CITY OF MORGAN HILL

Sanitary Sewer Management Plan Revisions

February 2018

Originally Certified: July 22, 2009

Resolution No: 6266

Readopted: February 21, 2018

Resolution No: 18-015

City WDID #3SSO10332

Table of Contents

Table of Tables

Table of Figures

Introduction

Sewer System Management Plan

This Sewer System Management Plan (SSMP) has been prepared by the Utilities Division of the City of Morgan Hill with the assistance of Causey Consulting, Walnut Creek, CA. 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 2009 SSMP, in compliance with the GWDR and MRP revised requirements. In addition, the City's collection system is also named and regulated through the South County Regional Wastewater Authority (SCWRA) National Pollution Discharge Elimination System (NPDES) Permit No. CA0049664, Order Number R3-2017-0028.

The structure (section numbering and nomenclature) of this SSMP follows the above referenced GWDR Section D13. This SSMP is organized by the SWRCB outline of elements; 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 collection system that has completed and submitted the required application for coverage under the WDR (in this case, the Enrollee is the City of Morgan Hill. The City's waste discharger identification number (WDID) in the California Integrated Water Quality System (CIWQS) is 3SSO10332, The City service area crosses two separate Regional Boards – the San Francisco (SFRWQCB) and the Central Valley (CCRWQCB) and uses the single WDID for the reporting of all regulatory requirements under the WDR and the MRP in each RWQCB region. Intro Figure 1-2 delineates the reporting areas for the two RWQCBs.

Sanitary Sewer System Facilities

The City operates a sanitary sewer system that serves a population of approximately 42,068 in a 12.882 square mile service area. The sewer system serves 12,542 connections. The sewer system consists of 157.9 miles of gravity sewers (approximately

3,762 line segments), 3284 manholes, 2.92 miles of force mains, and 14 lift stations. The sewer lines range in size from four (4) inches to thirty (30) inches in diameter and the piping system includes twenty-three (23) siphons with a total length of 1.12 miles of pipelines. The property owner is fully responsible for installation, maintenance and repair of the parcel private sewer lateral(s). The current City service area ranges in elevation from 350 feet above sea level to 1200 feet above sea level in the foothills.

Intro Figure 1 contains an overview map of the City's sanitary sewer service area.

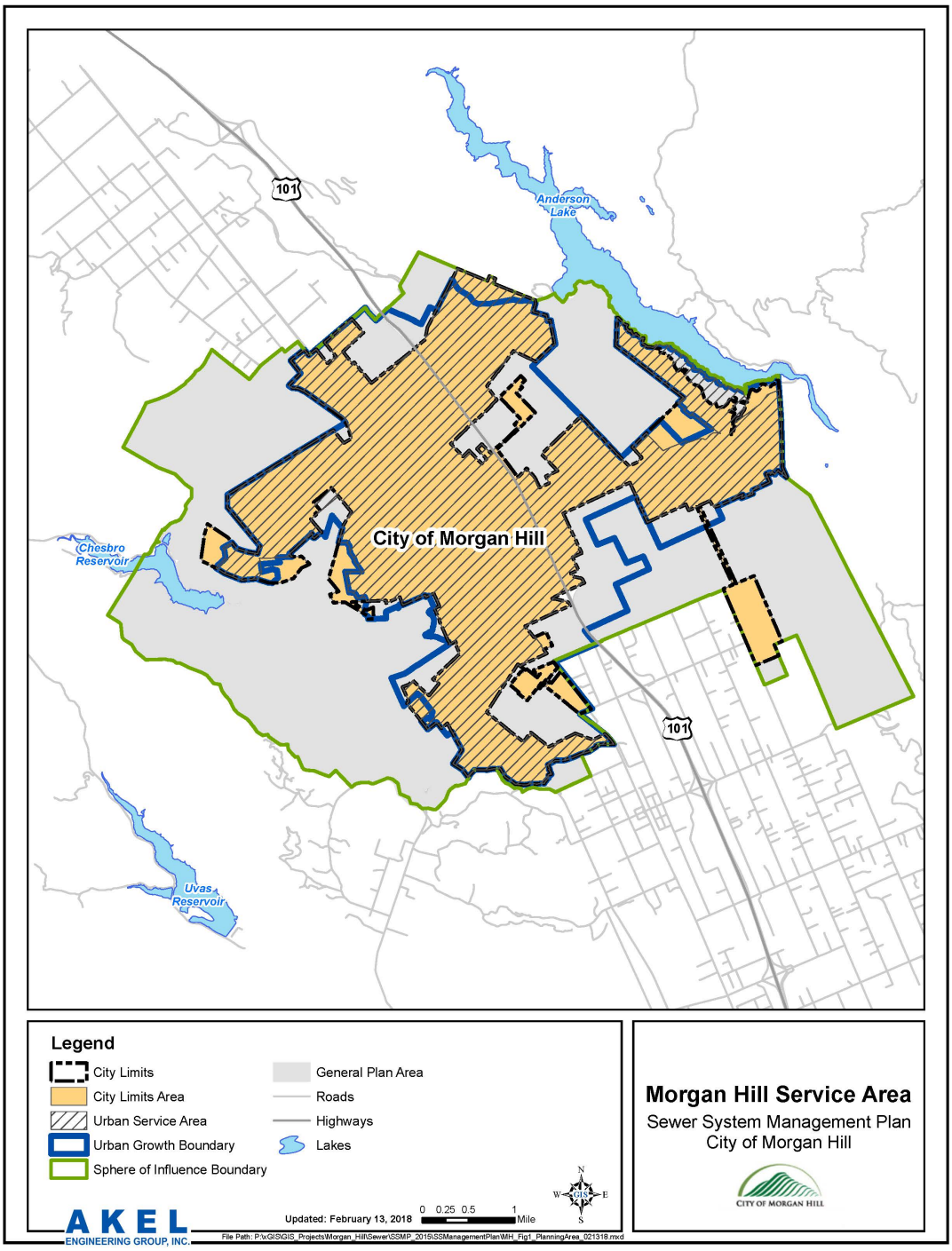
Intro Figure 2 contains an overview map of the City's Regional Board Reporting Areas.

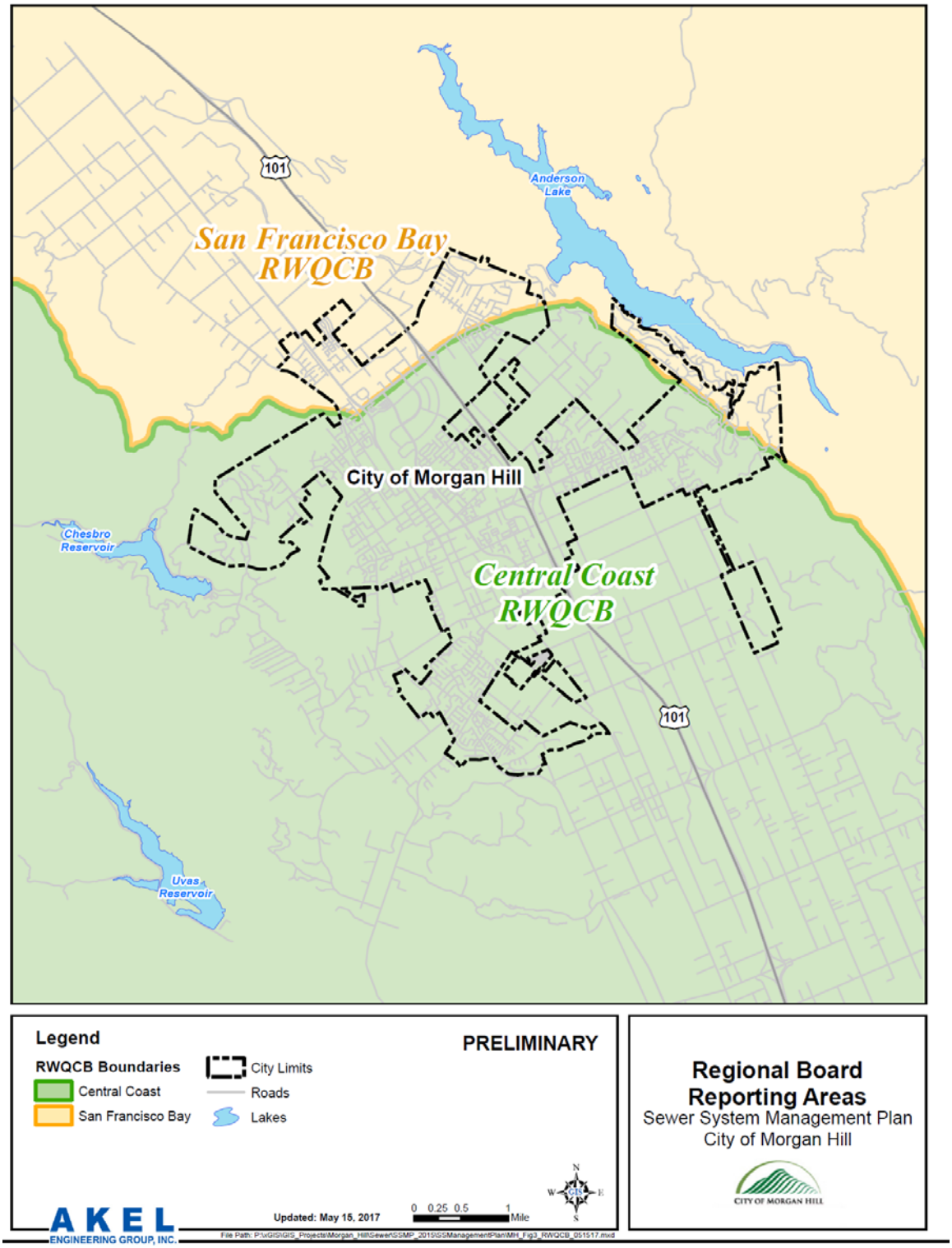
Intro Table 1 and **Intro Table 2** provide the composition of the gravity sewer piping by size and material of construction.

Intro Table 3 provides the installation age distribution of the City's collection system.

Intro Table 4 provides the system information of all siphons in the collection system.

Intro Figure 1: Morgan Hill Sewer System Map





Intro Figure 2: Morgan Hill Regional Board Reporting Areas

Intro Table 1: Gravity Sewer System Size Distribution

Diameter, inches	Number of Line Segments	Pipe Length, linear feet	Portion of Sewer System, %
4	7	1690	0.2
6	1487	295,944	35.5
8	1533	333,221	40.0
10	355	86,803	10.4
12	74	16,632	2.0
14	3	581	0.1
15	124	34,162	4.1
16	1	475	0.1
18	37	7,498	0.9
20	14	3,696	0.4
21	36	17,160	2.1
24	34	12,408	1.5
30	49	20,645	2.5
Unknown	8	2,640	0.3
Total	3762	833,554	100.0
Total, miles		157.87	

Source: GIS Shapefiles by City staff dated 1/25/17

Intro Table 2: Gravity Sewer System Materials of Construction

Material	Number of Line Segments	Pipe Length, LF	Percent of Sewer System
VCP	537	94,090	11.28
PVC	291	63,795	7.65
RPP	124	21,490	2.58
ACP	152	21,595	2.59
Unknown	2658	632,597	75.89
Total	3762	833,554	100.00
Total, miles		157.87	

Source: CCTV data and Shapefiles from staff 1/25/17

Intro Table 3: Gravity Sewer System Inventory of Sewer Lines by Pipe Age

Age in Years	Construction Period	Percent of System	Miles of Main Sewer
0-15	2000 - current	15	23.68
16 – 35	1980 – 1999	25	39.46
36 – 55	1960 – 1979	25	39.46
56 – 75	1940 – 1959	20	31.57
76 – 95	1920 – 1939	15	23.68
95 – 115	1900 – 1919	0	0
>115	Before 1900	0	0
Total, miles			157.87
Source: GIS Shapefiles by City staff dated 1/25/17			

Intro Table 4: Gravity Sewer System Inventory of Siphons in System

Siphon Title/Name	Location	Length Linear Feet	Length Total Linear Feet	Size Inches	Material	Date of Construction
2nd – 3rd Invert	75 2nd st.	57'	57	6"	Clay	NA
2nd – Del Monte	17415DelMonte	148'	148	6"	NA	NA
50 West Edmundson at Creek	Same	149'	149	15"	NA	NA
Barrett at Butterfield	16160 Barrett	162'	162	18"	PVC	NA
Barrett at Creek by Hill Road	16220 Barrett	141'	141	8"	Clay	NA
Barrett at Freeway	965 Barrett	449'	449	18"	NA	NA
Cochrane across 101 freeway (Target)	900 Lightpost	538' X 2	1076	10" / 14"	PVC	NA
East Dunne at Freeway	Same	788'	788	10"	NA	NA
Edes Court at Creek	Same	83'	83	12"	NA	NA
Fountain Oaks – Hill Road	Same	91'	91	6"	NA	NA
Gallant Fox – Easy Street	Flygt Sewer Station Pump	331'	331	10"	Clay	NA
Hillwood - Hale	18004 Hillwood	209'	209	8"	NA	NA
Little Llagas Creek – Monterey San Martin Bridge (east side)	Same	283' x 3	849	14"/12"/14"	NA	NA
Little Llagas Creek – Monterey San Martin Bridge (west side)	Same	186' x2	372	10" / 16"	Clay X 2	NA
Main – Hale	Same	66'	66	15"	NA	NA
Monterey – 4th NB/SB	17205Monterey	58'	58	6"	Clay	NA
NE Side Cochrane at Freeway	1031 Cochrane	145'	145	10"	PVC	NA
O Lift Station	14565 Middle	110'	110	6"	Clay	NA
San Pedro-Butterfield	340 San Pedro	294"	294	10"	NA	NA
W Lift Station	15505Watsonille	178'	178	12"	NA	NA
Warren Avenue at Creek	115 Warren		0	6"	Clay	NA
Watsonville at Monterey	Same	64'	64	10"	NA	NA
West Dunne – Monterey	35 W Dunne	38'	38	8"	Clay	NA

Definitions, Acronyms, and Abbreviations

Asbestos Cement Pipe (ACP)

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

Calendar Year (CY)

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

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

Cast Iron Pipe (CIP)

Central Coast Regional Water Quality Control Board (CCRWQCB) – see RWQCB below

City
Refers to the City of Morgan Hill.

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. SEDARU is the propriety software the City uses for work flow management.

Division of Water Quality (DWQ)
Refers to the State of California Division of Water Quality of the State Water Resources Control Board.

Fats, Oils, and Grease (FOG)
Refers to fats, oils, and grease typically associated with food preparation and cooking activities that can cause blockages in the sanitary sewer system.

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

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.

General Waste Discharge Requirements (GWDR)
Refers to the State Water Resources Control Board Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated 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.

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.

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

Joint Powers Agreement (JPA)

Lateral – See Private Sewer Lateral

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

Lift Station (LS)
A facility that transmits and lifts sewage into the City gravity sanitary sewer collection system.

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 publicly owned wastewater collection system piping that is not a private lateral connection to a user.

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

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

Morgan Hill Municipal Code (MHMC)

National Association of Sewer Service Companies (NASSCO)

National Pollution Discharge Elimination System Permit (NPDES)

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 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)

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)

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)
The sewer pipeline from the plumbing of a building to a collection line, including portions that extend across public rights-of-way and the saddle, wye or other physical connection to the collection line. Private sewer laterals are privately owned and maintained.

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

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

Public Works (PW)

Regional Water Quality Control Board (CCRWQCB or SFRWQCB)
Refers to the Central Coast Regional Water Quality Control Board or the San Francisco Regional Water Quality Control Board as regards to reporting in CIWQS.

Reinforced Concrete Pipe (RCP)

Reinforced Plastic Pipe (RPP)

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.

San Francisco Regional Water Quality Control Board (SFRWQCB)

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 private sewer lateral 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 Morgan Hill.

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 sanitary sewer system

Sewer System Management Plan (SSMP)

Sewer Zone

South County Regional Wastewater Authority (SCRWA)
Refers to the joint powers agreement between the Cities of Morgan Hill and Gilroy for the construction, operation, maintenance and renewal of wastewater treatment facilities for all wastewater collection from the Morgan Hill and Gilroy collection systems.

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 the City of Morgan Hill Design Standards and Standard Details for Construction.

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 Central Coast or the San Francisco Regional Water Quality Control Board(s), although the 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 lift stations and to notify the operating staff when there is an alarm condition that requires attention.

System Evaluation and Capacity Assurance Plan (SECAP) SSMP Element VIII

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

Vitrified Clay Pipe (VCP)

Waste Discharge Identification Number (WDID)
A unique Morgan Hill identification number for the certification and reporting of collection system related actions and overflows in the CIWQS System. The Morgan Hill WDID is 3SSO10332

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 Quality Monitoring 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 of California Water Resources Control Board Order No. WQ-2008-0002-EXEC, Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems dated February 20, 2008
- 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.
- South County Regional Wastewater Authority (SCWRA) National Pollution Discharge Elimination System (NPDES) Permit No. CA0049664, Order Number R3-2017-0028

Element I: Goals

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

I-1. SSMP Goals

The goals of the City of Morgan Hills SSMP are:

1. To minimize and mitigate the adverse impacts of SSOs that may occur despite best efforts.
2. To minimize the frequency of SSOs.
3. To meet all applicable regulatory notification and reporting requirements.
4. To provide adequate capacity to convey both peak wastewater and dry wastewater flows.
5. To measure progress through performance measures so the plan can be adjusted as needed.
6. To protect public health and safety, and the environment.
7. To perform all operation and maintenance activities in a safe manner.
8. To document and define procedures to address SSO prevention and response.
9. To understand the condition of and maintain infrastructure to maximize the life of the collection system.
10. To Implement regular, proactive maintenance of the system to remove roots, debris, and fats, oils and grease (FOG) in areas prone to blockages that may cause sewer backups or SSOs.
11. Construct new and/or rehabilitated public and private sewers to City Engineering standards and specifications.

