive area, document conditions upon arrival with photographs. Decide whether to proceed with clearing the blockage to restore the flow or to initiate containment measures. The guidance for this decision is:

- Small spills (i.e., spills that are easily contained) – proceed with clearing the blockage.
- Moderate or large spill where containment is anticipated to be simple – proceed with the containment measures.
- Moderate or large spills where containment is anticipated to be difficult – proceed with clearing the blockage; however, whenever deemed necessary, call for additional assistance and implement containment measures.
- Take steps to contain the SSO. For detailed procedures refer to the Sanitary Sewer Backup Procedures, and the Sanitary Sewer Overflow Packet and Appendix C: Sanitary Sewer Overflow Response Packet
-

VI-5.5. Initiate Spill Containment Measures

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

- Determine the immediate destination of the overflowing sewage.
- Plug storm drains using air plugs, sandbags, and/or plastic mats to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Turn on downstream diversion units if applicable.
- Refer to the Pump Station Access and Containment Map Book as necessary.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Pump around the blockage/pipe failure.

For detailed procedures refer to the Sanitary Sewer Overflow Packet in Appendix C.

VI-5.6. Restore Flow

Using the appropriate cleaning equipment, set up downstream of the blockage and hydro-clean upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not reoccur downstream. If the blockage cannot be cleared within a reasonable time from arrival, or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If other assistance is required, immediately contact the Public Works Superintendent. For detailed procedures refer to the Sanitary Sewer Overflow Packet Appendix C.

VI-5.7. Equipment

This section provides a list of specialized equipment that supports the City's OERP.

- *Closed Circuit Television (CCTV) Inspection Unit* – A CCTV Inspection Unit is required to determine the root cause for all SSOs from gravity sewers.
- *Camera* -- A digital or disposable camera is required to record the conditions upon arrival, during clean up, and upon departure.
- *Emergency Response Trucks* -- A utility body pickup truck, or open bed is required to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools will include containment and clean up materials.
- *Portable Generators, Portable Pumps, Piping, and Hoses* – Equipment used to bypass pump, divert, or power equipment to mitigate an SSO.
- *Combination Sewer Cleaning Trucks* -- Combination high velocity sewer cleaning trucks with vacuum tanks are required to clear blockages in gravity sewers, vacuum spilled sewage, and wash down the impacted area following the SSO event.
- *Power Rodder* – Equipment used to clear blockages that are in the hilly areas and that are hard to reach with the combo unit. Also used when laterals are draining flat-sloped to the main.
- Plugs, sandbags and plastic mats
- SSO Sampling Kits (Chlorine Test Kit)
- Portable Lights

The standard operating procedures for all equipment are located on the City server, in binders in the main office, in Appendix IV-A and on vehicles.

VI-6. Recovery and Cleanup

The recovery and cleanup phase begins immediately after the flow has been restored and the spilled sewage has been contained to the extent possible. The SSO recovery and cleanup procedures are:

VI-6.1. Estimate the Volume of Spilled Sewage

Use the methods outlined in the Sanitary Sewer Backup Packet and the Sanitary Sewer Overflow Packet in Appendix B and/or the Field Guide to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos and/or video of the SSO site before and during the recovery operation.

VI-6.2. Recovery of Spilled Sewage

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

VI-6.3. Clean-up and Disinfection

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

VI-6.3.1 *Private Property*

City crews are responsible for the cleanup when the property damage is minor in nature and is outside of private building dwellings, such as in front, side and backyards, easements, etc. In all other cases, affected property owners can call a water damage restoration contractor to complete the cleanup and restoration. If the overflow into property is the definite cause of City system failure, the property owner can call out a water damage restoration contractor to complete the cleanup and restoration. In both cases, property owners may pick up City claim forms from the City Clerk.

VI-6.3.2 *Hard Surface Areas*

Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Wash down the affected area with clean water and/or deozyme or similar non-toxic biodegradable surface disinfectant until the water runs clear. The flushing volume will be approximately three times the estimated volume of the spill. Take reasonable steps to contain and vacuum up the wastewater. Allow area to dry. Repeat the process if additional cleaning is required.

VI-6.3.3 *Landscaped and Unimproved Natural Vegetation*

Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Wash down the affected area with clean water until the water runs clear. The flushing volume will be approximately three times the estimated volume of the spill. Either contain or vacuum up the wash water so that none is released. Allow the area to dry. Repeat the process if additional cleaning is required.

VI-6.3.4 *Natural Waterways*

The Department of Fish and Wildlife will be notified by CalOES for SSOs greater than or equal to 1,000 gallons.

VI-6.3.5 *Wet Weather Modifications*

Omit flushing and sampling during heavy storm events (i.e., sheet of rainwater across paved surfaces) with heavy runoff where flushing is not required and sampling would not provide meaningful results.

VI-6.4. Public Notification

Signs will be posted and barricades put in place to keep vehicles and pedestrians away from contact with spilled sewage. County Environmental Health instructions and directions regarding placement and language of public warnings may be followed. Additionally, the Public Works Supervisor will use their best judgment regarding supplemental sign placement in order to protect the public and local environment. Signs will not be removed until directed by County Environmental Health, the Public Works Supervisor or designee.

Creeks, streams and beaches that have been contaminated as a result of an SSO will be posted at visible access locations until the risk of contamination has subsided to acceptable background bacteria levels. The area and warning signs, once posted, will be checked every day to ensure that they are still in place. Photographs of sign placement will be taken.

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

When contact with the local media is deemed necessary, the City Clerk or their designee will provide the media with all revelvant information.

VI-7. Water Quality

VI-7.1. Waters of the State/United States

The following Waters of the State/United States are in the City of Millbrae's service area:

- San Francisco Bay
- Highline Canal
- El Portal Canal
- Lomita Canal
- Tioga Creek
- Green Hills Creek
- Millbrae Creek
- Lomita Creek
- Minorca Creek
- Cowan Canal

VI-7.2. Water Quality Sampling and Testing

Water quality sampling and testing is required for Category 1 SSOs of 50,000 gallons or greater to determine the extent and impact of the SSO. The water quality sampling procedures must be implemented within 48 hours and include the following:

- The first responders will collect samples as soon as possible after the discovery and mitigation of the SSO event.
- The water quality samples will be collected from upstream of the spill, from the spill area, and downstream of the spill in flowing water (e.g. creeks). The water quality samples will be collected near the point of entry of the spilled sewage.
- The samples shall then be brought to the San Mateo County Environmental Health Department Laboratory.

VI-7.3. Water Quality Monitoring Plan

The City Water Quality Monitoring Plan dated July 25, 2015 will be implemented immediately upon discovery of any Category 1 SSO of 50,000 gallons or more or as required by the Regional Board in order to assess impacts from SSOs to surface waters. The SSO Water Quality Monitoring Program will:

1. Contain protocols for water quality monitoring.
2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.)
3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.
4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.
5. Within 48 hours of the City becoming aware of the SSO, require water quality sampling for ammonia and total and fecal coliform.
6. Observe proper chain of custody procedures.