Element II: Organization

Organization: The SSMP must identify:

(a) The name of the responsible or authorized representative as described in Section J of this Order.

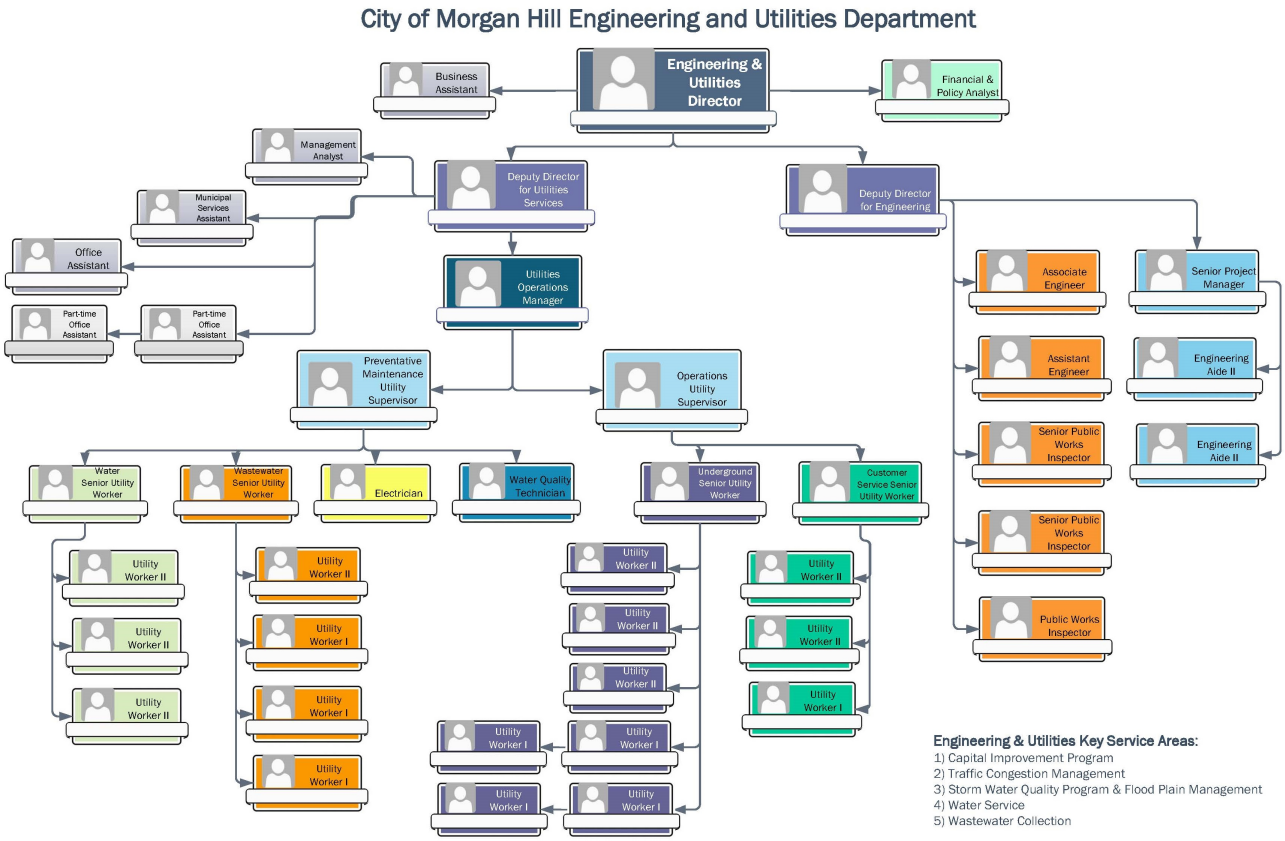
(b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and

(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 sanitary sewer collection system is operated and maintained by the Utilities Division of the Engineering and Utilities Department with the direct assistance of the Engineering Division for long range planning and capital program management. In addition, is also supported by City Risk Management, Building Division and Environmental Services Division. Finally, the SCRWA provides the City with the FOG control program for food services establishments. The organization chart for the management, operation, and maintenance of the City's wastewater collection system is shown on the next page.

Figure II - 1: Morgan Hill Engineering and Utilities Department Organization Chart



II-2. Authorized Representatives

The City's *Legally Responsible Official(s)* (LRO) for wastewater collection system matters are identified below along with their roles and responsibilities for the collection system operations. They are the City's legally responsible officials who are authorized to certify electronic spill reports and other required submittals to the SWRCB, the Office of Emergency Services (OES) and/or the CIWQS System

Engineering and Utilities Director – Legally Responsible Official (LRO)
Administers all phases of a comprehensive public works and engineering program through subordinate management and supervisory personnel; provides expert professional assistance to City management staff in areas of responsibility; performs related work as required. Reports to the City Manager.

Deputy Director of Utility Services - The Deputy Director of Utility Services is a mid--management position is responsible for overseeing the functions for water and wastewater utilities. The position provides leadership and management over the water and wastewater functions of utilities including long-range planning, system reliability,

regulatory compliance, capital program development, and operations and maintenance. The Deputy Director develops, monitors, and analyzes financial and quality indicators, oversees utility operations. This requires detailed understanding of the municipal water and wastewater engineering, operations, management to deliver utility services. Reports to the Engineering and Utilities Director.

Senior Project Manager – Responsible for engineering, directing and performing complex or difficult civil engineering work. Trains sub professionals and less experienced engineering staff. Reports to the Deputy Director of Engineering.

Management Analyst – Performs professional administrative and research work of a technical nature in support of the Utilities Division and on other work as assigned. Reports to the Deputy Director of Utilities.

Municipal Services Assistant – Under general supervision provides varied and responsible advanced office and technical support to the Utilities Division. Reports to the Deputy Director of Utilities.

Office Assistant I/II – Under supervision performs a variety of routine to difficult clerical support to the Utilities Division which may include receptionist duties, typing, word processing, record keeping and filing. Reports to the Deputy Director of Utilities.

Associate Engineer – Performs a variety of professional civil engineering work related to the wastewater systems. Reports to the Deputy Director of Engineering.

Assistant Engineer – Performs a variety of professional civil engineering work related to the wastewater systems. Reports to the Deputy Director of Engineering.

Engineering Aide II – Performs paraprofessional engineering tasks related to technical support duties for the Utilities Division including collection system mapping. Reports to the Senior Project Manager.

Financial and Policy Analyst – Responsible for financial tracking, monitoring and reporting on the Utilities Division operations; also responsible for the financial structuring, monitoring and reporting on the Capital Improvements Program (CIP) document. Reports to the Engineering and Utilities Director.

Utilities Operations Manager – Manages the City's wastewater utility operations providing management over the operations of the utility including regulatory compliance, supervising operations and maintenance, emergency planning and response, recommending capital improvements and utility asset management to ensure reliable sustainable wastewater systems. Provides a central customer service role for both internal and external operations and maintenance activities. Reports to the Deputy Director of Utility Services.

Wastewater Senior Utility Worker – Provides lead direction to crews in the collection system maintenance operations; performs advanced skilled wastewater collection system maintenance work including training and lead direction for lateral service connections and minor repairs to the collection system piping. Reports to the Program Maintenance Utilities Supervisor.

Program Maintenance Utility Supervisor – Data Submitter (DS) - Responsible for supervising; scheduling and coordinating the collection systems operations and personnel assigned in the repair and maintenance of wastewater facilities, performs related administrative tasks in the operation of assigned work units. Reports to the Operations Manager.

Utility Worker I –Performs a variety of semi-skilled work in the maintenance of the wastewater collection system facilities and appurtenances. Assists when responding to collection system emergencies and customer complaints. Reports to the Wastewater Senior Utility Supervisor.

Utility Worker II – Performs a variety of skilled work in the maintenance of the wastewater collection system facilities and appurtenances. Responds to collection system emergencies and customer complaints. Reports to Wastewater Senior Utility Supervisor.

Electrician – Responsible for the maintenance, troubleshooting, repairs, inspections, testing and installing all types of electrical systems including pumps and building electrical systems at the journey level. Maintains technical knowledge of the functions and the operations of the City SCADA systems for the sewer systems. Reports to the Program Maintenance Utility Supervisor.

Water Quality Technician – Responsible for assisting and advising on the development and implementation and maintenance of wastewater system quality control standards and monitoring. Prepares technical reports as directed. Reports to the Utility Systems Manager.

GIS/Land Use Data Administrator – Responsible for coordinating with and supporting the Utilities Department in implementation of all aspects of the City's geographic information system (GIS) related projects. Maintains and updates collection system mapping. Reports to the Assistant City Manager for Administrative Services.

Building Official – Manages the activities of the Building Division including code enforcement and building inspection programs including service laterals and grease related requirements. Reports to the Community Development Director.

Building Inspector II – Performs skilled inspections of residential, commercial and industrial structures, interprets and enforces applicable codes and regulations in the collection system. Reports to the Building Official.

Code Enforcement Officer – Responsible for compliance with sections of the municipal code, ordinances and resolutions in areas such as community nuisance, property maintenance and related areas. Reports to the Building Official.

Pretreatment Program Manager SCRWA – Responsible through the authority in the Joint Powers Agreement with the City of Gilroy for the education, operations, management and enforcement of the City fats, oils and grease (FOG) programs to protect the collection system from the discharge of FOG that could result in sanitary sewer overflows (SSO) and will help reduce operations and maintenance costs. Reports to City of Gilroy Administrator/SCRWA General Manager.

Deputy Director for Engineering - The Deputy Director for Engineering is a mid-management position is responsible for overseeing the engineering functions for water and wastewater utilities. The position provides leadership and management over the engineering functions of utilities including long-range planning, system reliability, capital program accountability, and construction inspection. The Deputy Director develops, monitors, and analyzes financial and quality indicators, oversees engineering operations. This requires an operational understanding of the municipal water and wastewater industry to develop and execute complex engineering projects and construction. Reports to the Engineering and Utilities Director.

Water/Wastewater Operations Utility Supervisor - Under direction of the Utility Systems Manager, supervises, schedules, and coordinates the utility operations and personnel assigned in the repair and maintenance of water and wastewater facilities; performs related administrative tasks in the operation of assigned work unit; performs other related work as required. Reports to the Operations Manager.

Senior Public Works Inspector - Under general supervision of the Public Works Inspector Supervisor, makes field inspections on a variety of public and private construction projects to ensure conformance with approved plans, specifications and departmental regulations; performs land surveys using current methods; and performs minor drafting work and other office and field work related to engineering. Reports to the Deputy Director for Engineering

Public Works Inspector - Under the direct supervision of the Senior Public Works Inspector , makes field inspections on a variety of public and private construction projects to ensure conformance with approved plans, specifications and departmental regulations; performs land surveys using current methods; and performs minor drafting

work and other office and field work related to engineering. Reports to the Senior Public Works Supervisor.

Business Assistant - Under general supervision of the Engineering & Utilities Director provides technical and support services applying policies, procedures or ordinances as they relate to departmental permit and project processes and functions; perform related work as required.

II-3. Responsibility for SSMP Implementation and Maintenance

The Deputy Director for Utility Services 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** on the next page.

Table II - 1: Responsible Officials in Utilities Chain of Communication

Element	Element Name	Responsible City Official	Phone	Email
	Introduction	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
1	Goals	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
2	Organization	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
3	Legal Authority	Interim Engineering and Utilities Director	408-782-9154	chris.ghione@morganhill.ca.gov
4	O & M Program; Appendices IV-1 to IV-5	Utilities Operations Manager	408-310-4184	Clint.bynum@morganhill.ca.gov
5	Design and Performance	Deputy Director of Engineering/City Engineer	408-310-4640	scott.creer@morganhill.ca.gov
6	OERP	Operations Manager	408-310-4184	Clint.bynum@morganhill.ca.gov
7	Fats, Oils and Grease (FOG) Control	SCRWA Pretreatment	408-848-0480	Saeid.vaziry@ci.gilroy.ca.us
8	System Evaluation and Capacity Assurance	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
9	Monitoring, Measurement and Program	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
10	Program Audits	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
11	Communications Program	Communications and Engagement	408-310-4706	maureen.tobin@morganhill.ca.gov
App A	SSMP Council Adoption Documents	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
App B	SSMP Audit Reports	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
App C	SSMP Audit Checklist	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
App D	SSMP Change Log	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
App E	Overflow Emergency Response Plan	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
App F	Water Quality Monitoring Plan	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov
App G	Listing of SSMP Activities & Deadlines	Deputy Director for Utility Services	408-310-4166	Dan.repp@morganhill.ca.gov

II-4. SSO Reporting Chain of Communication

The SSO Reporting Chain of Communications follows the Organization Chart shown above in **Figure II - 1: Morgan Hill Utilities Department Organization Chart**. The SSO Reporting process and responsibilities are described in summary in the Overflow Emergency Response Plan in Element VI and in the full OERP in Appendix E.

Element III: Legal Authority

Legal Authority: 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:

(a) Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc.);

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

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

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

(e) Enforce any violation of its sewer ordinances.

III-1. Municipal Code

The Morgan Hill Municipal Code (MHMC) describes the City's current legal authority required for compliance with the GWDR. That authority is specifically contained within Title 13.20 of the Municipal Code and minimally in other Municipal Code Titles that are summarized in **Table III - 1** below. In addition, all FOG related authorities are included in the SCRWA Pretreatment and Sewer Use Ordinance #93-1.

Table III - 1: Summary of Legal Authorities

Requirement	Legal Authority Reference
Prevent illicit discharges into the wastewater collection system	MHMC 13.20.025 MHMC 13.20.090 SCRWA Sec 1
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	MHMC 13.20.050,.060, .330 MHMC 15.20 SCRWA Sec 2
Require that sewers and connections be properly designed and constructed	MHMC 13.16.010 MHMC 13.20.355

Requirement	Legal Authority Reference
Require proper installation, testing, and inspection of new and rehabilitated sewers	MHMC 13.16.010 MHMC 13.20.355 City Design and Construction Standards
Clearly define City responsibility and policies	MHMC 13.20.070
Control infiltration and inflow (I/I) from private service laterals	MHMC 13.20.070
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	MHMC 13.20.340; 360 MHMC 15.20.020
Authority to inspect grease producing facilities	SCRWA Sec 2 SCRWA Sec 4
Enforce any violation of its sewer ordinances	MHMC 13.20.025 SCRWA Sec 1 and 3

III-2. Agreements with Satellite Agencies

The City entered into a Joint Powers Agreement (JPA) with the City of Gilroy in 1979 that formed the South County Regional Wastewater Authority (SCRWA) for the purposes of transport and treatment of sewage from the Morgan Hill and the Gilroy service areas. The treatment plant is operated by the City of Gilroy that provides both pretreatment and FOG program services to the City of Morgan Hill pursuant to the SCRWA NPDES Permit CA0049664 Section C6b. The JPA includes the construction, operation and maintenance of a seven (7) mile joint trunk sewer system that transports sewer from both Cities to the treatment facility. The City shares the operations and maintenance responsibilities for the trunk sewer according to assigned capacity ratio which is defined in the JPA and summarized in **Table III-2** on the next page. The City of Morgan Hill has 100% responsibility for the maintenance of the initial 2020 feet of the trunk sewer.

Table III-2: City of Morgan Hill and City of Gilroy Sewer Trunk Operations and Maintenance Responsibilities

Reach	Capacity Total, mgd	Morgan Hill		Gilroy	
		Capacity	O&M Responsibility, Percentage	Capacity	O&M Responsibility, Percentage
R 1-2	4	4	100	0	0
R 2-3	5.5	4	73	1.5	27
R 3-4	5.5	4	73	1.5	27
R 4-5	5.7	4	70	1.7	30
R 5-6	6.6	4	61	2.6	39
R 6-7	8.7	4	46	4.7	54
R 7-8	7.0	4	57	3.0	43
R 8-9	8.5	4	47	4.5	53
R 9-10	10.3	4	39	6.3	61
R 10-11	11.5	4	35	7.5	65
R 11-12	10.8	3.1	29	7.7	71
R 12-13	2.74	1.37	50	1.37	50

Element IV: Operations and Maintenance Program

Operation and Maintenance Program. The 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 Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;

(c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long- term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;

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

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

IV 1. Collection System Mapping

The City has a Geographic Information System (GIS) that includes the information for its wastewater collection system assets including all gravity lines and manholes, lift stations, pressure pipe, siphons and other appurtenances. The GIS maps include basic asset

information of size, material, age and flow direction; specific asset identification numbers for each asset and operational elevations and GPS coordinates. The City has in the past, maintained an EXCEL database of all sewer system assets that is being migrated to a new SEDARU work flow management system. The current GIS mapping system includes the majority of the storm water pipe systems.

An Engineering Technician on an as needed basis maintains the current sewer maps. These maps are available to the field crews during the course of their work on tablet computers that are in the field vehicles. The information in the tablets are entered during the field operations and then updated to a central database at the end of each shift. The base sewer system maps are in need of further repair and conformation which will be completed as part of the migration to the new asset management and work order system SEDARU for both the sanitary sewer and the storm systems.

IV 2. Preventive Operation and 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;
- Periodic inspection and preventive maintenance for the lift stations and force mains;
- Rehabilitation and replacement of sewers that are in poor condition; and
- Proper training for City employees and contractors to assure proper operations and maintenance of the collection system facilities.

The City's Engineering and Utilities Divisions of the Engineering and Utilities Department identified below in **Figure IV-1 Organization Chart** are responsible for the normal maintenance and operations of the sanitary sewer collection system and the proper planning and capital improvement programming of these systems.

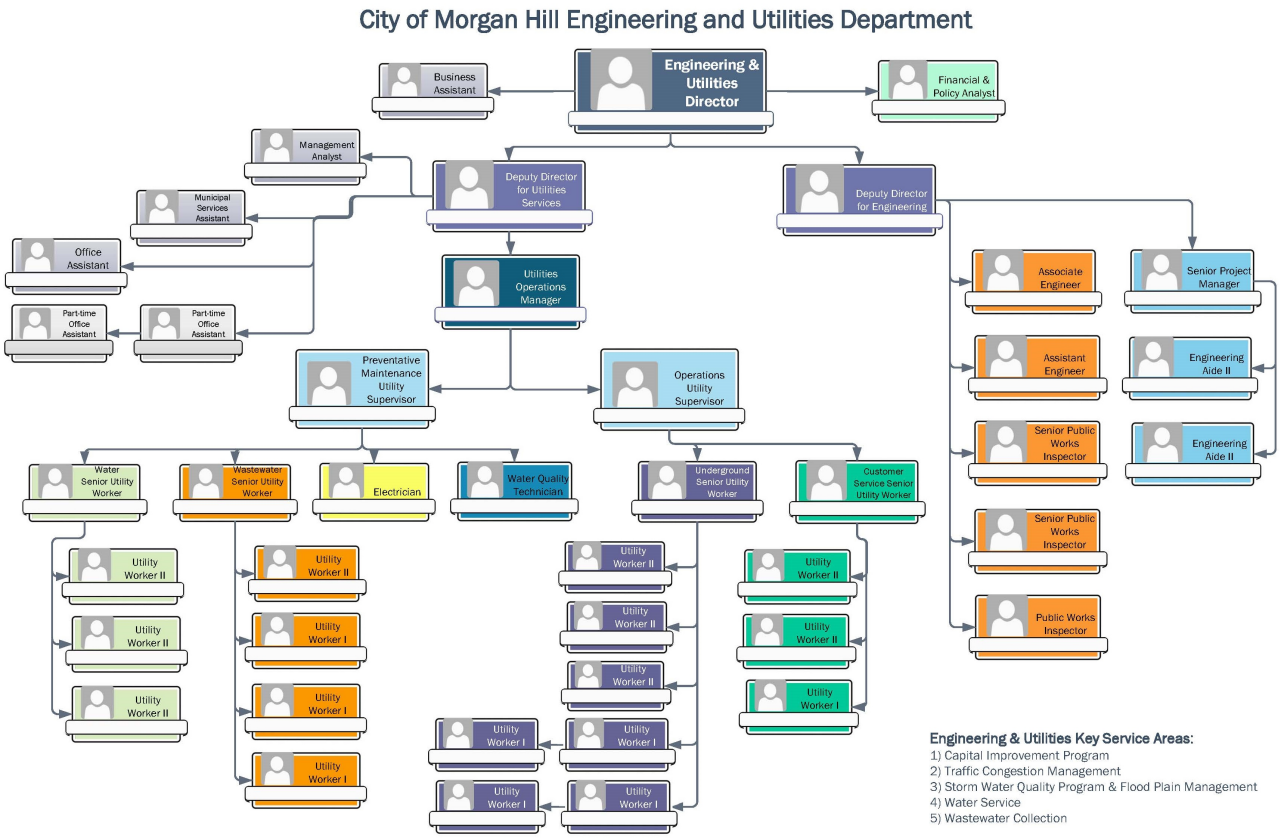


Figure IV-1 Morgan Hill Engineering and Utilities Department Organization Chart

IV–2.1. Gravity Sewer Maintenance

The City proactively flushes its entire Sanitary Sewer System at least every two and a quarter (2.25) to three (3) years, and it preventively cleans sewers with a history of problems weekly, monthly, quarterly, biannually and annually to minimize operational problems from these impacted lines. The City has developed several Policy Memorandums (SOPs) related to the collection system operations and a full list of those procedures is provided in Appendix IV-2. The City has also contracted for the preparation of City specific Standard Operating Procedures for all operations, equipment and facilities. It is anticipated that these SOPs will be in place and City staff trained in the current fiscal.

The City has broken the collection service area into separate sub-basins for zone flushing and ease of recordkeeping. These zones are labeled from A to H and the line cleaning crews move through these zones over the three (3) year cleaning frequency cycle. The City has developed a comprehensive spreadsheet schedule of regular line cleaning. It anticipates cleaning approximately 364,000 linear feet (68.87 miles) of the system in 2016/17.

Cleaning crews operate two (2) flushing units to accomplish cleaning of lines. The historical line cleaning results are shown in **Table IV - 1: Historical Regular Line Cleaning Results** on the following page. Large diameter pipes 16 inch in diameter or greater are cleaned using service contractors rather than City staff. City collection system staff maintains not only the sewer system but also many other public works infrastructure assets in the City Public Works operations.

Table IV - 1: Historical Regular Line Cleaning Results

Fiscal Year	Line Cleaning Results, linear feet	Line Cleaning Results, miles	Percent of System
2016/17 Planned	363,622	68.87	44.4%
2015/16	445,843	84.44	49
2014/15	587,687	111.3	66
2013/14	372,834	70.6	41.7
2012/13	649,943	123.10	n/a

The line cleaning crew evaluates cleaning results based upon the Standard Sewer Cleaning Results derived from the City's **Standard Measured of Observed Results** shown in **Figure IV-2** on the following page. Staff places line segments on the higher frequency schedules based upon past cleaning results, history of SSO events, history of cleaning results, video inspections and professional judgment. The current high frequency maintenance schedule estimates the needs for more frequent cleaning of 10.35 miles of full sewer system during 2016/17 totaling 228,988 linear feet or 43.4 miles of total high frequency line maintenance. Summary statistics for the high frequency lines are shown in **Table IV-2: High Frequency Lines** on the following page**.**

The City staff will be working to develop standard procedures for the addition and removal of lines from the high frequency program in the next two years. This will assure proper cleaning efficiencies and will assist with a better understanding of the requirements for high frequency maintenance activities and may lead to repair or pipe rehabilitations or more aggressive discharger enforcement from the dischargers of fats, oils and grease.

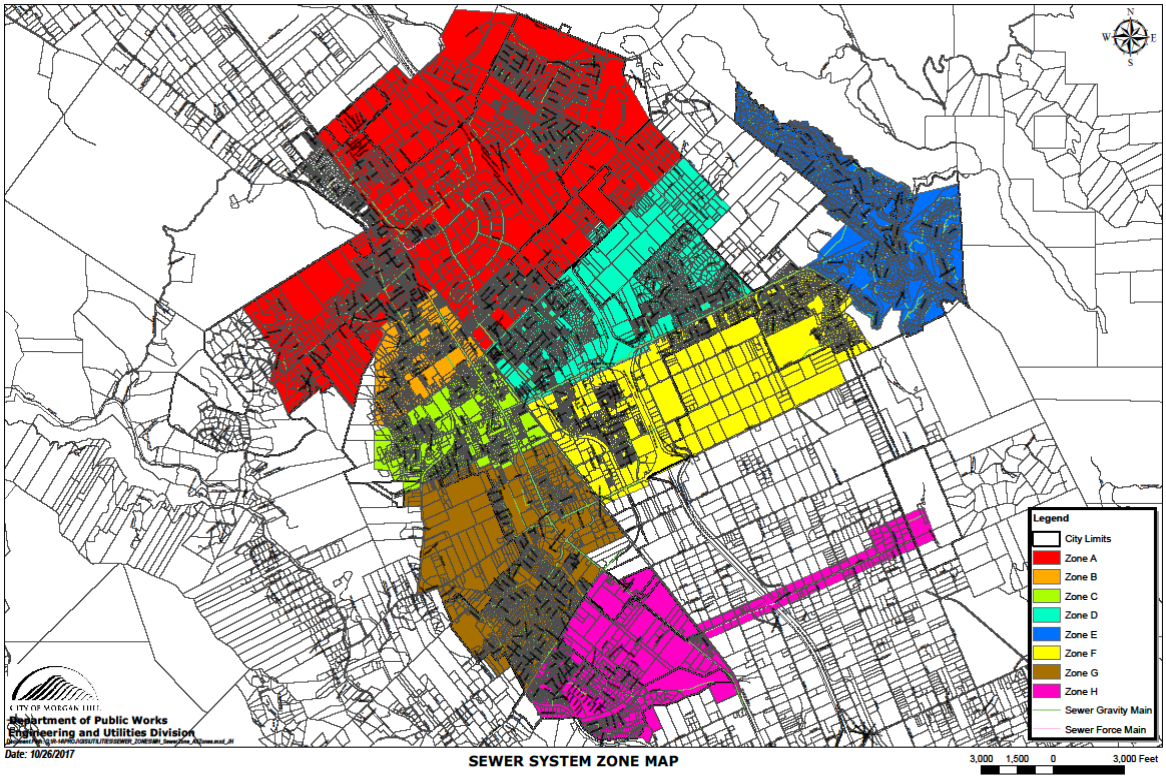
	Clear	Light	Moderate	Heavy
Debris	Code: **CL** • No observable debris	Code: **DL** • Minor amount of debris • 15 minutes or less to clean • 1 pass	Code: **DM** • Less than 5 gallons of debris per line segment • 15-30 minutes to clean • 2-3 passes	Code: **DH** • More than 5 gallons of debris per line segment • More than 30 minutes to clean • More than 4 passes • Operator concern for future stoppage
Grease	Code: **CL** • No observable grease	Code: **GL** • Minor amounts of grease • 15 minutes or less to clean • 1 pass	Code: **GM** • Small "chunks" • No "logs" • 15-30 minutes to clean • 2-3 passes	Code: **GH** • Big "chunks" or "logs" • More than 30 minutes to clean • More than 4 passes • Operator concern for future stoppage
Roots	Code: **CL** • No observable roots	Code: **RL** • Minor amounts of roots • 15 minutes or less to clean • 1 pass	Code: **RM** • Thin stringy roots • No "clumps" • 15-30 minutes to clean • 2-3 passes	Code: **RH** • Thick roots • Large "clumps" • More than 30 minutes to clean • More than 4 passes • Operator concern for future stoppage
Other: Pipe wall fragments Soil/dirt/ rock	Code: **CL** • No observable materials	Code: **OL** • Specify material (if possible) • Minor amounts of material	Code: **OM** • Specify material • Less than 5 gallons of material per line segment	Code: **OH** • Specify material • More than 5 gallons of material per line segment • Operator concern for future stoppage
This table was adapted from *Best Practices Manual: Hydroflush Cleaning of Small Diameter Sewers*, California Collection System Collaborative Benchmarking Group, February 2001.				

Figure IV-2: Standard Measures of Observed Results

Table IV - 2: High Frequency Lines

Frequency	Linear Feet	Annual Cleaning, Linear Feet
Weekly	1015	52,780
Monthly	11,143	133,716
Quarterly	5,280	23,208
Semi Annual	7,415	14,830
Annual	4,454	4,454
Total, Linear Feet:	54,650	228,988
Total, Miles	10.35	43.37

Figure IV - 3: Sewer Zone Cleaning Map



IV 2.1.1. Joint Trunk Sewer Maintenance

The City shares the operations and maintenance responsibilities of the joint truck sewer with Gilroy to the SCRWA Treatment Plat according to the assigned capacity ratios defined in the JPA and stated earlier in **Table III-2**. The Morgan Hill portion of the trunk is operated and maintained per City Policy Memo O13. The City is currently designing and will be constructing a parallel sewer trunk main that will be designed and operational in the next three years. This expansion is required to accommodate growth in the Morgan Hill service area.

IV-2.1.2 Pipe Condition Assessment

While the City does not now have a comprehensive program for the condition assessment of the entire system, the City will be starting in 2018 will begin a full condition assessment of all pipes and manholes. The assessments will follow the NASSCO standard rating systems for pipes and manholes. The City will complete the full assessment by January 1, 2021. Following the full condition assessment, the City will complete a condition assessment of all pipes and manholes at least every ten (10) years.

The historical calendar year results of the City CCTV efforts are shown below:

Table IV - 3: Historical Results of Closed Circuit Television

Calendar Year	CCTV Performance linear feet	Percent of the System
2016	Equipment stolen	0.0
2015	Equipment stolen	0.0
2014	42,115	5.1
2013	70,341	8.4
2012	24,865	3.0
2011	24,865	3.0
2010	25,313	3.1
2009	32,258	3.9
Total	219,757	26.4
Average	36,626	4.4

The wastewater collection system staff maintains a list of known structural deficiencies determined from CCTV. This list is maintained in priority order from the field observations or repairs are made depending upon the nature of the deficiency. The City of Morgan Hill has 100% responsibility for the maintenance and repair of the initial 2020 feet of the trunk sewer.

IV-2.1.3. Condition Assessment-Manhole Inspection Program

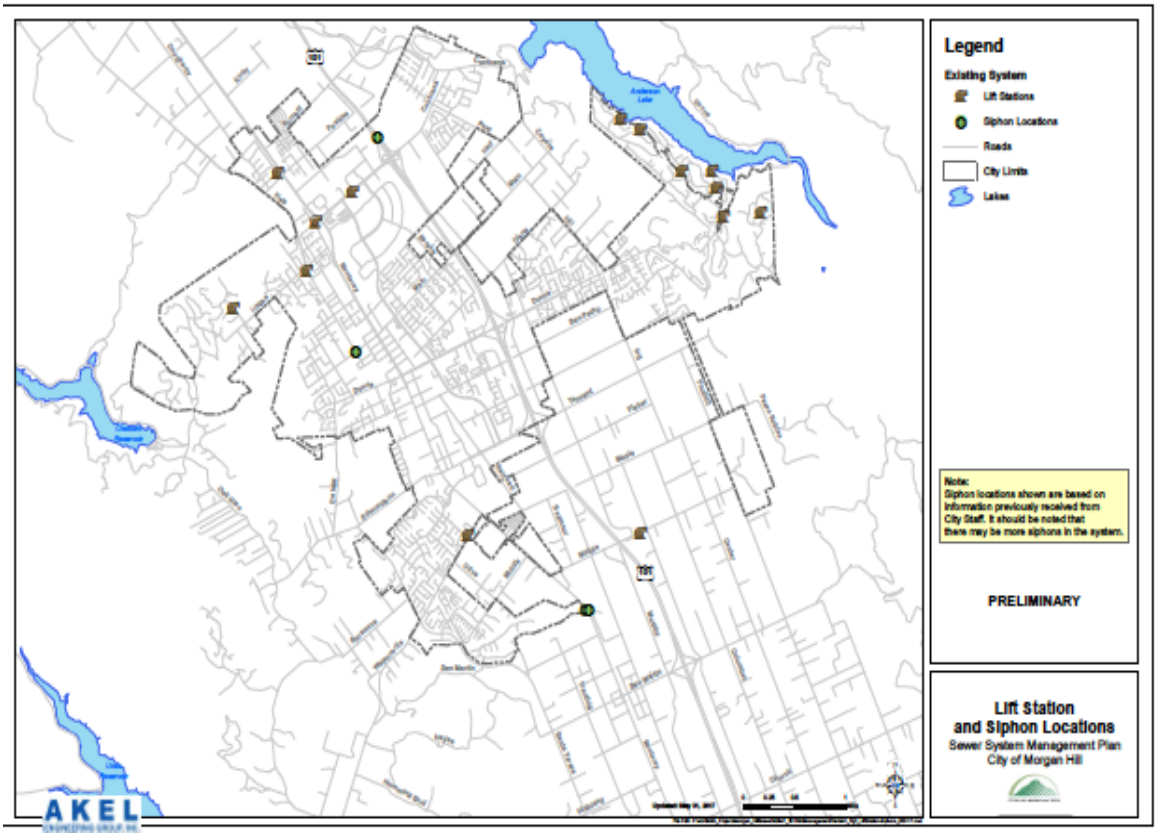
The City will be defining and implementing a formal manhole inspection program based upon the NASSCO manhole rating system as part of the regular cleaning operations. All problem conditions noticed during cleaning are reported and appropriate repairs contracted to service contractors. The City is in the process of implementing the SEDARU asset management system, which is intended to serve as the collection system

work management system for managing and planning operation and maintenance activities in the future. This is a high priority for the City and will be fully implemented by the time of the next SSMP audit.

IV-2.2. Lift Stations

The City operates and maintains 14 lift stations, as listed identified in **Figure IV - 4: Lift Station and Siphon Location Map**. The City conducts regular maintenance and operational inspections of its lift stations. Each lift station is checked twice a week and the engine generators are check weekly. Monthly each of the engine generators are exercised for 30 minutes and the wet wells are washed down and cleaned. The lift station wet wells are pressure washed quarterly. Records of all maintenance activities are maintained in logbooks at each station and in the new SEDARU System. The wet wells are vacuumed annually, and the mechanical and electrical equipment is inspected at each station. The City conducts comprehensive lift station condition assessments of all lift stations every 3 to 5 years utilizing the checklist in **Appendix IV-1 Lift Station Condition Assessment Checklist**.