VI-7.4. SSO Technical Report

The City will submit an SSO Technical Report to the CIWQS Online SSO Database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters. The Public Works Supervisor will supervise the preparation of this report and will certify this report. This report, which does not

preclude the Water Board(s) from requiring more detailed analyses if requested, shall include at a minimum, the following:

Causes and Circumstances of the SSO:

- Complete and detailed explanation of how and when the SSO was discovered.
- Diagram showing the SSO failure point, appearance point(s), and final destination(s).
- Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.
- Detailed description of the cause(s) of the SSO.
- Copies of original field crew records used to document the SSO.
- Historical maintenance records for the failure location.

City's Response to SSO:

- Chronological narrative description of all actions taken by the City to terminate the spill.
- Explanation of how the SSMP Overflow Emergency Response Plan was implemented to respond to and mitigate the SSO.
- Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

Water Quality Monitoring:

- Description of all water quality sampling activities conducted including analytical results and evaluation of the results.
- Detailed location map illustrating all water quality sampling points.

VI-8. Sewer Backup Into/Onto Private Property - Claims Policy

It is the policy of the City that a claims form shall be offered to anyone wishing to file a claim. The following procedures will be observed for all sewer overflows/backups into/onto private property:

- City Collections Crew will offer a City claim form irrespective of fault whenever it is possible that the sanitary sewer backup may have resulted from an apparent blockage in the City-owned sewer lines or whenever a City customer requests a claim form. The claim may later be rejected if subsequent investigations into the cause of the loss indicate the City was not at fault.
- It is the responsibility of the Collections Crew to gather information regarding the incident and notify the Collections Supervisor or his/her designee.
- It is the responsibility of the City Clerk or his/her designee to review all claims and to oversee the adjustment and administration of the claim to closure.

VI-9. Notification, Reporting, Monitoring and Recordkeeping Requirements

In accordance with the GWDR, the City of Millbrae maintains records for each sanitary sewer overflow. Records include:

- Documentation of response steps and/or remedial actions
- Photographic evidence to document the extent of the SSO, field crew response operations, and site conditions after field crew SSO response operations have been completed. The date, time, location, and direction of photographs taken will be documented.
- Documentation of how any estimations of the volume of discharged and/or recovered volumes were calculated including all assumptions made.

Regulator required notifications are outlined in **Table VI - 1: Regulator Required Notifications** shown below, which is formatted to enable printing on both sides of one sheet of paper for ease of distribution to agency staff.

Table VI - 1: Regulator Required Notifications

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION	• Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, the City will notify the California Office of Emergency Services (CalOES) and obtain a notification control number. • The City will report any Private Lateral Sewage Discharge meeting the definition of a Category 1 SSO to the Regional Water Quality Control Board (SFRWQCB) and the San Mateo County Health Services Division.	• **Call Cal OES at: (800) 852-7550** • Call San Mateo County Health Services Division at (650) 372-6200
REPORTING	• Category 1 SSO: The City will submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. • Category 2 SSO: The City will submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. • Category 3 SSO: The City will submit certified report within 30 calendar days of the end of month in which SSO the occurred.	Enter data into the CIWQS Online SSO Database[2] (http://ciwqs.waterboards.ca.gov/) certified by the Legally Responsible Official(s)[3]. All information required by CIWQS will be captured in the Sanitary Sewer Overflow Report.

[2] In the event that the CIWQS online SSO database is not available, the Sewer Operations Supervisor will notify SWRCB by phone and will fax or e-mail all required information to the RWQCB office at (510) 622-2460 in accordance with the time schedules identified above. In such an event, the City will submit the appropriate reports using the CIWQS online SSO database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the SSO file.
[3] The City always has at least one LRO. Any change in the LRO(s) including deactivation or a change to contact information, will be submitted to the SWRCB within 30 days of the change by calling (866) 792-4977 or emailing help@ciwqs.waterboards.ca.gov.

	• SSO Technical Report: The City will submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. • "No Spill" Certification: The City will certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred. • Collection System Questionnaire: The City will update and certify every 12 months	Certified SSO reports may be updated by amending the report or adding an attachment to the SSO report within 120 calendar days after the SSO end date. After 120 days, the State SSO Program Manager must be contacted to request to amend an SSO report along with a justification for why the additional information was not available prior to the end of the 120 days.
WATER QUALITY MONITORING	The City will conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results will be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD KEEPING	The City will maintain the following records: • SSO event records. • Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. • Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO Volume.	Self-maintained records shall be available during inspections or upon request.

For reporting purposes, if one SSO event of whatever category results in multiple appearance points from the sewer system, a single SSO report should be submitted into CIWQS that includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that caused the SSO, and descriptions of the locations of all other discharge points associated with the single SSO event.

VI-9.1. Complaint Records

The City maintains records of all complaints received whether or not they result in sanitary sewer overflows. These complaint records include:

- Date, time, and method of notification
- Date and time the complainant or informant first noticed the SSO or occurrence related to the call
- Narrative description describing the complaint
- A statement from the complainant or informant, if they know, of whether or not the potential SSO may have reached waters of the state
- Name, address, and contact telephone number of the complainant or informant reporting the potential SSO (if not reported anonymously)
- Follow-up return contact information for each complaint received (if not reported anonymously)
- Final resolution of the complaint with the original complainant
- Work service request information used to document all feasible and remedial actions taken

Records will be maintained for a minimum of five years in the CMMS on the City server.

VI-10. Post SSO Event Debriefing

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

As soon as possible after a Category 1 or Category 2 SSO event all participants, starting with the person who received the call to the last person to leave the site, will meet to review the procedures used and to discuss what worked and where improvements could be made in preventing or responding to and mitigating future SSO events. The results of the debriefing will be documented and tracked to ensure the action items are completed as scheduled.

VI-11. Failure Analysis Investigation

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

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

- Reviewing and completing the Sanitary Sewer Overflow Report (in Appendix B and Appendix C) and any other documents related to the incident
- Reviewing the incident timeline and other documentation regarding the incident
- Reviewing communications with the reporting party and witness
- Reviewing volume estimate, volume recovered estimate, volume estimation assumptions and associated drawings
- Reviewing available photographs
- Interviewing staff that responded to the spill
- Reviewing past maintenance records
- Reviewing past CCTV records,
- Conducting a CCTV inspection to determine the condition of all line segments immediately following the SSO and reviewing the video and logs,
- Reviewing any Fats, Oils, Roots and Grease (FROG) related information or results
- Post SSO debrief records
- Interviews with the public at the SSO location

The product of the failure analysis investigation will be the determination of the root cause and the identification and scheduling of the corrective actions. The Collection System Failure Analysis Form (in Appendix B and Appendix C) will be used to document the investigation.

VI-12. SSO Response Training

This section provides information on the training used to support this OERP.

VI-12.1. Initial and Annual Refresher Training

All City personnel who may have a role in responding to, reporting, and/or mitigating a sewer system overflow will receive training on the contents of the OERP. All new employees will receive training before they are placed in a position where they may have

to respond. Current employees will receive annual refresher training on the OERP and the procedures to be followed. The City will document all training.

Affected employees will receive annual training on the following topics by knowledgeable trainers:

- The City's OERP and SSMP
- Sanitary Sewer Overflow Volume Estimation Techniques
- Researching and documenting Sanitary Sewer Overflow Start Times
- Impacted Surface Waters: Response Procedures
- State Water Resources Control Board Employee Knowledge Expectations
- Employee Core Competency Evaluations on Sanitary Sewer Operations
- Water Quality Monitoring Program Sampling Plan

The City will verify that annual safety training requirements are current for each employee, and that employees are competent in the performance of all core competencies. This will be verified through electronic testing, interviews and observations. The City will address, through additional training/instruction, any identified gaps in required core competencies.

Through SWRCB Employee Knowledge Expectations training, the employee should be able to answer the following:

1. Please briefly describe your name and job title.
2. Please describe for us approximately when you started in this field and how long you have worked for your agency.
3. Please expand on your current position duties and role in responding in the field to any SSO complaints.
4. Please describe your SOPs used to respond/mitigate SSOs when they occur.
5. Describe any training your agency provides or sends you to for conducting spill volume estimates.
6. We are interested in learning more about how your historical SSO response activities have worked in the field. We understand from discussions with management earlier that you use the OERP from the SSMP. Please elaborate on how you implement and utilize the procedures in the plan.
7. Historically, before any recent changes, can you please walk us through how you would typically receive and respond to any SSO complaints in the field?
8. Can you tell us who is responsible for estimating SSO volumes discharged? If it is you, please describe how you go about estimating the SSO volume that you record on the work order/service request forms?

9. What other information do you collect or record other than what is written on the work order form?
10. Describe if and when you ever talk with people that call in SSOs (either onsite or via telephone) to further check out when the SSO might have occurred based on what they or others know? If you do this, can you tell us where this information is recorded?
11. We understand you may be instructed to take pictures of some sewer spills/backups into structures. Other than these SSOs, when else would you typically take any pictures of an SSO?
12. Please walk us through anything else you'd like to add to help us better understand how your field crews respond and mitigate SSO complaints.

VI-12.2. SSO Response Drills

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

VI-12.3. SSO Training Record Keeping

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

VI-12.4. Contractors Working On City Sewer Facilities

All construction contractors working on City sewer facilities will be required to develop a project-specific OERP, will provide project personnel with training regarding the content of the contractor's OERP and their role in the event of an SSO, and to follow that OERP in the event that they cause or observe an SSO. Emergency response procedures shall be discussed at project pre-construction meetings, regular project meetings and after any contractor involved incidents.

All service contractors will be provided, and required to observe contractor procedures. See Appendix E: Contractor Orientation.

VI-13. Authority

- Health & Safety Code Sections 5410-5416
- CA Water Code Section 13271
- Fish & Wildlife Code Sections 5650-5656
- State Water Resources Control Board Order No. 2006-0003-DWQ
- State Water Resources Control Board Order 2013-009-DWQ effective September 9, 2013

VI-14. References

- Sanitary Sewer Overflow and Backup Response Field Guide, 2013, DKF Solutions Group, LLC
- Appendix A: Regulatory Notifications Packet
- Appendix B: Sanitary Sewer Backup Packet
- Appendix C: Sanitary Sewer Overflow Packet
- Appendix D: Field Sampling Kit
- Appendix E: Contractor Orientation
- City of Millbrae Water Quality Monitoring Program Plan, July 25, 2015
- Pump Station Access and Containment Map Book

Element VII: Fats, Oils, and Grease (FOG) Control Program

SWRCB Waste Discharge Requirement:

Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan 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 removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;
f) An identification of sanitary sewer system sections subject to FOG blockages and 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 sanitary sewer system for each section identified in (f) above.

VII-1. Nature and Extent of FOG Problem

FOG has not been a major problem in the City and contributes a small percentage of the total overflows in the past. The majority of City SSOs are caused by roots and debris in the collection systems as shown in the performance results in **Figure IX - 3: Trend in Gravity Sewer, Pump Station and Force Main SSOs by Cause** on page 84.

The City requires new and existing Food Service Establishments (FSE) currently remodeling to install grease traps or interceptors in the plumbing system in accordance with the Millbrae Water Pollution Control Plant (WPCP) FOG control program procedure. The City performs regular inspections of FSE grease traps, grease interceptors, or other pre-treatment equipment before renewing Pretreatment Permits to businesses. The Consent Decree with Baykeeper required the City to enhance its public education programs with both residential and commercial customers. In addition, it requires the City to continue requiring the installation of grease interceptors and reporting on the enforcement program and all Notice of Corrections (NOCs) issued to FSEs.

Table VII - 1: Historical FOG-Related SSOs below lists the total number of FOG-related mainline SSOs in 2009 to 2017.

Table VII - 1: Historical FOG-Related SSOs

Calendar Year	Number
2017	1
2016	0
2015	0
2014	0
2013	0
2012	2
2011	0
2010	0
2009	0

VII-2. FOG Control Program & Inspections

The City's FOG Control Program is intended to work in conjunction with the City's preventive maintenance program to prevent FOG-related SSOs. It remains an essential component in meeting and maintaining its projected SSO reduction performance goals. The elements of the City's FOG Control Program include:

- Requirement for the installation of grease removal devices (GRDs);
- Permitting food service establishments (FSE);
- Requirement for proper operation and maintenance of GRDs

- Verification of grease handling and disposal practices
- FSE inspections
- Public Education and Outreach and
- Enforcement.

The WPCP Environmental Services Group is responsible for administering the City's FOG Control Program.

The legal authority to implement, monitor and enforce the elements of the FOG Program in the service area is governed in Chapter 8.20 of the Municipal Code and in the California Plumbing Code Millbrae Municipal Code, Chapter 9.25. These code sections provide the legal authority to prohibit FOG discharges to the sanitary sewer collection system.

FSEs subject to the FOG Program are required to install GRDs consistent with the recommended procedures for design, construction and installation based on the current adopted Millbrae Plumbing Code enforced by the WPCP. Plan check review for grease removal device installation is coordinated during the building permit application process.

FSEs subject to the FOG Program are required to obtain a wastewater discharge permit, which provides the legal framework to enforce the elements of the FOG Program. The discharge permit contains specific permit conditions, which require FSEs to implement FOG Best Management Practices (BMP) including:

- Proper GRD operation and maintenance
- Documentation and retention of GRD pumping/cleaning activities
- Employee training on FOG handling BMPs, proper equipment cleaning, spill response clean up and control procedures
- Prohibition on the installation and use of food waste disposal grinder
- Proper disposal of grease, oils, and meat fat
- Prohibition on the use or addition of chemical or biological agent for the maintenance of GRD

The discharge permit is also to provide information on facility specifics relating to local limits, inspection requirements and rights of entry, reporting requirements relating to spill or accidental discharges, records retention, confidential information, limit or permit transfer, perjury clause, fees, permit duration and renewal process. The City progressive enforcement actions for various field violation scenarios include verbal and written notice of correction, notices of violations, cleanup requirements, and administrative and criminal penalties. Each level of corrective action includes a schedule to achieve timely compliance. Public education and outreach remains an integral element of the FOG Program and has been enhanced under the consent decree. Outreach is provided to FSE

staff and management during routine inspection. Other materials distributed may include grease scrapers, list of grease haulers and cooking oil recyclers, and general technical information on grease removal devices. Inspectors strive to provide educational information to ensure FSE staff and management to ensure continued compliance with their discharge permit. Collection crew provides additional outreach by distributing FOG door hangers and brochure to homeowners during service calls and routine preventive maintenance activity. FOG related brochures are available on the City website.