Figure IV - 4: Lift Station and Siphon Location Map



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

The Utilities Department has developed emergency response contingency plans for each of the 14 stations along with the current revisions of the SSMP. These plans include important response information to protect the environment and the public from SSOs at any of the lift stations. These contingency plans are placed in each lift station and available at the Maintenance Center.

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 environmental areas. All emergency response employees will be trained and required to understand these important contingency plans. All training on these plans will be completed within one year of the adoption of the SSMP.

IV-2.3. Force Mains

The City maintains fourteen (14) separate force mains one from each lift station. Each of the 14 lift stations discharge to force mains that are identified and described in the **Table IV - 3: Lift Station Locations and Descriptions,** below. The City will be updating and completing the materials column for each of the force mains in the City asset management system prior to the next revision of the SSMP.

Table IV - 4: Force Main Locations and Descriptions shown below lists the force main asset information. Many of the force mains were installed at the time of the original construction of the associated lift station. Force main alignments will be inspected on an annual basis along with the Lift Station Inspection and documented on the Checklist. Discharge locations will be surveyed for possible damage and corrosion from the release of hydrogen sulfide when the force mains discharge to the gravity collection system.

Table IV - 4: Lift Station Locations and Descriptions

Pump Station Name	Location	Construct Date	No. Pumps	Pump GPM	Pump Manufacturer	Pump HP	Standby Generation-KW
A Lift Station	17670 RACOON CT.	1995	2	329	Flygt	23	Portable
B Lift Station	17558 HOLIDAY DR.	2003	2	203	Flygt	15	40
C Lift Station	3272 QUAIL LN.	1996	2	387	Flygt	23	80
D Lift Station	17110-B SHADY LANE DR.	1998	2	116	Flygt	23	Portable
F Lift Station	17109 HOLIDAY DR.	1995	2	130	Flygt	23	Portable
G Lift Station	18615 MONTEREY RD.	2005	2	287	Flygt	10	40
H Lift Station	320 LLAGAS RD.	1995	2	120	Flygt	5	Portable
I Lift Station	19160 SAFFRON DR.	2002	2	150	Flygt	7.5	30
J Lift Station	16035 JACKSON OAKS DR.	1992	2	175	Flygt	10	Portable
K Lift Station	3300 E. DUNNE AVE.	1968	2	120	Flygt	5	Portable
M Lift Station	1162 LLAGAS RD.	2013	2	89	Flygt	5	Portable
O Lift Station	952 E. MIDDLE AVE.	2014-Panel only	2	144	Flygt	10	Portable
P Lift Station	350 COCHRANE RD.	2009	2	511	Flygt	5	Portable
W Lift Station	15505 WATSONVILLE RD.	1993	2	170	Flygt	5	Portable

Table IV - 5: Force Main Locations and Descriptions

Name of Lift Station Associated with Force Main		Force Main Asset Information		
	Year of Construction	Length (linear feet)	Size (inches)	Material Type*
A Lift Station	1995	1602'	4"	TBD
B Lift Station	2003	1650'	6"	TBD
C Lift Station	1996	544'	6"	TBD
D Lift Station	1998	896'	4"	TBD
F Lift Station	1995	2018'	4"	TBD
G Lift Station	2005	1790'	6"	TBD
H Lift Station	2015	40'	6"	TBD
I Lift Station	2002	1,350	6"	TBD
J Lift Station	1992	286'	4"	TBD
K Lift Station	1968	1315'	4"	TBD
M Lift Station	2013	936'	6"	TBD
O Lift Station	N/A	4086'	6"	TBD
P Lift Station	2009	27'	4"	TBD
W Lift Station	1993	70'	6"	TBD
Total, Linear Feet		16,610		
Total, Miles		3.15		

* City to determine material in future work task for this plan.

IV-2.4. Collection System Siphons

As described in the SSMP Introduction**,** the City also operates twenty-three (23) siphons throughout the collection system. The City is in the process of developing a program to address the condition and maintenance of the siphons now in the collection system. That program will include an evaluation of cleaning and condition assessment methods available in the industry, including methods for cast iron and reinforced concrete siphons longer than the limit of the cleaning equipment, i.e., approximately 750 linear feet. This program will be defined and in place prior to the next SSMP audit in 2019.

IV-2.5. Root Foaming

The City has in the past utilized chemical root control to address root control issues. However, this type of maintenance has not proven to be cost effective and has been discontinued. Consequently, areas with root control issues are aggressively maintained using root cutters and by CCTV.

IV-2.6. Private Sewer Laterals

The City has no responsibility for the installation, maintenance, operation, repair or replacement of private sewer laterals (PSL) connected to the City mains. The City may voluntarily report private sewer lateral SSOs (PLSD) as they become aware of the overflows.

IV-2.7. Rehabilitation and Replacement Program

The City's Capital Improvement Plan for the next five (5) years was developed from the CCTV inspection program that evaluated the condition of gravity sewers, and that includes PACP condition assessment of each line segment. The information gathered during the condition assessment is used to select gravity sewers for repair/rehabilitation/replacement. The City has just completed a new Sewer System Master Plan that includes a list of all known and capacity identified improvements to collection system lines, pump stations and force mains. The City has incorporated all necessary new improvements into the capital improvement program for the next several years as well as developing the associated additional funding requirements for these necessary improvements.

The projects currently identified are included in the City's Capital Improvement Program listed in Appendix IV-3. 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-2.8. 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 northern California area. The City highly recommends 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 (2) years in order to renew their certificates. The City provides financial incentives to its employees to become certified.

The City will conduct department training sessions for its collection system employees on both the SSMP and OERP including the City WQMP 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 who might be required to enter confined spaces anywhere in the City. All confined space activities and training procedures are included in Policy Memorandum #O27 as listed in Appendix IV-2. This Memorandum also covers contractor confined space requirements.

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.

IV-2.9. Equipment and Replacement Parts

The list of the major equipment that the City uses in the operation and maintenance of its sewer system is included in **Appendix IV-4: Major Sewer System Equipment Inventory**.

The City has developed a Critical Replacement Parts List. It has also developed a list of Replacement Parts Inventory that is included in **Appendix IV-5: Critical Sewer System Replacement Parts Inventory**. The City keeps replacement pumps on the shelf for all the lift stations at the City Maintenance Yard.

IV-2.10. Outreach to Sewer Service Contractors Working for Us

The City requires all service contractors to be aware of emergency response requirements for sanitary sewer overflows and provides necessary reporting information for all sewer related problems and emergency response requirements.

IV-3. References

- City of Morgan Hill Sewer System Master Plan, August 2017, AKEL Engineering Group, Inc.

Element V: Design and Performance Provisions

Design and Performance Provisions:

(a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and

(b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

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

The City's Wastewater Collection System Design Criteria are administered by the Engineering Division of the Engineering and Utilities Department. The Design Standards and Standard Details for Construction are included in Section 3, Sanitary Sewer Design Standards. In addition, Section 3 of the Standard Details provides construction details for collection system infrastructure.

V-1.1. New Pipe and Appurtenances

The City has established standards for both new construction and renewal and replacement work associated with the collection system infrastructure. These standards include design standards for pipes, manholes, laterals, materials and placement of pipes and manholes into the City system. These standards are supported by the sewer section of the standards details. These standards are regularly reviewed and modified as new and innovative construction techniques and materials are approved for use in the City. The last major revisions to the standards and details provides all the details required on improvement plans submitted for approval by the City Engineering and Utilities Department.

Requests for modification or relief from the City standards can only be considered and ultimately approved by the Director of Engineering and Utility Services.

V-1.2. Lift Station

The City requires that all new or rehabilitated lift stations be designed by a registered engineer and approved by the Director of Engineering and Utilities Department before construction and acceptance by the City Council for maintenance.

V-1.3. Private Sewer Systems and Private Laterals

All private sewer systems and private sewer laterals are required to be designed, installed, inspected and accepted per the City Building Division and Section 3.8 of the Design Standards and Standard Details S-I and S-2.

V-2. Inspection and Testing Criteria

The City's Wastewater Collection System Inspection and Testing Criteria for pipelines are defined in Section S-I and S-II of the Standard Details. All testing must be approved by the City prior to consideration for acceptance for operation and maintenance by the City Council.

V-2.1. New and Rehabilitated Lift stations

Construction standards and acceptance provisions for new and rehabilitated lift stations are established through the design process and are part of the approval of the plans and specifications for the new or rehabilitated lift station. The City will evaluate the need for City specific lift station standards and details to be added to current City standards no later than the 2019 SSMP audit.

V-2. References

- City of Morgan Hill Design Standards & Standard Details for Construction

Element VI: Overflow Emergency Response Plan

Overflow Emergency Response Plan - 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 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.

Sanitary Sewer Overflow Emergency Response Plan

VI-1. Purpose

The purpose of the City of Morgan Hill Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for City personnel to follow in responding to, cleaning up, and reporting and record keeping of 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.

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 regarding sewer spills as set forth by the San Francisco Regional Water Quality Control Board (SFRWQCB), the Central Coast Regional Water Quality Control Board (CCRWQCB), and 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 debrief and failure analysis of certain SSOs.

VI-4. Full Overflow Emergency Response Plan

The full copy of the City of Morgan Hill Overflow Emergency Response Plan effective February 2018 can be found in Appendix D along with copies of all instructions and forms in response packets referred to below. All SSO sampling and testing shall be conducted per the City specific Water Quality Monitoring Plan (WQMP) attached in Appendix F.

VI-5. 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-6. References

- Morgan Hill Municipal Code Chapter 13.20 – Sewers and Industrial Waste
- Sanitary Sewer Overflow and Backup Response Field Guide, 2014, DKF Solutions Group, LLC
- Appendix A: Regulatory Notifications Packet
- Appendix B: Sanitary Sewer Overflow/Backup Response Packet
- Appendix C: Contractor Orientation
- Appendix D: Field Sampling Kit
- Appendix E: Sewer Service Request Form
- City of Morgan Hill Water Quality Monitoring Program, December 2017

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

FOG Control Program: 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

The development of a FOG control program is a two-step process. The first step was to determine the nature and extent of the FOG problems within the City's collection system.

The second step was to select the elements of a FOG Control Program that would address the identified problems and problem areas. The City of Morgan Hill has evaluated its collection system and determined that a FOG Control Program is needed. The City must comply with the SCRWA Pretreatment and Sewer Use Ordinance #93-1 Section 2.13. SCRWA has prepared, implemented and enforced a FOG Control Program to reduce the amount of these substances discharged to the sanitary sewer since 1993. Operations and maintenance staff have noted the tendency for grease buildup in specific sewer lines in the downtown area where restaurants are located. Once a specific line is identified, the information is provided to SCRWA for investigation and/or enforcement. The City's primary FOG control contribution consists of regular and high frequency cleaning and maintenance as discussed in Element IV.

SCRWA and the City have identified and permitted 126 food service establishments (FSEs) in the City of Morgan Hill. The City and SCRWA have proactively worked to reduce the impacts of FOG on the collection system.

Table VII - 1: Historical FOG-Related SSOs below lists the total number of FOG-related mainline SSOs by fiscal year.

Fiscal Year	Number
10/11	2
11/12	3
12/13	3
13/14	4
14/15	0
15/16	0
16/17	1
Total	13

Table VII - 1: Historical FOG-Related SSOs

VII-2. Response to GWDR Requirements

Requirement (a):

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

Response:

The City relies on the SCRWA to provide public information and outreach for the FOG Control Program. The City enhances the effort by providing bill stuffers regarding FOG and FOG controls.

Requirement (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.

Response:

The SCRWA has developed a list of businesses able to accept or haul FOG that is available from the Utilities Division

Requirement (c):

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

Response:

The Morgan Hill Municipal Code provides the legal basis and authority (see Element 3) for the City's FOG Control Program. In addition, the SCRWA in Section 2.13 of the Sewer Use Ordinance.

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:

SCRWA Ordinance #93-1, Section 2.13 addresses requirements for grease removal devices. In addition, the City has adopted the 2016 California Plumbing Code which also provides authority for grease removal devices.

Requirement (e):

Authority to inspect grease producing facilities, enforcement authorities, and determination of whether the collection system Morgan Hill has sufficient staff to inspect and enforce the FOG ordinance.

Response:

The inspection and enforcement for FOG related problems are included in Section 5, Enforcement of the SCRWA Sewer Use Ordinance.

Requirement (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 identified and maintains many collection system lines on a high frequency line maintenance list. These lines have experienced grease accumulation in the past and are cleaned on varying frequencies based upon severity. The single largest area for high frequency maintenance is the downtown area with the highest concentration of restaurants. The high frequency program currently lists approximately 10.25 miles of collection system lines (6.5% of the collection system) that are cleaned on one of the following frequencies as stated in **Table IV-2 High Frequency Lines**:

- Weekly
- Monthly
- Quarterly
- Semi Annually
- Annually

Cleaning frequencies depend on the history of stoppages or overflows on a line or from results of regular cleaning results and CCTV following blockages or overflows. The City will establish a process and procedure for the additional, and removal of lines from the high frequency list no later than the next SSMP Audit.

Element VIII: System Evaluation and Capacity Assurance Plan

System Evaluation and Capacity Assurance Plan: 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 SSMP review and update requirements as described in Section D. 14.

VIII-1. System Evaluation - Collection System Master Plan

The City has completed Sewer System Master Plans (Plan) in January 2002 and the fall of 2018. The most recent Plan includes a program for capacity enhancements through the planning horizon year of 2022. The objectives of the Plan update are:

- Confirm sewer system design and planning criteria;
- Evaluate the capacity of the then existing sewer collection system;
- Summarize deficiencies and propose necessary improvements to enhance reliability;
- Recommend improvements for future growth; and
- Prepare capital improvement program through 2022.

The updated Sewer System Master Plan was prepared by AKEL Engineering Group, Inc. The Plan is intended to serve as a tool for planning and phasing the construction of future sewer system infrastructure for the projected build out of the City of Morgan Hill.[2] The New Plan modeled 32.6 miles of the City collection system and 11.1 miles of the joint trunk sewer shared by Morgan Hill and Gilroy. The 2017 Plan documents the following:

- Existing collection system facilities, acceptable hydraulic performance criteria, and projected wastewater flows consistent with the Urban Planning Area.
- Development and calibration of the City's GIS-based hydraulic sewer model.
- Capacity evaluation of the existing sewer system with improvements to mitigate existing deficiencies and to accommodate future growth.
- Capital improvement program (CIP) with an opinion of probable construction costs and suggestions for cost allocations to meet AB 1600. Morgan Hill-Gilroy Joint Trunk Analysis/Evaluation.[3]

The Plan substantially updated both the capacity needs of the collection system assets and the renewal and replacement of existing facilities. In addition, it projects updates to all sewer system planning documents every five years. The goal is to have the Plan and SSMP on the same update schedule since one informs the other. The next Plan and SSMP update is expected to be in 2022. The updated Sewer System Master Plan is incorporated into this SSMP by reference.

VIII-2. Design Criteria

The capacity-related design criteria, including base wastewater flow and peaking factors, included a hypothetical five (5) year, 24-hour design storm across the service area resulting in an increase in system I/I. Dry weather flows were estimated by applying land use coefficients against the general plan areas and then adding the results of the design flow defined here. These criteria resulted in an anticipated wet weather maximum day and peak hour flows from the City system in 2020 of 6.6 MGD and 20.0 MGD

[2] Sewer System Master Plan, August 2017, AKEL Engineering Group, Page ES-1
[3] Sewer System Master Plan, August 2017, AKEL Engineering Group, Transmittal Letter dated August 16, 2017

respectively. Flows measured at the SCRWA in 2016 were 3.7 MGD and 7.3 MGD. Dry weather maximum day and peak hour flows at the treatment plant for the same period were 2.8 MGD and 5.4 MGD respectively.

In addition, the Plan developed and adopted design criteria for gravity sewer lines and pump stations in the City.

VIII-3. Capacity Enhancement Measures - Capital Improvement Program

The City prepares an annual five-year list of capital improvement projects that includes projects to address wastewater collection system capacity issues. Engineering Staff prioritize and select the projects to be included on the annual list. All capacity related projects identified in the Plan are contained in Five-year Renewal and Replacement Budget 2017/2018 to 201/2022 in Appendix IV-3.

The City's Capital Improvement Program Budget is included as **Appendix IV-3**.

VIII-4. Schedule

The current schedule for the City's capacity enhancement projects does not include any capacity related improvement projects in **Appendix IV-3**. However, this list will be revised, as necessary, based upon future condition assessments and maintenance results.

VIII-5. References

- City of Morgan Hill Sewer System Master Plan, Administrative Draft, August 2017, AKEL Engineering Group, Inc.
- City of Morgan Hill Sanitary Sewer Flow Monitoring and Inflow/Infiltration Study, Villalobos & Associates, May 2014
- City of Morgan Hill Sewer System Master Plan, January 2002, Carollo Engineers, Inc.
- Wet Weather Flow Monitoring and Analysis Final Report, V&A Consulting Engineers, Inc. May 2001

Element IX: Monitoring, Measurement, and Program Modifications

Monitoring, Measurement, and Program Modifications: The Enrollee shall:

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

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

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

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

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

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, lift station failures, and other);
- Portion of sewage recovered compared to total volume spilled; and
- Volume of spilled sewage discharged to Waters of the State.

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/lift stations/force mains and lower laterals.

IX-3. Mains, Lift Stations, and Force Mains

The baseline performance and SSO trends for gravity mains, lift stations, and force mains is shown on the following page by fiscal year.

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

FY	Gravity Sewer SSOs	Lift station SSOs	Force Main SSOs
2011	3	0	0
2012	5	0	0
2013	8	0	0
2014	10	0	0
2015	9	1	0
2016	6	0	0
2017	14	1	0
Total	59	2	0

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

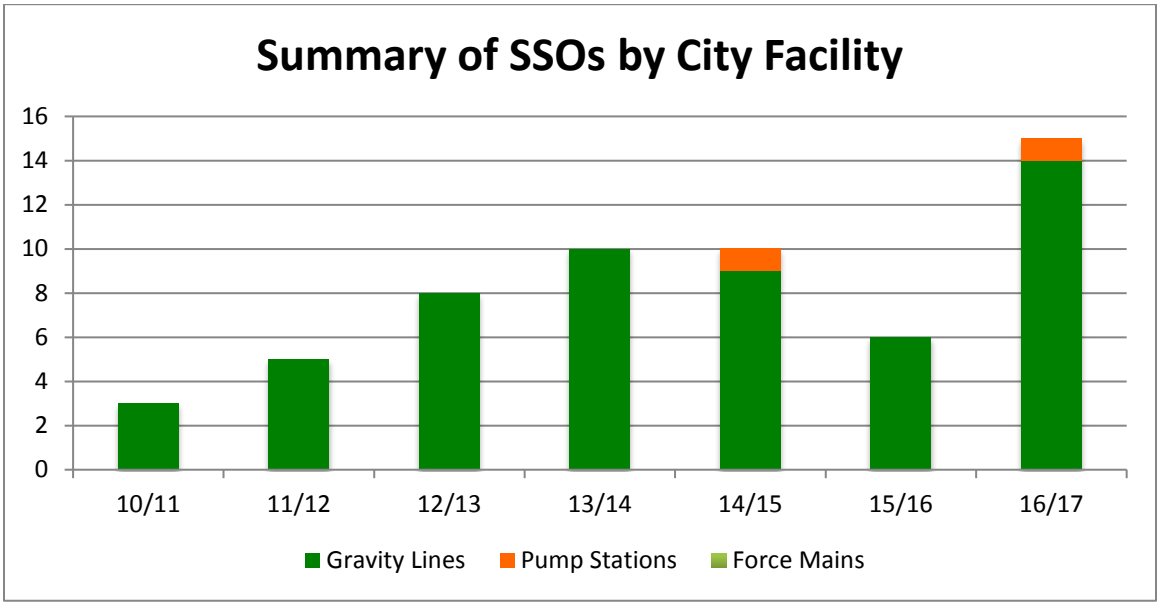


Figure IX - 2: Trend in all SSOs per Fiscal Year

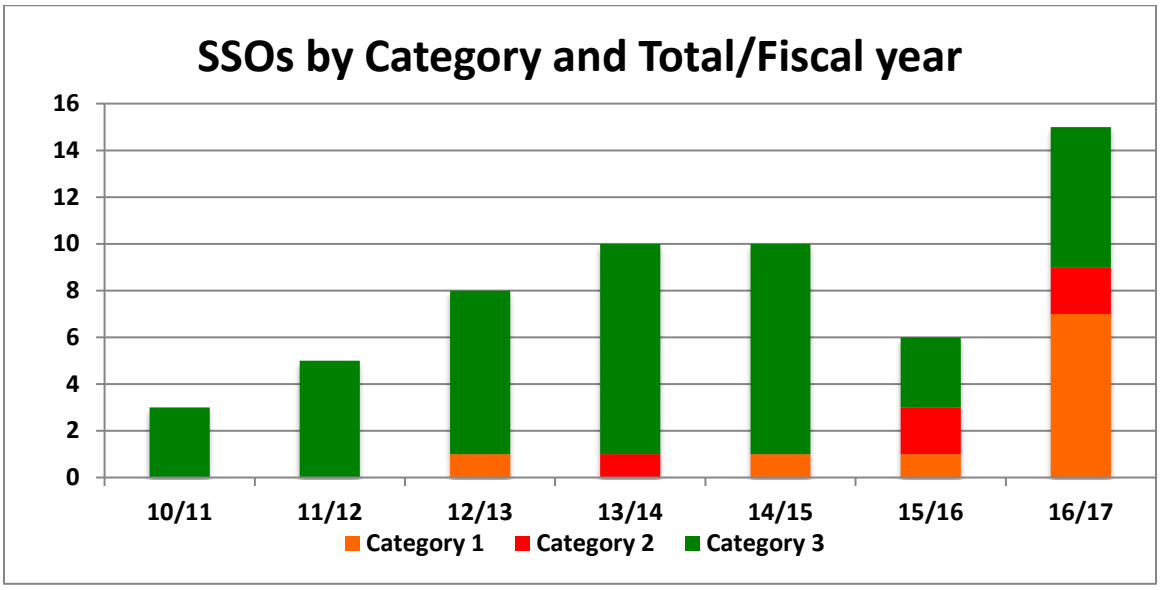


Table IX - 2: FY SSOs by Cause

FY	Roots	Debris	Grease	Capacity	Force Main	PS Failure	Other	Total
2011	1	1	0	0	0	0	1	3
2012	1	1	3	0	0	0	0	5
2013	3	2	3	0	0	0	0	8
2014	4	1	4	0	0	1	1	11
2015	7	2	0	0	1	0	1	7
2016	2	3	0	0	0	0	1	6
2017	4	1	1	8	0	0	1	15
Tota	22	11	13	8	1	1	45	61

Figure IX - 3: Trend in SSOs by Cause

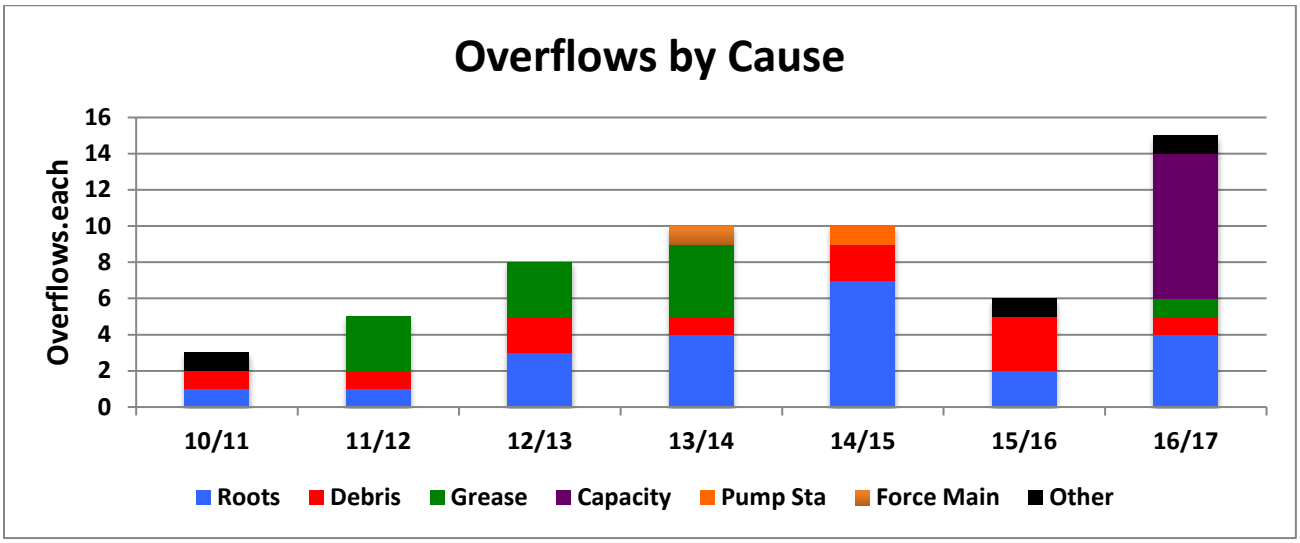
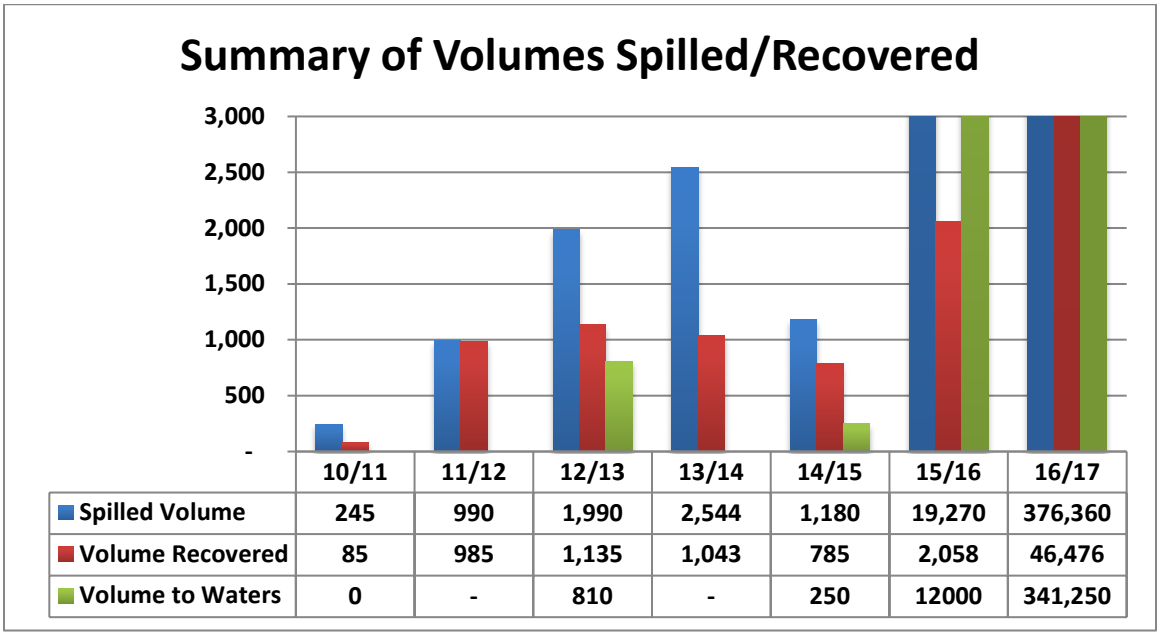


Table IX - 3: FY Spilled Volume Totals (Volume Spilled, Portion Contained, and Volume to Surface Waters)

FY	Total Volume Spilled, gallons	Portion Contained and Returned to Sewers, %	Total Volume Entering Surface Waters, gallons	Recovered, %	Reaching Waters, %
2011	245	85	0	34	0
2012	990	985	0	99	28
2013	1990	1135	810	57	40
2014	2544	1043	0	40	0
2015	1180	785	25	66	21
2016	19,270	2058	12,000	10	62
2017	376,360	46,476	341,250	12	90

Figure IX- 4 Trend in Volumes Spilled Fiscal Year



	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Spilled Volume	245	990	1,990	2,544	1,180	19,270	376,360
Volume Recovered	85	985	1,135	1,043	785	2,058	46,476
Volume to Waters	0	-	810	-	250	12000	341,250

Figure IX - 5: Trend in SSOs by Size of Volume Spilled

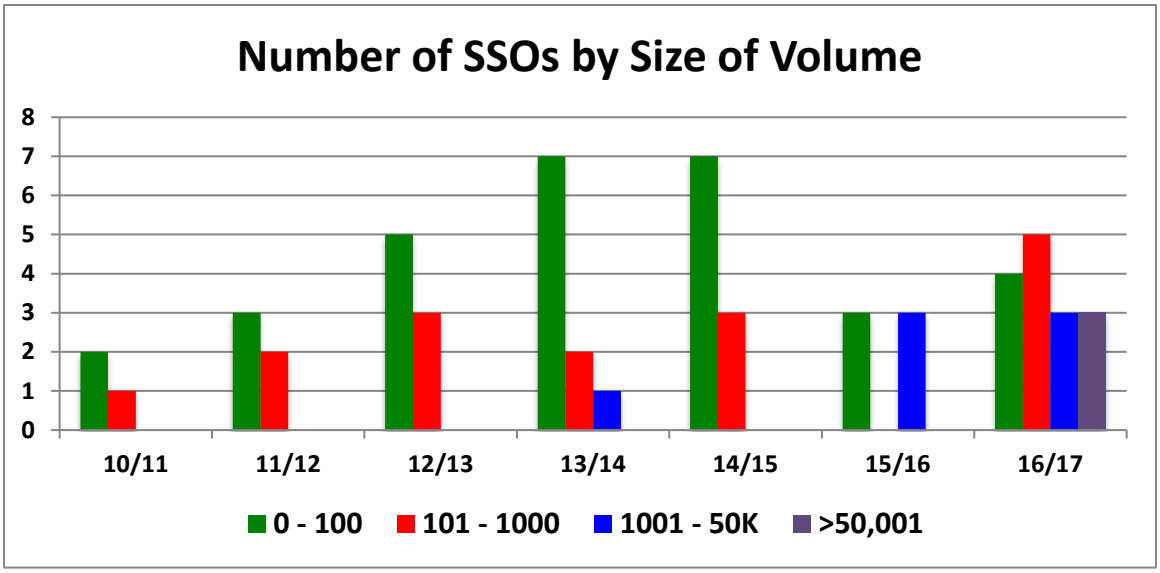


Figure IX-6: Comparison of SSO Rate per 100 Miles of Sewers

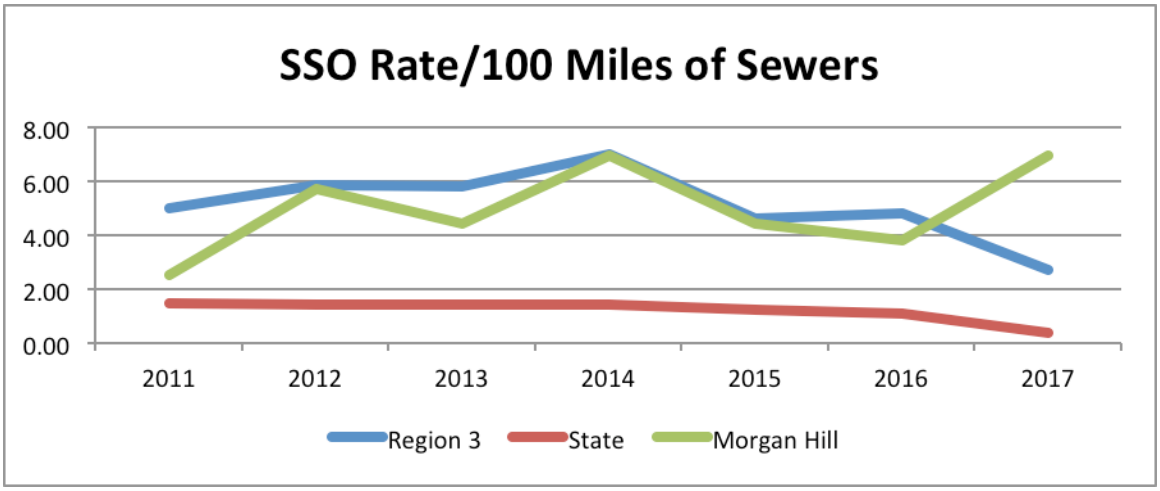
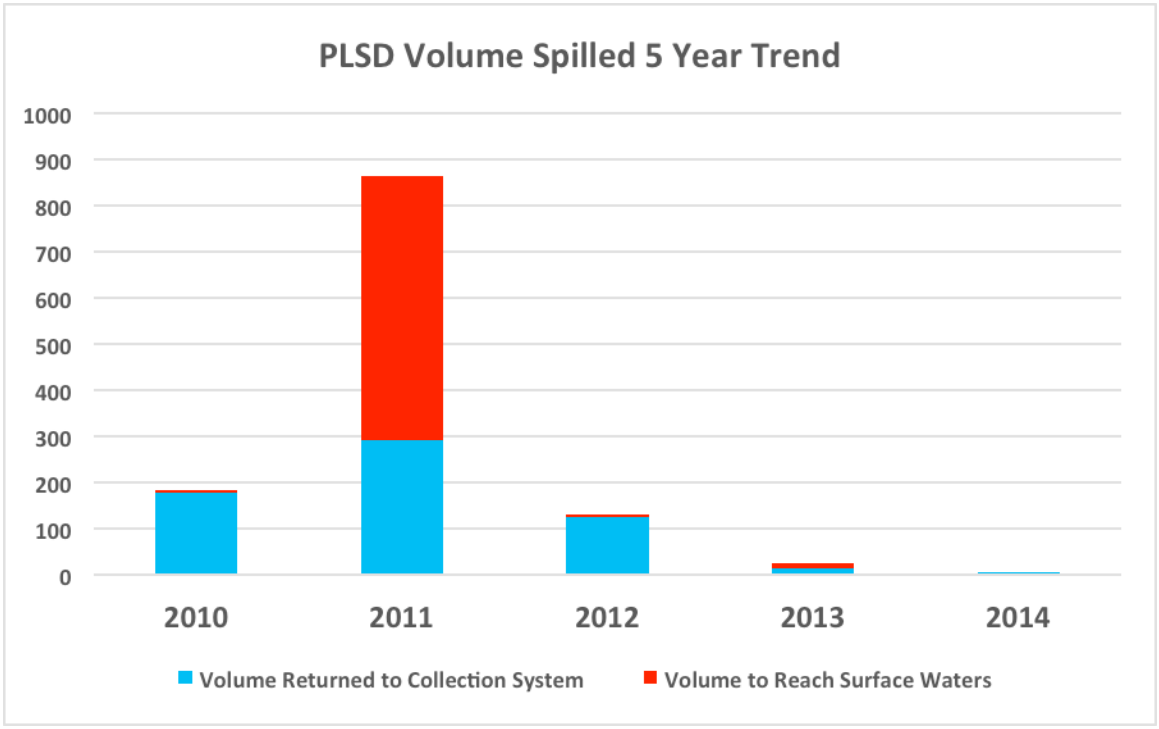


Figure IV – 7: Trend in Private Sewer Lateral Volumes Spilled



IX-4. 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 B of the SSMP.