VII-3. Response to GWDR Requirements

Requirement (a):

An implementation plan and schedule for a public education outreach program should promote proper disposal of FOG.

Response:

In order to educate the public on proper FOG disposal, in late 2010, a residential outreach program was initiated by the City. This program is ongoing, and includes the following activities:

- FOG prevention messages in local newspapers, City Newsletter, City cable channel, and the City website.
- Participation in public outreach events.
- Distribution of grease collection cans, posters, handouts, and small promotional gifts at special events.
- Regular display of educational handouts at library, City Hall, and Community Center.
- Distribution of educational handouts at information distribution events throughout the year.

The City has been active in promoting environmental awareness through newsletters, posters, television, website, and various media, and has also participated in a number of events throughout the year. In addition, the City has an ongoing commercial outreach program to educate commercial establishments on the use of BMPs and the proper maintenance of grease recovery devices to reduce FOG. This program includes the following activities:

- Continual permitting and monitoring.
- Provide regular quarterly report correspondence to members of the business community to educate business owners, managers, and staff regarding FOG BMPs.

- Provide multi-language grease trap cleaning posters to new permittees.
- Provide PowerPoint presentation for restaurants that describes BMPs for grease control.

Permitting, monitoring, and regular correspondence provided opportunities to educate business owners, managers, and staff regarding FOG BMPs. The City also participates regionally with other agencies in the development and maintenance of websites that promote environmentally friendly resources for the proper disposal of wastes and FOG.

Requirement (b):

A plan and schedule for the disposal of FOG generated within the 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.

Response:

The City has identified a list of grease haulers that operate in the local area and included it as **Table VII - 2: Fats, Oils and Grease Haulers** shown below. These haulers are listed at the CalFOG website and are available to handle the pickup and disposal of FOG generated in the Millbrae service area.

Requirement (c):

The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG.

Response:

The Titles 8 and 9 of the Millbrae Municipal Code provides the legal basis and authority for the City's FOG Control Program as stated in Element III of this SSMP.

Requirement (d):

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

Response:

The City's FOG Control Program described above, currently meets these requirements.

Requirement (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.

Response:

The City's FOG Control Program involves regular inspections and enforcement by City environmental programs staff

Requirements (f) and (g):

Requirement (f) is an identification of sewer system sections subject to FOG blockages and the establishment of a cleaning maintenance schedule for each section, and Requirement (g) is the development and implementation of source control measures, for all sources of FOG discharged to the sewer system.

Response:

The City has developed a Hot Spot Cleaning Program pursuant to the 2010 consent decree. This Program evaluates the pipe segments that are FOG problem areas, developed proper maintenance actions to assure they do not become overflows by the proper assignment of frequent maintenance activities to remedy the impacts. In addition, the program defines the means that pipes are placed on and taken off the Hot Spot maintenance list. The Program also involves the use of progressive enforcement for FOG management of FSEs that are found to not be in compliance with best management practices or do not include proper equipment to assure that FOG is not discharged to the collection system.

Table VII - 2: Fats, Oils and Grease Haulers

Grease Hauler	Contact Information
A-1 Septic Tank Service	(510) 697-8083 or (800) 730-4471
Aaron's Septic Trap Service	(408) 371-2350
Able Septic	(408) 377-9990
Ameriguard Maintenance Services	(800) 347-7876 ext 14
Bay Pumping	(831) 320 5229
Burr Plumbing & Pumping	(408) 287-2877
Contractor Potables	800) 440-0978
Evergreen Recycling, Inc.	(650) 952-5000
H K Fire Protection and Steam Cleaning	(415) 661-8338
Magnum Fire Protection	(510) 742-0775
Miller & Gibson (previously Able Septic Tank Service)	(408) 377-9990
Miller & Gibson (previously Able Septic Tank Service)	(408) 398-4990
Modesto Tallow/Florin Tallow Co.	(209) 522-7224 or (800) 564-7204
One More Time	(800) 624-5504
Pioneer Liquid Transport	(800) 804-7327
R&D Grease Trap Cleaning	(707) 632-5827
Sacramento Rendering Co.	(800) 339-6493
Salinas Tallow	(800) 621-9000
San Jose Tallow	(408) 452-8777
Trap Recyclers Inc	(408) 892-3824 or (800) 994-7867

Source: CalFOG website 3/2016

VII-4. References - None

Element VIII: System Evaluation and Capacity Assurance Plan

SWRCB Waste Discharge Requirement:

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; and
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, 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 Sewer System Management Plan (SSMP) review and update requirements as described in Section D. 14.

VIII-1. System Evaluation - Collection System Master Plan

The City, as required by the Baykeeper consent decree, completed a capacity assurance evaluation in June 2012 in the Wet Weather Alternative Analysis (Analysis) Report by West Yost Associates. The Alternatives Analysis included evaluations of the collection system pipelines and force mains, pump stations and treatment plant for current and future dry and wet weather conditions. Because the City is essential fully built out, the

evaluations were conducted to determine the impacts of infiltration and inflow on the entire City sewer related facilities. The Analysis determined that under both average and peak day dry weather conditions that there was adequate capacity in the collection system and pump stations. However, during peak wet weather conditions several portions of the collection system and the Madrone Street Pump Station and force main had insufficient capacity to convey peak wet weather flows.

The analysis included the use of the City hydraulic model to define pipelines with inadequate capacity. The model was calibrated using the results of flow monitoring in the winter of 2010/2011 by V&A Engineering and reported in the Millbrae Flow Monitoring and I&I Report, August 2011. This information, the model and field flow monitoring were used to prepare the Capacity Assurance Report (CAR) required by the consent decree Section IX, Paragraph 24. The Alternatives Analysis developed various alternatives to assure adequate capacity in the collection system pipes and the Madrone Pump Station by a combination of increasing capacity and by reducing rainfall dependent infiltration and inflow in the most economical manner. The Alternatives Analysis identified a recommended schedule from 2012 to 2014 for all of the recommended projects to alleviate the wet weather capacity issues in priority order. These capacity-related projects are included in Appendix IV-B.

VIII-2. Design Criteria

The capacity-related design criteria, including base wastewater flow and peaking factors, are included in the 2012 Capacity Assurance Report and the 2014 Wet Weather Alternatives Design Report including the use of a design storm with a return frequency of 10-years, 24-hour.

VIII-3. Capacity Enhancement Measures - Capital Improvement Program

The City annually prepares a list of capital improvement projects that includes projects to address recently identified wastewater collection system capacity issues from the above alternatives analysis. Engineering Staff prioritize and select the projects to be included on the annual list. The City's Capital Improvement Program Budget is included as **Appendix IV-B, Renewal & Replacement Program Budget in $1000s**.

VIII-4. Schedule

The current schedule for the City's capacity enhancement projects are included for the Madrone Lift Station and for main line sewer replacements and rehabilitations in **Appendix IV-B, Renewal & Replacement Program Budget in $1000s**. However, this

list will be revised, as necessary, based upon future smoke testing and condition assessments and maintenance results from the field crews

VIII-5. References

- Wet Weather Alternative Analysis Report by West Yost Associates, June 20112
- Millbrae Flow Monitoring and I&I Report, by V&A Engineering and Associates August 2011
- Capacity Assurance Report (CAR) 2012 as required by Consent Decree Section IX, Paragraph 24

.

Element IX: Monitoring, Measurement, and Program Modifications

SWRCB Waste Discharge Requirement:

The Enrollee shall:

a. Maintain relevant information that can be used to establish and prioritize appropriate Sewer System Management Plan (SSMP) activities;
b. Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
c. Assess the success of the preventive 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.

IX-1. Performance Measures

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

- Total number of SSOs;
- Number of SSOs for each cause (roots, grease debris, pipe failure, capacity, Pump station failures, and other);
- Portion of sewage recovered compared to total volume spilled: and
- Volume of spilled sewage discharged to Waters of the State.
- CCTV inspection, linear feet
- Mainline cleaning, linear feet
- Hot spot cleaning, linear feet
- QA/QC of cleaned sewer mains, percentage
- Private lateral inspections, each
- Smoke testing, linear feet

IX-2. Baseline Performance

The City has performance measures in place and it will evaluate its performance annually following the end of the fiscal year. The historical, or baseline, performance is shown separately for gravity mains/pump stations/force mains and lower laterals.

IX-2.1. Mains, Pump Stations, and Force Mains

The baseline performance and SSO trends for gravity mains, Pump stations, and force mains is shown below.

Table IX - 1: Gravity Sewer, Pump Station, and Force Main SSOs by Fiscal Year

FY	Gravity Sewer SSOs	Pump Station SSOs	Force Main SSOs
09/10	45	0	0
10/11	25	0	0
11/12	38	0	0
12/13	13	0	0
13/14	3	0	0
14/15	6	0	0
15/16	1	0	0
16/17	8	0	0

Figure IX - 1: Trend in Gravity Sewer, Pump Station, and Force Main SSOs

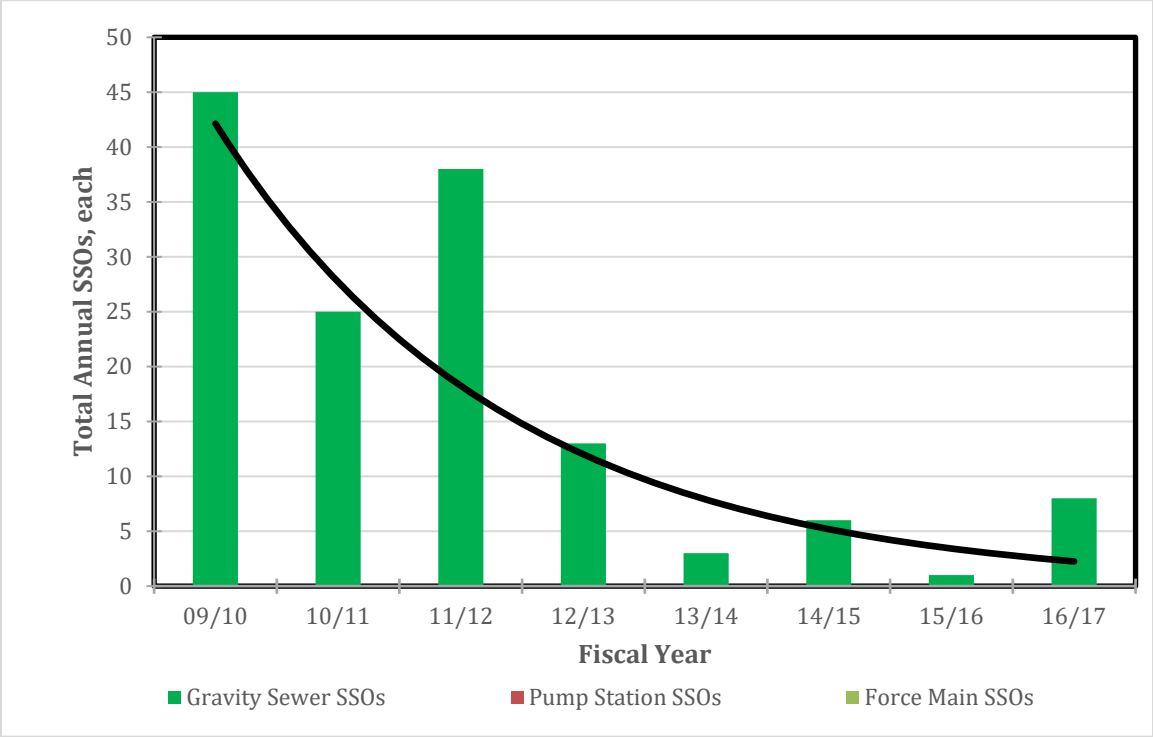


Figure IX - 2: Trend in all SSOs per Fiscal Year

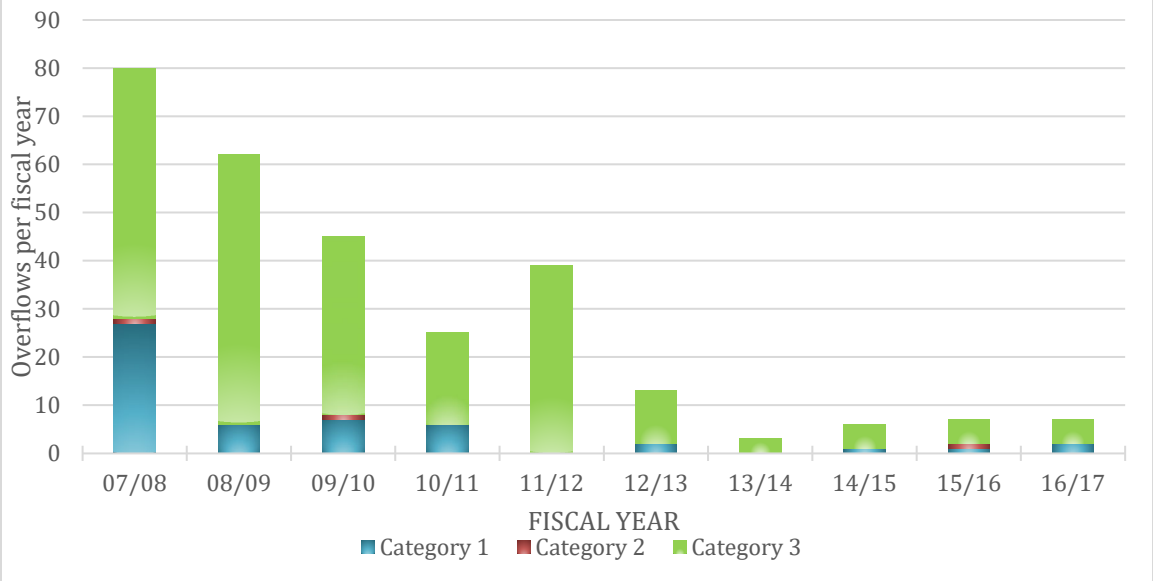


Table IX - 2: FY Totals for SSOs by Cause

FY	Roots	Debris	Grease	Capacity	Vandalism	Pipe Failure	PS Failure	Total
09/10	25	12	2	5	0	1	0	45
10/11	14	3	1	6	1	1	0	26
11/12	22	12	1	0	0	3	0	38
12/13	6	4	0	1	0	2	0	13
13/14	2	1	0	0	0	0	0	3
14/15	3	1	1	0	0	1	0	6
15/16	1	0	0	0	0	0	0	1
16/17	3	1	1	2	0	0	0	7
Totals	81	35	6	14	1	8	0	145