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 biannual self-audit (see Element X).

IX-5. References

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

- City collection system records
- CIWQS SSO data as of October 19, 2017

Element X: SSMP Program Audits

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

X-1. Audits

The City will audit its implementation and compliance with the provisions of this SSMP every two years as required by the WDR. The next audit will be conducted and completed no later than October 2019 and every two years from then on. Thereafter City SSMP Audits will be filed in Appendix B. The audit will be conducted by a team consisting of City Staff selected from the Utilities and Engineering Department, Engineering Division and Utilities Division personnel. The audit team may also include members from other areas of the City, outside agencies, or contractors. During the SSMP audit, the City will conduct a record keeping 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 records or information.

The Sewer System Management Plan Audit Report Form (Appendix C) 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 a separate certified Audit Report. Upon completion of the audit report and certification by the LRO, the City will place a copy of the final Audit Report and Checklist in Appendix B, Sewer System Annual Audit Reports of this SSMP. Modifications and changes to the SSMP identified during the audit will be tracked in Appendix D, 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 performance indicators. An explanation of the SSMP development, and accomplishments in improving the sewer system, should be included in the audit report, including:

- How Morgan Hill implemented the sewer system SSMP elements in the past year;
- The effectiveness of implementing each SSMP element;

- A description of the additions and improvements made to the sanitary sewer collection system in the past reporting year; and
- A description of the additions and improvements planned for the upcoming reporting year with an estimated schedule for implementation.

X-2. SSMP Updates

The City will recertify its SSMP at least every five years from original City Council adoption date of July 22, 2009 and approval 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 the Monitoring and Measuring Program Element IX. In the event 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.

Element XI: Communication Program

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

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.

XI-1. Communication during SSMP Development and Implementation

The City, at least annually, communicates with the City Council at public meetings that allow for input from the public regarding the implementation and results of the collection system operations. The City's Deputy Director for Utilities is responsible to coordinate all communications activities and for all materials on the City Utilities webpage including the posting of the Council adopted SSMP and all cited references. He/she is also responsible to assure that communications at the SCRWA complements the City communications programs.

Information provided upon request to interested parties includes: a copy of completed sections of the SSMP, brochures and materials regarding collection system operations and maintenance and contact information and/or opportunities for input into the development and implementation of the collection system operations.

The Deputy Director of Utilities will annually provide the City Council, at a regularly scheduled meeting, collection system performance report that will included in the minutes of that public meeting and placed on the City website. The performance information will include the performance measures listed in Section 9: Monitoring, Measurement, and Program Modifications and will be compiled following the end of the fiscal year in an annual collection system performance report.

XI-2. Communication with Regional and Joint Wastewater Collection Systems

The City regularly communicates with the City of Gilroy and the SCRWA on matters affecting the operations and maintenance of the trunk sewer, FOG issues and wastewater treatment issues. These issues are also raised during regular SCRWA Board meetings conducted monthly. All meetings between the parties will be documented with a meeting agenda and meeting notes following each event.

Appendices

Appendix IV-1: Lift Station and Force Main Assessment Checklist

Inspection Information	
Inspection date	
Inspection participants	
Facility name	
Facility address	
Comments	

Background Information (Prior 12 Months)	
SSOs	
Equipment failures	
Alarm history (attach copy)	
Major maintenance activities (attach list if applicable)	
Pending work orders (attach copies)	
Operating problems (attach copy of operating log)	
Comments	

Security Features	
Fence and gate	
External lighting	
Visibility from street	

Doors and locks	
Intrusion alarm(s)	
Signs with emergency contact information	
Other security features	
Comments	

Safety Features and Equipment	
Signage (confined space, automatic equipment, hearing protection, etc.)	
Fall protection	
Emergency communication	
Equipment hand guards	
Hand rails and kickboards	
Platforms and grating	
Tag out and lock out equipment	
Hearing protection	
Eye wash	
Chemical storage	
Comments	

External Appearance	
Fence	

Landscaping	
Building	
Control panels	
Other external features	
Comments	

Building/Structure	
Lift Station building	
Control room	
Dry well	
Wet well	
Other structures	
Comments	

Instrumentation and Controls (including SCADA Facilities)	
Control panel	
Run time meters	
Flow meter	
Wet well level	
Alarms	
SCADA HMI/PLC	
Other instrumentation and controls	
Comments	

Electrical and Switch Gear	
Power drop	
Transformers	
Transfer switches	
Emergency generator and generator connection	
Starters	
Variable frequency drives	
Electrical cabinets	
Conduit and wireways	
Other electrical	
Comments	

Motors	
Lubrication	
Insulation	
Operating current	
Vibration and alignment	
Other	
Comments	

Pumps	
Lubrication	

Vibration and alignment	
Seals	
Indicated flow and discharge pressure	
Shutoff head	
Corrosion and leakage evidence	
Drive shaft	
Other	
Comments	

Valves and Piping	
Valve operation	
Valve condition	
Pipe condition	
Pipe support	
Other	
Comments	

Other	
Lighting	
Ventilation	
Support systems (air, water, etc.)	
Signage	

Employee facilities	
Sump pump	
Overhead crane	
Portable pump connections	
Portable pumps	
Comments	

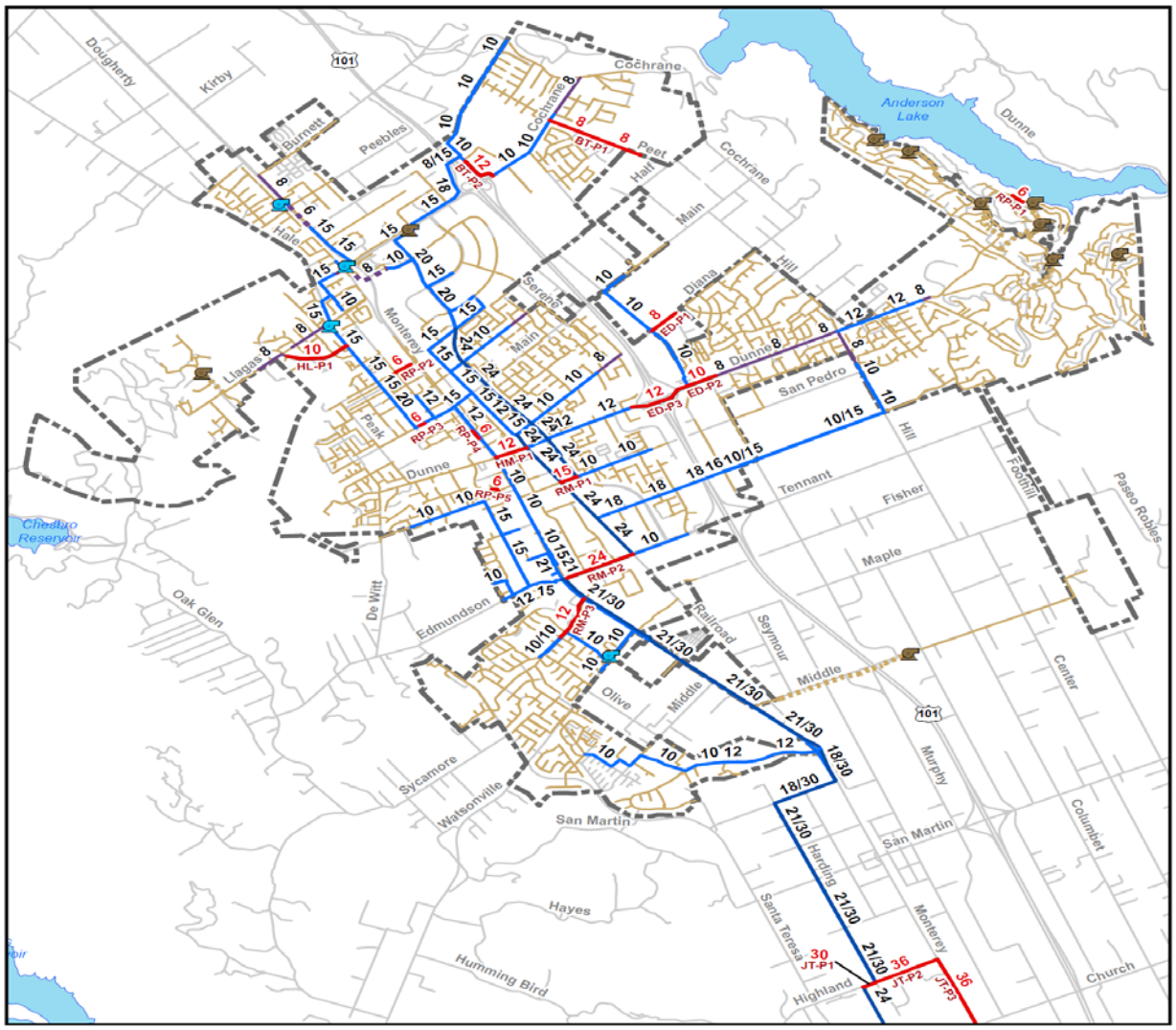
Appendix IV-2: City Policy Memorandums (Standard Operating Procedures)

Policy Memo Number	Title	Date
004	Construction Safety, Trenching and Shoring	3/8/17
005	Vactor/Contractor Operating and Disposal Procedures for Sewage and Excavation Discharges	6/4/13
012	Use of City Equipment/Material Yard Access	10/12/96
013	Inspection of Sewer Trunk Main/Manholes	12/31/14
014	Bloodborne Pathogen Exposure Control Policy	2/8/17
015	Vehicle Maintenance Inspection Policy	6/4/15
019	Work Area Traffic Control	6/1/16
020	Trench Restoration and Compaction	4/14/15
023	Sewer Video Camera	2/2/16
027	Confined Space 2013	5/1/13
029	Class A License 2013	6/11/13
032	Lockout/Tagout policy	2/23/16
	Vac-Con SOP	1/24/14
	Vactor SOP	1/24/14

Appendix IV-3: Capital Improvement Program Budget in $1000's

Sewer System 5-year CIP

CIP ID	Name/Description	Improvement Schedule						
		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Total
		($)	($)	($)	($)	($)	($)	($)
Collection System Improvements								
RP-P1	Holiday Dr to Oak Ln	105,704	0	0	0	0	0	105,704
RP-P2	Wright Ave - Garden Ave to Del Monte Ave	145,343	0	0	0	0	0	145,343
RP-P3	Main Ave near Hale	46,245	0	0	0	0	0	46,245
RP-P4	Monterey Rd - 3rd to 4th Street	92,491	0	0	0	0	0	92,491
RP-P5	Pipe in ROW E. of Manor to Monterey	52,852	0	0	0	0	0	52,852
RM-P3	LaCrosse betwee LaMar to Monterey	571,762	0	0	0	0	0	571,762
HL-P1	Llagas Creek Dr - Eagle Spings to Hale Ave	0	0	608,998	0	0	0	608,998
ED-P2	Duune - Murphy to Condit	0	0	0	0	296,691	0	296,691
BT-P2	Along NB Hwy 101 North of Cochrane	0	0	0	0	403,596	0	403,596
302T17 (HM-P1& RM-P2)	E. Dunn & Tennant Ave	312,307	1,912,741	0	0	0	0	2,225,048
302M15 (JT-P1)	Highland and Harding Ave	0	338,391	0	0	0	0	338,391
308A08	New Truckline to Treatment Plant	0	27,823,301	0	0	0	0	27,823,301
Repair and Replacement								
Group 1	See Group 1 Map	0	4,100,964	0	0	0	0	4,100,964
Group 2	See Group 2 Map	0	0	1,973,438	0	0	0	1,973,438
Group 3	See Group 3 Map	0	0	613,559	0	0	0	613,559
Group 4	See Group 4 Map	0	0	0	1,533,317	0	0	1,533,317
Group 5	See Group 5 Map	0	0	0	627,615	0	0	627,615
Group 6	See Group 6 Map	0	0	0	1,009,566	0	0	1,009,566
Group 7	See Group 7 Map	0	0	0	0	3,015,794	0	3,015,794
Group 8	See Group 8 Map	0	0	0	0	0	1,103,695	1,103,695
Group 9	See Group 9 Map	0	0	0	0	0	602,771	602,771
302U17	2017 I&I Project	782,921	0	0	0	0	0	782,921
302N15	Trouble Spot Evaluation and Repair	0	1,000,000	0	0	0	0	1,000,000
304_15	Lift Station Repair and Refurbish	750,000	250,000	0	0	0	0	1,000,000
Utility Planning Projects								
	Sewer System Master Plan Updates	0	0	0	0	0	200,000	200,000
	Sewer System Management Plan Updates	0	0	0	0	0	100,000	100,000
	Lift Station Condition Assessment	0	0	80,000	0	0	0	80,000
	Holiday Lakes Gravity Line Feasibility Study	0	60,000	0	0	0	0	60,000
	I&I and Cross Connection Elimination Study	75,000	75,000	75,000	75,000	0	0	300,000
	Sewer Rate Study Updates	0	0	0	0	0	100,000	100,000
Settlement Assessment and Repairs								
	Estimated Assessment and Repairs	1,326,270	1,126,270	1,226,270	2,426,270	2,426,270	2,426,270	10,957,620
SCRWA Projects								
303093	Sewer Plant Expansion (SCRWA)	560,000	420,000	420,000	10,500,000	8,400,000	8,400,000	28,700,000
303A11	Sewer Plant Maintenance/ Improvements	4,500,000	2,600,000	830,000	750,000	750,000	0	9,430,000
	Totals	$9,320,895	$39,706,667	$5,827,265	$16,921,768	$15,292,351	$12,932,736	$100,001,682



Legend

PRELIMINARY

- Proposed Pipe Improvements
- Modeled Force Mains
- Roads
- **Existing Modeled System**
- 8" or Smaller
- City Limits
- Lift Stations
- **Non-Modeled System**
- Lakes
- Modeled Gravity Pipes by Size
- Lift Stations
- 8"
- Gravity Pipes
- 10" - 21"
- Force Mains
- 24" - 30"

AKEL ENGINEERING GROUP INC

Updated: August 21, 2017

0 0.25 0.5 1 Mile

File Path: P:\cGIS\GIS_Projects\Morgan_Hill\Sewer\SSMP_2016\SSManagementPlan\MH_Fig4_FutureImprovement_082117.mxd

Proposed Capital Projects Fiscal 2018 to 2023

Sewer System Management Plan
City of Morgan Hill

CITY OF MORGAN HILL

Appendix IV-4: Major Sewer System Equipment Inventory

Equipment Number	Quantity	Major Equipment Type	Year Purchased	Location
#S09166	1	Combination Flusher / Jetter Truck	2009	Corp Yard
#S15112	1	Flusher / Jetter only Truck	2015	Corp Yard
#S15116	1	4X4 Flatbed Utility Truck	2016	Corp Yard
#S07152	1	Utility Body Lift/pump Station Maintenance Truck	2007	Corp Yard
#S07158	1	4X4 Pick Up Truck	2007	Corp Yard
#S07331	1	4X4 Utility Vehicle Off Road only	2007	Corp Yard
#S14009	1	Portable Emergency Generator 60 KW	2009	Bus Yard
#S15010	1	Portable Emergency Generator 60 KW	2015	Bus Yard
N/A	1	Portable Easement Flusher	2002	Bus Yard
#W97335	1	6" Trash Pump for pump around	N/A	Bus Yard
	4	3127 Flygt Spare Sewer Station Pump		Corp Yard
	5	3102 Flygt Spare Sewer Station Pump		Corp Yard
	2	3153 Flygt Spare Sewer Station Pump		Corp Yard
	1	315227 Flygt Spare Sewer Station Pump		Corp Yard

* Equipment Inventory as of 6/20/17

Appendix IV-5: Critical Sewer System Replacement Parts Inventory

Contingency Equipment and Replacement Inventories			
Qty	Part No.	Description	Location
4	G/J	3127 Flygt Spare Sewer Station Pump	Bus Yard
5	H/K/W/P/M	3102 Flygt Spare Sewer Station Pump	Bus Yard
2	A/C/D/F/B	3153 Flygt Spare Sewer Station Pump	Bus Yard
1	A/C/D/F	3152 Flygt Spare Sewer Station Pump	Bus Yard
1	O	3126 Flygt Spare Sewer Station Pump	Bus Yard
1	I	3127 Flygt Spare Sewer Station Pump	Bus Yard
2	14 407 129	MINI-CAS 120V	Truck 08155
3	298 62 00	SHIMS	Truck 07152
3	298 62 01	SHIMS	Truck 07152
3	298 62 02	SHIMS	Truck 07152
0	303 50 00	LIFTING HANDLE S.S.	
0	303 60 00	IMPELLER PULLER 435	
4	306 00 02	GROMET FOR HANDLE	Truck 07152
0	309 09 00	IMPELLER 433 WHITE 6"	
0	338 13 00	WASHER IMPELLER	
0	379 29 00	IMPELLER 467 N/A	
0	384 63 00	WEAR RING, STATIONARY BRASS	
0	385 46 00	IMPELLER 461	
2	385 66 01	INSPECTION SCREW TOOL	Truck 07152
4	385 67 00	INSPECTION SCREW STATOR	Truck 07152
0	398 88 04	IMPELLER 638	
0	398 92 00	WEAR RING, STATIONARY BRASS	
0	398 92 02	WEAR RING, STATIONARY BRASS	
0	408 51 10	VOLUTE SH	
	427 04 00	WASHER IMPELLER	Truck 07152
4	428 22 05	INSPECTION SCREW OIL	Truck 07152
0	438 93 00	IMPELLER 435 NEVER-CLOG	
0	438 99 00	IMPELLER 433 NEVER-CLOG	
0	439 12 00	IMPELLER 481 REPLACES 467	
0	439 14 00	IMPELLER 483 REPLACES 461	
1	441 43 00	LIFTING CHAIN GRIP	Truck 07152
0	461 80 00	IMPELLER 434	Bus Yard
0	465 14 00	VOLUTE HT	
0	465 14 0	I Lift Station pump 1 Volute	
0	465 14 22	I Lift Station pump 2 Volute	
0	477 11 00	LIFTING HANDLE S.S.	
4	493 39 04	IMPELLER 267	Bus Yard
0	493 39 05	IMPELLER 268	
2	582 88 31	FLOAT 65FT.	PM Bay
4	642 13 00	INSPECTION SCREW	Truck 07152
0	642 32 50	IMPELLER 455 N-TYPE	
0	642 32 71	IMPELLER 457	
3	678 47 22	IMPELLER 462 N-TYPE	Bus Yard
4	678 47 32	IMPELLER 463 N-TYPE	Bus Yard
2	678 47 42	IMPELLER 464 N-TYPE	Bus Yard
4	678 49 63	IMPELLER 489 N-TYPE	Bus Yard

0	642 32 71	IMPELLER 457	
3	678 47 22	IMPELLER 462 N-TYPE	Bus Yard
4	678 47 32	IMPELLER 463 N-TYPE	Bus Yard
2	678 47 42	IMPELLER 464 N-TYPE	Bus Yard
4	678 49 63	IMPELLER 489 N-TYPE	Bus Yard
	680 34 00	INSERT RING REPLACES 664 75 00	
	680 36 00	INSERT RING N-TYPE REPLACES 606 70 00, 691 65 00, 692 17 00	
	682 49 00	INSERT RING	
1	685 15 27	IMPELLER 273 N-TYPE	Bus Yard
0	695 03 06	VOLUTE MT REPLACES 303 24 00	Bus Yard
4	700 76 32	IMPELLER N-463 - HARD CHROME	Bus Yard
	702 85 00	INSERT RING	
2	704 17 18	IMPELLER N-438 - HARD CHROME	Bus Yard
	705 80 00	INSERT RING - HARD CHROME	
	707 46 00	INSERT RING - HARD CHROME	
	716 41 06	IMPELLER 438 N-TYPE REPLACES 678 48 18	
4	80 95 30	STUD FOR VOLUTE	Truck 07152
4	80 95 37	STUD FOR VOLUTE	Truck 07152
0	81 41 55	SCREW HANDLE	
0	81 41 58	SCREW VOLUTE GUIDE 18MM	
0	82 00 34	M8 X 25 ALLEN SCREW	
0	82 00 74	Allen Screw	
0	82 00 69	ALLEN SCREW TOP	
	82 00 71	ALLEN SCREW VOLUTE 12MM	
	82 13 90	ALLEN SCREW IMPELLER 8mm	
	82 23 59	NUT FOR VOLUTE 19MM	
	82 48 93	SPRING WASHER STATOR S.S.	
	82 50 65	SEALING WASHER NYLON	
	82 69 42	PROTECTIVE PLUG STATOR	
	82 70 34	INSPECTION SCREW OIL 24MM	
20	82 73 90	O-RING OIL	Truck 07152
	82 73 93	O-RING STATOR INSP. SCREW	
	82 74 79	O-RING ENTRANCE COVER	
	82 74 95	O-RING VOLUTE & TOP 3152	
	82 74 97	O-RING (for stator) 239 5X7 7-NBR	
0	82 74 98	O-RING VOLUTE	
0	82 75 01	O-RING VOLUTE	
0	82 75 03	O-RING VOLUTE	
0	82 75 09	O-RING VOLUTE	
20	82 76 85	O-RING COOLANT & STATOR	Truck 07152

	82 77 30	O-RING OIL	
	83 04 56	HEX SOCKET HEAD SCREW	
4	83 08 06	SINKING BALL - 4"	Truck 07152
0	84 13 63	IMPELLER PULLER 267-268	
0	84 42 34	ALLEN SCREW IMPELLER	
0	84 90 94	SEAL RING JOINT VOLUTE FLANGE	
1	94 21 06	MOTOR CABLE SUBC 10AWG/3-2-1GC	Bus Yard
1	94 21 09	MOTOR CABLE SUBC 6AWG/3-2-1GC	Bus Yard
1		1/4" STAINLESS CHAIN	Bus Yard
0	82 74 63	O- Ring 49.5X3 NBR	
0	82 40 82	PLAIN WASHER (20)-32MM	
0	84 18 02	SEAL SLEEVE (20) -23MM	
0	597 98 02	RING	

Last Inventory Date: 1/31/2018

Appendix A: Sewer System Management Plan Adoption Documents

RESOLUTION NO.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORGAN HILL APPROVING THE SANITARY SEWER MANAGEMENT PLAN AS REQUIRED BY THE STATE WATER RESOURCES CONTROL BOARD ORDER NO. 2006-003- STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

WHEREAS, on May 2, 2006, the State Water Resources Control Board Order No. 2006-0003- Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems was adopted and implemented; and

WHEREAS, the purpose of the WDR is to develop a regulatory mechanism to provide a consistent statewide approach for reducing sanitary sewer overflows; and

WHEREAS, the WDR requires preparation of a Sanitary Sewer Management Plan (SSMP) with 11 separate elements and Certification once completed; and

WHEREAS, the SSMP is a requirement for WDR compliance and must be prepared and approved by August 1, 2009; now

THEREFORE, BE IT RESOLVED by the City Council of the City of Morgan Hill to approve the SSMP as required by the State Water Resources Control Board Order No. 2006-0003-Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

PASSED AND ADOPTED by the City Council of Morgan Hill at a Regular Meeting held on the 22nd day of July, 2009 by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

CERTIFICATION

I, **IRMA TORREZ, CITY CLERK OF THE CITY OF MORGAN HILL, CALIFORNIA,** do hereby certify that the foregoing is a true and correct copy of Resolution No. adopted by the City Council at the Regular City Council Meeting of July 22, 2009.

WITNESS MY HAND AND THE SEAL OF THE CITY OF MORGAN HILL.

DATE:_____

_____
IRMA TORREZ, City Clerk

Appendix B: Sewer System Management Audit Reports

SSMP Audit Checklist

The purpose of the SSMP Audit is to evaluate the effectiveness of the City of Morgan Hill's 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 Morgan Hill's 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 to City Sewer Ordinances, Regulations or standards since the last audit?	☐	☐

G.	Were any changes to the SCRWA JPA made since the last SSMP Audit?	☐	☐
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 currently 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, lift 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 SSS GWDR? Have all Technical Report and Water Quality Sampling requirements been met 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 Sanitary Sewer Master Plan 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 capacity 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?	☐	☐
Discussion:			
ELEMENT X – SSMP AUDITS			
A.	Will the SSMP Audit be completed, reviewed and filed in Appendix B?	☐	☐
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 the Annual Sewer System Report? Was the annual report uploaded to the City Sewer Section website?	☐ ☐	☐ ☐
Discussion:			
Change Log			
A.	Is the SSMP Change Log (Appendix D), current and up to date?	☐	☐
Discussion:			

Audit Team: _____ Date: _____

Prepared By: _____ Date: _____

Certified By: _____ Date: _____

Log of SSMP Changes

Date	SSMP Element #	Description of Change/Revision Made	Person Authorizing Change
2/18	General	Added new reference sections to the end of each element	
2/18	General	Added collection system infrastructure information, historical performance results and graphs of monitored results.	
2/18	General		
2/18	Cover Page	Revised the cover page to add adoption dates and WDID	
2/18	Introduction	Added new introduction and expanded information to include tables and graphs of the sanitary sewer system assets.	
2/18	Definitions, Acronyms, etc.	Added an expanded list of definitions and acronyms.	
2/18	References	Added list of regulatory references to Intro.	
2/18	I-1	Revised and expanded the City goals	
2/18	II-1	Revised and added a new organizational chart	
2/18	II-2	Expanded the list of positions description, LRO designations and reporting relationships; revised several classification titles.	
2/18	Table II-1	Added and expanded for new appendices responsibilities.	
2/18	III-1	Added table of Legal Authorities for both City and SCRWA.	
2/18	III-2	New section added describing relationship with SCRWA.	
2/18	IV-1	Updated the mapping system and the work flow management system description; added revised organizational chart.	

2/18	VI/App E	Entirely rewritten and full copy added to Appendix E.	
2/18	App F	New Water Quality Monitoring Plan prepared, and full document added to new appendix.	
2/18	VI-2	Added information regarding dual reporting responsibilities to the RWQCB.	
2/18	El VII	Completely rewritten and description of FSEs added along with historical FOG related SSOs.	
2/18	El VIII	Completely rewritten to reflect 2017 Sewer Master Plan results and capital projects.	
2/18	IX-3	Add historical Tables and Graphs of performance and SSO trends	
2/18	X-1	Updated for timing of audits; added an audit reporting form;	
2/18	X-2	Updated schedule for full SSMP revisions.	
2/18	XI-2	Added new section regarding communications with SCRWA and joint trunk sewer responsibilities.	
2/18	App IV-1	Added new Lift Station and Force Main Assessment Checklist	
2/18	App IV-2	Revised list and moved to appendix.	
2/18	App IV-3	Revised CIP from 2017 Sewer Master Plan including map of proposed projects.	
2/18	App IV-4	Updated Major Equipment listing to June 2017	
2/18	App IV-5	Updates Replacement Parts Listing	
2/18	App A	Inserted SSMP adoption resolution from July 22, 2009.	
2/18	App B	Added new SSMP Audit Report section for placement of future final certified SSMP Audit Reports	
2/18	App C	Added new SSMP Audit Checklist	
2/18	App D	Added and updated SSMP Change Log for current revisions.	

2/18	App E	Full copy of the Morgan Hill Overflow Emergency Response Plan.	
2/18	App F	New City Water Quality Monitoring Plan.	
2/18	App G	Added list of all SSMP activities and deadlines listed in the current version of the SSMP.	
2/18			
2/18			
2/18			

Appendix E: Overflow Emergency Response Plan (OERP)

City of Morgan Hill

Overflow Emergency Response Plan

Effective Date: Feb 21 2018

Revised Date:

Approved by: Daniel Repp

Signature:

Prepared by David Patzer, DKF Solutions Group

(707) 373-9709 dpatzer@dkfsolutions.com

Table of Contents

Sanitary Sewer Overflow Emergency Response Plan

(ref. SWRCB Order No. 2006-0003-DWQ Element VI)

Sanitary Sewer Overflow Emergency Response Plan

(ref. SWRCB Order No. 2006-0003-DWQ Element VI)

1. Purpose

The purpose of the City of Morgan Hill Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for City personnel to follow in responding to, cleaning up, and reporting SSOs that may occur within the City's service area. This OERP satisfies the SWRCB Statewide General Waste Discharge Requirements (GWDR), which require wastewater collection agencies to have an Overflow Emergency Response Plan.

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 San Francisco Regional Water Quality Control Board (SFRWQCB), the Central Coast Regional Water Quality Control Board (CCRWQCB), and the California State Water Resources Control Board (SWRCB)**.**

3. Definitions As Used In This OERP

BUILDING DRAIN – The building drain is that part of the lowest wastewater piping which receives the

discharge from drain pipes inside the walls of a building or structure and conveys it to the private lateral (generally connecting within 2' of the building wall).

BUILDING SEWER – Private Sewer Facilities that convey wastewater from the premises of a Customer to the Public Sewer System.

BUILDING WASTEWATER PIPELINES – The building wastewater pipelines are those black or grey water pipes installed within the walls of a building or structure that connect to the building drain. Building wastewater pipelines may include interior sump systems, grease traps or other appurtenances.

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.

CLEANOUT – A pipe rising from the side sewer to the ground surface with a removable cap or plug. It is used to access the side sewer to free blockages.

FOG – 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.

LATERAL SEWER: The portion of a side sewer beginning at the property line cleanout, and terminating in the main sewer.

LEGALLY RESPONSIBLE OFFICIAL (LRO): Refers to an individual who has the authority to certify reports and other actions that are submitted through CIWQS.

MAIN SEWER: Sewer pipelines located in street, highways, public ways, or private rights of way which are used to serve the general public.

MAINTENANCE HOLE OR MANHOLE: Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection.

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.

PREVENTATIVE MAINTENANCE: Refers to maintenance activities intended to prevent failures of the wastewater collection system facilities (e.g. cleaning, CCTV, inspection).

PRIVATE LATERAL(S) – The sewer pipeline from the plumbing of a building to a collection line, including portions that extend across public rights-of-way and the saddle, wye or other physical connection to the collection line. Private sewer laterals are privately owned and maintained.

PRIVATE LATERAL SEWAGE DISCHARGES – Sewage discharges that are caused by blockages or other problems within a privately owned lateral. Spills from private property are not reported to the regulatory agency.

PRIVATE SEWER FACILITIES – Sewer facilities that are privately constructed and not dedicated and accepted as a Public Sewer Facility by the City. Private Sewer Facilities generally include sewer facilities within a privately owned building, private collection systems, private sewer laterals, private pump stations, grease interceptors, and all other facilities located between the sewer customer and the connection to the collection line, including the integral wye fitting that connects the lateral to a collection line. Sewer facilities intended for dedication to the City are Private Sewer Facilities until such time as they are accepted by the City.

PROPERTY LINE CLEANOUT – A cleanout installed at or near the property line.

PUBLIC SEWER – A public sewer is the sewer collection system owned by the City lying within limits of public streets, roads, easements, reserves, non-exclusive easements or other public rights of way and downstream of the wye or cleanout on a Private lateral nearest to a sewer main. The location of a Private lateral within any public street or right of way does not convert it to a public sewer owned by the City unless the City has taken an affirmative action to accept ownership. Public sewer facilities owned and maintained by the City, including facilities designed and constructed by the City and facilities that have been dedicated and accepted by the City. Private Sewer Facilities constructed for dedication to the City do not become public sewers until they have been accepted by the City.

PUBLIC SEWER FACILITIES OR PUBLIC SEWER SYSTEM – Sewer facilities owned and maintained by the City, including facilities designed and constructed by the City and facilities that have been dedicated and accepted by the City. Private Sewer Facilities constructed for dedication to the City do not become Public Sewer Facilities until they have been accepted by the City.

ROOTS - Tree root invasion presents an additional problem. If a mat of root hair forms in the sewer line it slows the flow of wastewater and exacerbates the rate of accumulation of FOG materials.

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

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

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

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

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

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: Any publicly-owned system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to

the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

SENSITIVE AREA: Refers to areas where an SSO could result in a fish kill or pose an imminent or substantial danger to human health (e.g. parks, aquatic habitats, etc.)

SIDE SEWER: The part of the sewer system beginning at the foundation wall of any building and terminating in the sewer main.

UNTREATED OR PARTIALLY TREATED WASTEWATER: Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.

WATERS OF THE STATE: Waters of the State (or waters of the United States) means any surface water, including saline waters, within the boundaries of California. In case of a sewage spill, storm drains are considered to be waters of the State unless the sewage is completely contained and returned to the wastewater collection system and that portion of the storm drain is cleaned.

4. State Regulatory Requirements for Element 6, Overflow Emergency Response Plan

General Waste Discharge Requirement (GWDR)

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

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

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

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

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

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

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

The Sewer System Management Plan and critical supporting documents are available to the public on the City's website: www.morgan-hill.ca.gov.

5. 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 debrief and failure analysis of certain SSOs.

6. SSO Detection and Notification

ref. SWRCB Order No. 2006-0003-DWQ VI(a)

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

6.1 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.morgan-hill.ca.gov. The City's telephone number for reporting sewer problems is (408) 776-7333 during business hours and (408) 779-2101 (Police Dispatch) after hours and on weekends.

Normal Work Hours

When a report of a sewer spill or backup is made during normal work hours, Public Works Administrative staff receives the call, takes the information from the caller, enters the caller's name, address and nature of the complaint on the Public Works Service Request form (Appendix E), and relays the information to the Senior Utility Worker. The Senior Utility Worker will respond to the call and determine the need to call out a Wastewater Crew. The Senior Utility Worker develops a work order describing the call and response actions. The paper work order is generated and forwarded to the Operations Manager for review. The work order is then entered into the City's database.