Figure IX - 3: Trend in Gravity Sewer, Pump Station and Force Main SSOs by Cause

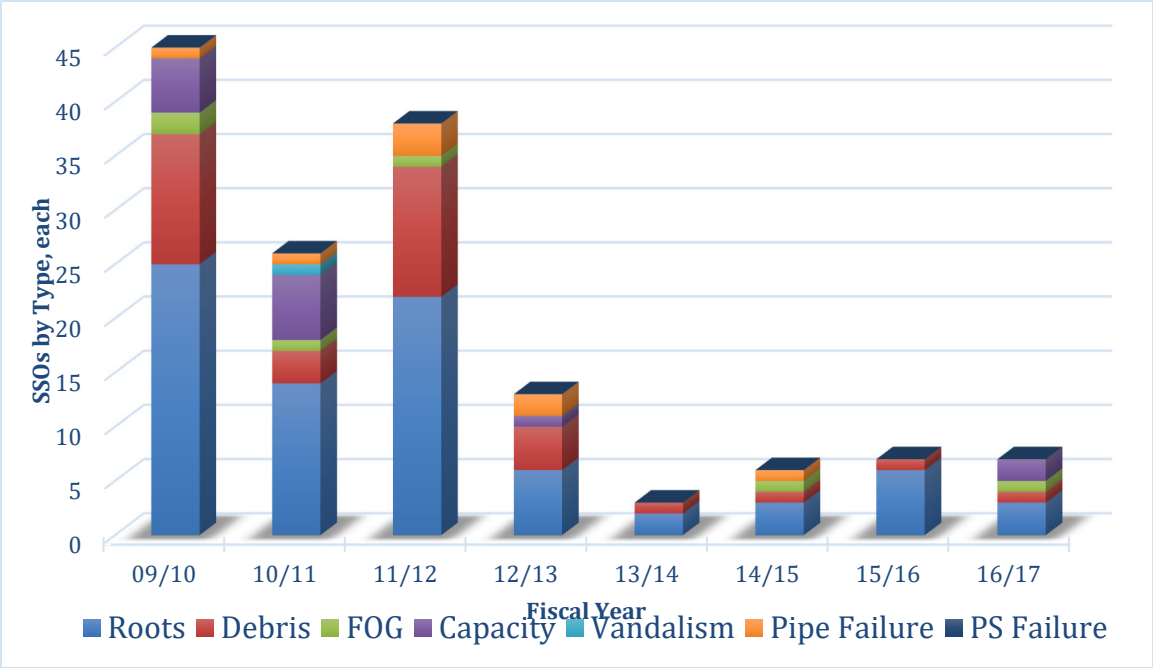
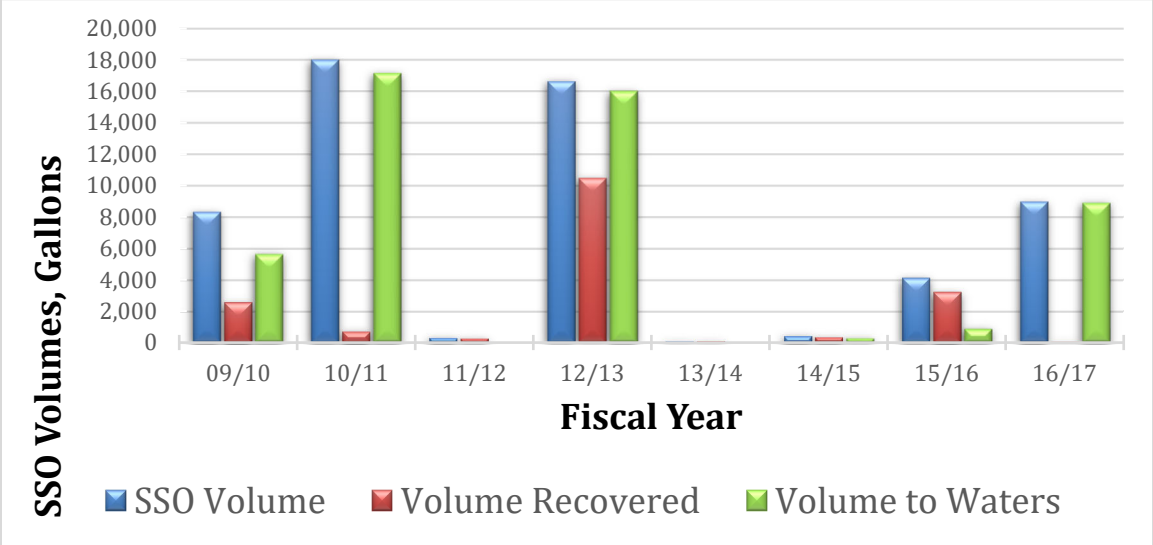


Table IX - 3: FY Totals for Sewer Mains (Volume Spilled, Portion Contained, and Volume to Surface Waters)

FY	Total Volume Spilled, gallons	Portion Contained and Returned to Sewers, %	Total Volume Entering Surface Waters, gallons
09/10	8,328	31	5,650
10/11	18,002	4	17,150
11/12	325	90	0
12/13	16,621	63	16,000
13/14	115	100	0

14/15	440	85	300
15/16	4138	3238	900
16/17	8975	75	8900

Figure IX - 4: Trend in Volume of Sewer Main Spills, Volume Reaching Surface Waters and Volume Recovered



IX-3. Performance Monitoring and Program Changes

The City will evaluate the performance of its wastewater collection system at least annually using the performance measures identified in this Element. The City will update the data and analysis at the time of the evaluation and will place the annual performance report in Appendix A.

The City may use other performance measures in its evaluation. The City will prioritize its actions and initiate changes to this SSMP, its operations and maintenance practices, and any related programs based on the results of the evaluation. This will be done as part of the annual self-audit (see Element X).

IX-4. References

The data used in this section were taken from the references:

- City records
- CIWQS SSO data as of October 26, 2015
- BayKeeper Consent Decree, November 15, 2010

Element X: SSMP Program Audits

SWRCB Waste Discharge Requirement:

As part of the Sewer System Management Plan (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.

X-1. Audits

The City will audit its implementation and compliance with the provisions of this SSMP every two years in the future as required by the WDR. The first audit will be conducted and completed no later than two years following original adoption by the City Council. Thereafter the audits will be completed every two years from the original adoption date. The audit team may include members from other areas of the City, outside agencies, or contractors. It is also recommended that at the same time the City conduct an audit of its SSO files to assure that that the files are complete, contain all required records as stated in the MRP and that the files contain no extraneous or conflicting documents that are not adequately reviewed and explanations provided.

The Sewer System Management Plan Audit Report Form (Table X-1) is used to guide the audit process and includes the GWDR requirements for each SSMP element. The results of the audit, including the identification of any deficiencies and the steps taken or planned to correct them will be included in an Audit Report. Upon completion of the audit, the City will include a copy of the report in Appendix A, Sewer System Annual Audit Reports. Modifications and changes to the SSMP will be identified and tracked in Appendix B, SSMP Change Log.

The audit can contain information about successes in implementing the most recent version of the SSMP, and identify revisions that may be needed for a more effective program. Information collected can be used in preparing the audit. Tables and figures or charts can be used to summarize information about these indicators. An explanation of the SSMP development, and accomplishments in improving the sewer system, should be included in the audit, including:

- How the sewer system agency implemented SSMP elements during the audit period;

- The effectiveness of implementing SSMP elements;
- A description of the additions and improvements made to the sanitary sewer collection system in the past reporting period; and
- A description of the additions and improvements planned for the upcoming reporting year with an estimated schedule for implementation.
- The Audit Reports described in the Element are in addition to the annual reports required by the consent decree that addresses many of the same performance criteria

X-2. SSMP Updates

The City will recertify its SSMP at least every five years from the original City Council adoption and approval date of July 14, 2009, last updated in 2016, or when substantial changes are made in the SSMP. The City will determine the need to update its SSMP more frequently based on the results of the audits and the performance of its wastewater collection system using information from Element IX, Monitoring and Measuring Program. In the event that the City decides that an update is warranted, the process to complete the update will be identified. The City will complete the update and take the revisions to the City Council within one year of identifying the need for the update.

Table X - 1: SSMP Audit Checklist

The purpose of the SSMP Audit is to evaluate the effectiveness of the City of Millbrae SSMP and to identify any needed for improvement.			
Directions: Please check YES or NO for each question. If NO is answered for any question, describe the updates/changes needed and the timeline to complete those changes.			
		YES	NO
ELEMENT I - GOALS			
A.	Are the goals stated in the SSMP still appropriate and accurate?	☐	☐
Discussion:			
ELEMENT II - ORGANIZATION			
A.	Is the List of City Staff Responsible for SSMP current?	☐	☐
B.	Is the Sanitary Sewer Overflow Responder List current?	☐	☐
C.	Is Figure II-1 of the SSMP, the City Organization Chart, current?	☐	☐
D.	Are the position descriptions an accurate portrayal of staff responsibilities?	☐	☐
E.	Is Table II-2 in the Chain of Communication for Reporting and Responding to SSOs section accurate and up-to-date?	☐	☐
Discussion:			
ELEMENT III – LEGAL AUTHORITY			
Does the SSMP contain current references to the City of Millbrae Municipal Code documenting the City's legal authority to:			
A.	Prevent illicit discharges?	☐	☐
B.	Require proper design and construction of sewers and connections	☐	☐
C.	Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City?	☐	☐
D.	Limit discharges of fats, oils and grease?	☐	☐
E.	Enforce any violation of its sewer ordinances?	☐	☐
F.	Were any changes or modifications made in the past year to City Sewer Ordinances, Regulations or standards?	☐	☐
Discussion:			

ELEMENT IV – OPERATIONS AND MAINTENANCE			
Collection System Maps			
A.	Does the SSMP reference the current process and procedures for maintaining the City's wastewater collection system maps?	☐	☐
B.	Are the City's wastewater collection system maps complete, current and sufficiently detailed?	☐	☐
C.	Are storm drainage facilities identified on the collection system maps? If not, are SSO responders able to determine locations of storm drainage inlets and pipes for possible discharge to waters of the state?	☐	☐
Prioritized Preventive Maintenance			
D.	Does the SSMP describe current preventive maintenance activities and the system for prioritizing the cleaning of sewers?	☐	☐
E.	Based upon information in the Annual SSO Report, are the City's preventive maintenance activities sufficient and effective in minimizing SSOs and blockages?	☐	☐
Scheduled Inspections and Condition Assessments			
F.	Is there an ongoing condition assessment program sufficient to develop a capital improvement plan addressing the proper management and protection of infrastructure assets? Are the current components of this program documented in the SSMP?	☐	☐
Contingency Equipment and Replacement Inventory			
G.	Does the SSMP list the major equipment currently used in the operation and maintenance of the collection system and documents the procedures of inventory management?	☐	☐
H.	Are contingency and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?	☐	☐
Training			
I.	Does the SSMP document current training expectations and programs?	☐	☐
Outreach to Plumbers and Building Contractors			
J.	Does the SSMP document current outreach efforts to plumbers and building contractors?		

Discussion:			
ELEMENT V- DESIGN AND PERFORMANCE STANDARDS			
A.	Does the SSMP reference current design and construction standards for the installation for new sanitary sewer systems, Pump stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?	☐	☐
B.	Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines?	☐	☐
Discussion:			

ELEMENT VI – OVERFLOW AND EMERGENCY RESPONSE PLAN			
A.	Does the City's Sanitary Sewer Overflow Emergency Response Plan establish procedures for the emergency response, notification, and reporting of SSOs?	☐	☐
B.	Is City staff and contractor personnel appropriately trained on the procedures of the Sanitary Sewer Overflow Emergency Response Plan?	☐	☐
C.	Considering SSO performance data, is the Sanitary Sewer Overflow Emergency Response Plan effective in handling SSOs in order to safeguard public health and the environment?	☐	☐
D.	Are all SSO and claims reporting forms current or do they require revisions or additions?	☐	☐
E.	Does all SSO event recordkeeping meet the SSS GWDR requirements? Are all SSO event files complete and certified in the CIWQS system?	☐	☐

F.	Is all information in the CIWQS system current and correct? Have periodic reviews of the data been made during the year to assure compliance with GWDR? Have all Technical Report and Water Quality Sampling requirements been confirmed and uploaded to the CIWQS data management system?	☐	☐
G.	Was required training on SSMP and OERP completed and documented? Were field exercises with field staff on SSO volume estimation conducted and documented?	☐	☐
H.	Did all public improvement plans and specifications that could impact collection system operations include requirements for OERP training or were contractor OERP programs at least as stringent as the City OERP? Were regular items included in project meeting agendas to discuss emergency response procedures and communications?	☐	☐
Discussion:			
ELEMENT VII – FATS, OILS AND GREASE (FOG) CONTROL PROGRAM			
A.	Does the FOG Control Program include efforts to educate the public on proper handling and disposal of FOG?	☐	☐
B.	Does the FOG Control Program identify sections of the collection system subject to FOG blockages, establish a cleaning schedule and address source control measures to minimize these blockages?	☐	☐
C.	Are requirements for grease removal devices, best management practices (BMP), record keeping and reporting established in the City's FOG Control Program?	☐	☐
D.	Does the City have sufficient legal authority to implement and enforce the FOG Control Program?	☐	☐
E.	Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system	☐	☐

Discussion:			
ELEMENT VIII- SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN			
A.	Does the Wet Weather Alternatives Analysis Report evaluate hydraulic deficiencies in the system, establish sufficient design criteria and recommend both short and long term capacity enhancement and improvement projects?	☐	☐
B.	Does the City's Capital Improvement Plan (CIP) establish a schedule of approximate completion dates for both short and long-term improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment?	☐	☐
Discussion:			

ELEMENT IX- MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS			
A.	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?	☐	☐
B.	Is the City able to sufficiently evaluate the effectiveness of the SSMP elements based on relevant information?	☐	☐
C.	Were the consent decree performance metrics met?	☐	☐
Discussion:			
ELEMENT X – SSMP AUDITS			
A.	Will the SSMP Audit be completed, reviewed and filed in Appendix A?	☐	☐

Discussion:			
ELEMENT XI – COMMUNICATION PROGRAM			
A.	Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and continue to address any feedback?	☐	☐
B.	Did the City Council receive and review an Annual Sewer System Report? Was the annual report uploaded to the City Sewer Section website and added to Appendix A?	☐	☐
Discussion:			
Change Log			
A.	Is the SSMP Change Log, current and up to date?	☐	☐
Discussion:			

Audit Team: _____ Date: _____

Prepared By: _____ Date: _____

Reviewed By: _____ Date: _____

X-3. References

Element XI: Communication Program

SWRCB Waste Discharge Requirement:

The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its Sewer System Management Plan (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.

XI-1. Communication during SSMP Development and Implementation

The City, at least annually, communicates with the City Council at a public meeting that allow for input from the public with regard to the implementation and results of the collection system operations.

The City has developed a private lateral maintenance webpage and City Ordinance to that Property Owners Need to know that clearly defines the property owners' responsibilities for the ownership, maintenance and replacement of the private lateral. In addition, as the main lines are televised if problems are seen in the lateral such as roots and grease, letters are sent to the property owner recommending necessary actions and potential financial assistance maybe available to assist with the problem.

Other information provided upon request to interested parties includes: a copy of completed SSMP, brochures and materials regarding collection system operations and maintenance, FOG and contact information and/or opportunities for input into the development and implementation process. The complete SSMP and all references are available at the City webpage.

The City also have brochures and information on collection system programs at various department counters in the City as well as available on the City website.

XI-2. Communicating Sanitary Sewer System Performance

The City Council annually at a regularly scheduled meeting receives collection system performance information that is included in the minutes of that public meeting. The

performance information will include the performance measures listed in Element IX: Monitoring, Measurement, and Program Modifications and will be compiled in an annual collection system performance report.

XI-3. Communication with Satellite Wastewater Collection Systems

The City has no satellite systems that discharge to the City collection system.

XI-4. References - None

Appendices

Appendix A: Sewer System Management Plan Audit Reports

The following is a list of the available Annual Reports prepared as required by the November 2010 Consent Decree and available on the City website.

- Millbrae 2011 Annual Report In Response to Consent Decree between San Francisco Baykeeper and City of Millbrae
- Millbrae 2012 Annual Report In Response to Consent Decree between San Francisco Baykeeper and City of Millbrae
- Millbrae 2013 Annual Report In Response to Consent Decree between San Francisco Baykeeper and City of Millbrae
- Millbrae 2014 Annual Report In Response to Consent Decree between San Francisco Baykeeper and City of Millbrae
- Millbrae 2015 Annual Report In Response to Consent Decree between San Francisco Baykeeper and City of Millbrae
- Millbrae 2016 Annual Report In Response to Consent Decree between San Francisco Baykeeper and City of Millbrae
- Millbrae 2017 Annual Report In Response to Consent Decree between San Francisco Baykeeper and City of Millbrae

Appendix B: Log of Sewer System Management Plan Changes

Log of SSMP Changes

Date	SSMP Element #	Description of Change/Revision Made	Person Authorizing Change
8/1/2018	Introduction	Intro Table 1 and 3 revised.	Jane Kao
8/1/2018	II	Figure II-1, Table II-1, and Table II-2 revised	Jane Kao
8/1/2018	IV	Figure IV - 1, Table IV-1, Table IV-2, Table IV-3 (and narratives), Table IV-4, IV-2.1.3 Root Foaming, IV-2.5 Training, and Appendix IV-B revised	Jane Kao
8/1/2018	VII	Table VII-1 revised	Jane Kao
8/1/2018	IX	Table IX - 1, Figure IX - 1, Figure IX - 2, Table IX - 2, Figure IX - 3, Table IX - 3, and Figure IX - 4 revised	Jane Kao
8/1/2018	X	2018 Audit Added	Jane Kao

Appendix C: Sewer System Management Plan Council Adoption Documents

RESOLUTION 21-89

CITY OF MILLBRAE, COUNTY OF SAN MATEO
STATE OF CALIFORNIA

***

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILLBRAE APPROVING THE REVISED SEWER SYSTEM MANAGEMENT PLAN

WHEREAS, on May 2, 2006, pursuant to its authority under California Water Code Section 13263, the State Water Resource Control Board (SWRCB) adopted the Statewide General Waste Discharge Requirements (WDR) to regulate sanitary sewer wastewater collection systems; and

WHEREAS, the WDR applies to all public collection system agencies in California that own or operate collection systems with more than one mile of sewer lines that convey untreated wastewater to a publicly owned treatment facility; and

WHEREAS, the WDR requires each agency to prepare, certify, adopt and implement a Sewer System Management Plan (SSMP) and review and revise the SSMP at least every five years or earlier when significant changes are made to the SSMP; and

WHEREAS, the SSMP describes the activities the City uses to manage its sanitary sewer collection system effectively and to reduce sewer overflows and sets forth a formalized asset rehabilitation, operation, and maintenance program for the City collection system; and

WHEREAS, on June 14, 2016, City Council adopted Resolution 16-16 approving the 2016 SSMP; and

WHEREAS, in 2018, staff audited the 2016 SSMP and made necessary updates; and

WHEREAS, the 2018 updated SSMP needs to be certified by the City Council.

NOW, THEREFORE BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF MILLBRAE adopts a resolution approving the 2018 Revised Sewer System Management Plan.

REGULARLY PASSED AND ADOPTED this 8th day of December, 2021.

Mayor

ATTEST:

Acting City Clerk 12-17-2021

Resolution No. 21-89

I do hereby certify that the foregoing Resolution was duly and regularly passed and adopted by the City Council of the City of Millbrae this 8th day of December 2021, by the following vote:

AYES:	COUNCILMEMBERS:	Schneider, Oliva, Papan, Fung, and Holober
NOES:	COUNCILMEMBERS:	None
ABSENT:	COUNCILMEMBERS:	None
ABSTAIN:	COUNCILMEMBERS:	None
EXCUSED:	COUNCILMEMBERS:	None

Aging CITY CLERK 12.17.2021