After Hours

When a report of a sewer spill or backup is made after work hours or on a weekend, Police Dispatch will take the call and contact the Call Out Employee on the current call out list. Dispatch will continue

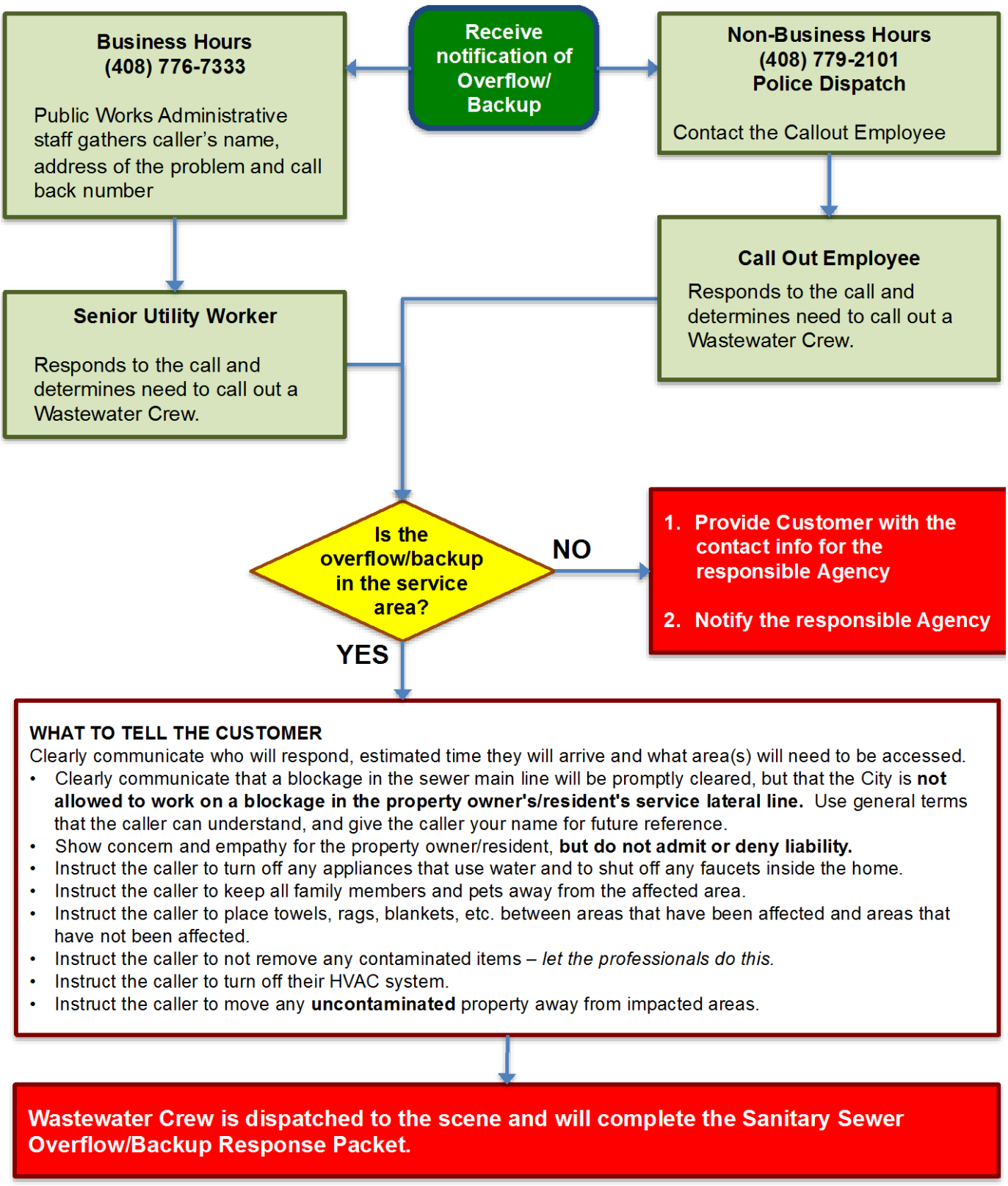
calling persons on the list until a person is reached. The Callout employee will complete the Public Works Service Request form describing the call, date, time, nature of complaint, and response actions, if any. The following working day the Call Out employee will forward the form to their supervisor for review and then to the Operations Manager for review.

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

Figure 6.1 is an overview of the procedure for receiving a sewage overflow or backup report *(see next page):*

Fig. 6.1 Overview of Receiving a Sewage Overflow or Backup Report Procedure



6.2 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.

6.3 CONTRACTOR OBSERVATION

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

1. Immediately notify the City by calling (408) 776-7333 during business hours or (408) 779-2101 after hours.
2. Protect storm drains.
3. Protect the public.
4. Provide information to the Wastewater Crew such as start time, appearance point(s), suspected cause, weather conditions, etc.
5. Direct ALL media and public relations requests to the Public Information Officer at (408) 310-4706 (office) or (408) 406-4076 (cell).

Appendix C includes a handout for Contractors with a flowchart of the above procedures.

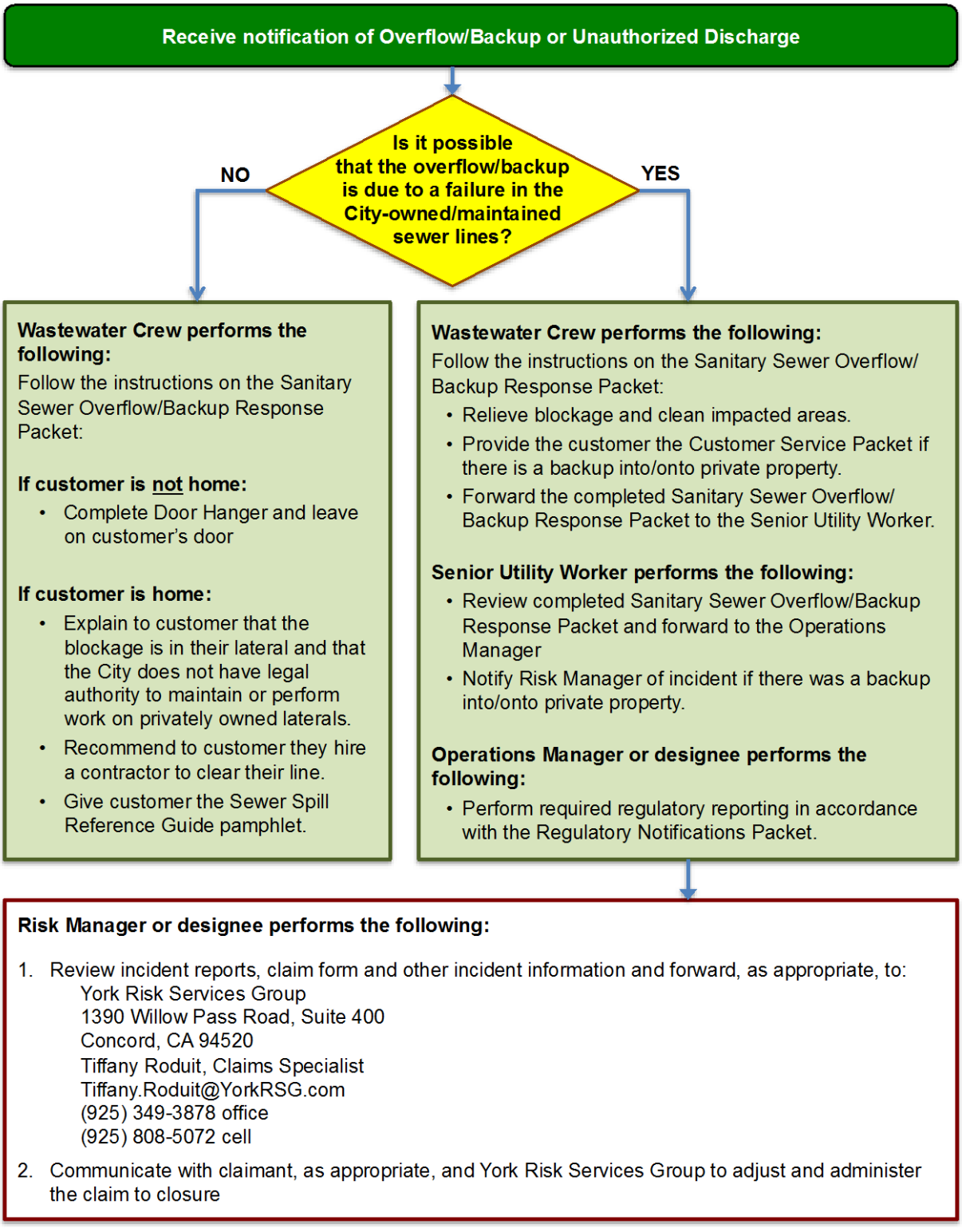
7. SSO Response Procedures

ref. SWRCB Order No. 2006-0003-DWQ Element 6(b)

7.1 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 (Figure 7.1) is an overview of the response activities.

Figure 7.1 Overview of SSO/Backup Response



7.2 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 Utility Worker and Operations Manager in event of major SSO.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).
- To photograph and document affected and unaffected areas from a spill.

7.3 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 associated with 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 use of gas monitoring detectors for air quality in manholes (follow confined space procedures) and traffic controls at the site.

7.4 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 caller 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 Appendix B: Sanitary Sewer Overflow and Backup Response Procedures.

7.5 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.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Pump around the blockage/pipe failure.

For detailed procedures refer to Appendix B: Sanitary Sewer Overflow and Backup Response Procedures.

7.6 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 assistance is required, immediately contact other employees, contractors, and equipment suppliers. For detailed procedures refer to Appendix B: Sanitary Sewer Overflow and Backup Response Procedures.

7.7 Equipment

This section provides a list of specialized equipment that may be used to support this Overflow Emergency Response Plan.

- *Closed Circuit Television (CCTV) Inspection Unit* – A CCTV Inspection Unit is required to determine the root cause for all SSOs from gravity sewers.
- *Camera* -- A digital or disposable camera is required to record the conditions upon arrival, during clean up, and upon departure.
- *Emergency Response 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.
- *Air plugs, sandbags and plastic mats*
- *SSO Sampling Kits*

Standard Operating Procedures for City equipment are stored at the Corporation Yard.

7.8 Outside Assistance

Responders will refer to the vendor contact list as necessary for assistance with the response.

8. Recovery and Cleanup

ref. SWRCB Order No. 2006-0003-DWQ Element 6(e)

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:

8.1 Estimate the Volume of Spilled Sewage

Use the methods outlined in the Sanitary Sewer Overflow and Backup Response Procedures (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.

8.2 Recovery of Spilled Sewage

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

8.3 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.

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 onto private property is definitely the result of City system failure, the property owner can call out a water damage restoration contractor to complete the cleanup and restoration. In both cases, City claim forms may be issued if requested by the property owners.

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.

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.

Natural Waterways

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

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

8.4 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 will be followed when directed. Additionally, the Wastewater Crew will use their best judgment regarding supplemental sign placement in order to protect the public and local environment. Signs will be removed after internal consultation with the Deputy Director of Utility Services and/or the County Health Department.

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 as determined by County Environmental Health. The warning signs, once posted, will be checked at least 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. City Staff 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 Public Information Officer will provide the media with all revelvant information.

9. Water Quality

ref. SWRCB Order No. 2006-0003-DWQ Element 6(f)

9.1 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 Wastewater Crew will collect water 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 will then be brought to an analytical laboratory for analysis.

9.2 Water Quality Monitoring Plan

The City Water Quality Monitoring Plan will be implemented immediately upon discovery of any Category 1 SSO of 50,000 gallons or more 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.

The details of the Water Quality Monitoring Program are located in Appendix F.

9.3 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 Deputy Director for Utility Services will supervise and prepare this report. This report, which does not preclude the Water Boards from requiring more detailed analyses if requested, shall include at a minimum, the following:

<u>Causes and Circumstances of the SSO:</u>

- 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 spill volume that reached surface waters and 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.

<u>City's Response to SSO:</u>

- 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.

10. Sewer Backup Into/Onto Private Property Claims Handling 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 staff 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 City staff to gather information regarding the incident and notify the Risk Manager or his/her designee.
- It is the responsibility of the Risk Manager or his/her designee to review all claims and to oversee the adjustment and administration of the claim to closure.

11. Notification, Reporting, Monitoring and Recordkeeping Requirements

ref. SWRCB Order No. 2006-0003-DWQ Element 6(c)

In accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS GWDRs), the City 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 Section 11.1 on the following page.

11.1 Requirements Table

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.	Call Cal OES at: **(800) 852-7550**
REPORTING	• Category 1 or Category 2 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 3 SSO: The City will submit certified report within 30 calendar days of the end of month in which SSO the occurred. • 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	Enter data into the CIWQS Online SSO Database[3] (http://ciwqs.waterboards.ca.gov/)certified by the Legally Responsible Official(s) [4]. All information required by CIWQS will be captured in the Sanitary Sewer Overflow Report. 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 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.	Self-maintained records shall be available during inspections or upon request.

[3] In the event that the CIWQS online SSO database is not available, the Operations Manager will notify SWRCB by phone and will fax or e-mail all required information to the RWQCB office 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.

[4] 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.

	• 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.	

For reporting purposes, if one SSO event of any category results in multiple appearance points in a sewer system, a single SSO report is required in 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 cause the SSO, and descriptions of the locations of all other discharge points associated with the single SSO event.

11.2 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
- 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
- Work service request information used to document all feasible and remedial actions taken

All complaint records will be maintained in hardcopy at the Corporation Yard and on the City's server for a minimum of five years whether or not they result in an SSO.

12. Post SSO Event Debriefing

ref. SWRCB Order No. 2006-0003-DWQ Element 6(d)

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 Category 1 and Category 2 SSO events, all of the participants, from 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 in 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.

13. Failure Analysis Investigation

ref. SWRCB Order No. 2006-0003-DWQ Element 6(d)

The objective of the failure analysis investigation is to determine the "root cause" of the SSO and to identify corrective action(s) needed that will reduce or eliminate future potential for the SSO to recur 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 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.
- Review 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 segment(s) immediately following the SSO and reviewing the video and logs,
- Reviewing any Fats, Oil and Grease (FOG) related information or results
- Review any root related information
- 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) will be used to document the investigation.

14. SSO Response Training

ref. SWRCB Order No. 2006-0003-DWQ Element 6(d)

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

14.1 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 this 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 this plan 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 Overflow Emergency Response Plan and Sanitary Sewer Management Plan

- 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 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 will 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.

14.2 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, force main failure, pump station failure, and lateral blockage). The results

and the observations during the drills will be recorded and action items will be tracked to ensure completion.

14.3 SSO Training Record Keeping

Records of all training that is provided in support of this plan will be maintained in the Utility Services office. 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.

14.4 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 C: Contractor Orientation.

15. 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

16. References

- Morgan Hill Municipal Code Chapter 13.20 – Sewers and Industrial Waste
- Sanitary Sewer Overflow and Backup Response Field Guide, 2014, DKF Solutions Group, LLC
- Appendix A: Regulatory Notifications Packet
- Appendix B: Sanitary Sewer Overflow/Backup Response Packet
- Appendix C: Contractor Orientation
- Appendix D: Field Sampling Kit
- Appendix E: Sewer Service Request Form

Appendix A

REGULATORY NOTIFICATIONS PACKET

City of Morgan Hill: Overflow Emergency Response Plan

Regulatory Notifications Packet

Instructions:

1. Receive notification from on-site crew of a Sanitary Sewer Overflow.
2. Open this packet.
3. Refer to the Regulatory Reporting Guide (A-1) for instructions.
4. Use the SSO Reporting Checklist for the appropriate category of spill (A-2a or A-2b) to document that all notifications are made according to the reporting schedule.
5. Send RWQCB Reporting Fax (A-3a or A-3b) if necessary. Determine which RWQCB has jurisdiction by entering the address or GPS coordinates of the SSO location on the State Water Resources Control Board website at the following web address: http://www.waterboards.ca.gov/waterboards_map.shtml.

Contents:

Print on 6”x9” envelope

Reporting Instructions

Deadline	See reverse side for contact information and definitions of the categories of spills of untreated or partially treated wastewater from publically owned sanitary sewer system			Spill from Private Lateral
	Category 1	**Category 2**	**Category 3**	
Within 2 hours after awareness of SSO	If the SSO is greater than or equal to 1,000 gallons, call CalOES at (800) 852-7550 If SSO reaches the Anderson Reservoir, notify the Santa Clara Valley Water District	-	-	-
Immediately (within 2 hours)	If SSO impacts private property that may be due to a failure in the City sewer and/or if the City believes a claim for damages may be submitted against the City contact York Risk Services Group. See Side B for contact information.			
48 Hours after awareness of SSO	If 50,000 gal or more will likely reach receiving waters, begin water quality sampling and initiate impact assessment	-	-	-
3 Days after awareness of SSO	Submit Draft Spill Report in the CIWQS* database	Submit Draft Spill Report in the CIWQS* database	-	Consider reporting via CIWQS
15 Days after response conclusion	Certify Spill Report in CIWQS*. Update as needed until 120 days after SSO end time	Certify Spill Report in the CIWQS* database. Update as needed until 120 days after SSO end time	-	-
30 Days after end of calendar month in which SSO occurred	-	-	Certify Spill Report in the CIWQS* database. Update as needed until 120 days after SSO end time	-
45 days after SSO end date	If 50,000 gal or more were not recovered, submit SSO Technical Report using CIWQS*	-	-	-

* In the event that the CIWQS online SSO database is not available, do the following until the CIWQS online SSO database becomes available: (See contact information on Side B)
    1. Make required notifications to the applicable Regional Water Quality Control Board (RWQCB) using A-3a or A-3b. Determine which RWQCB has jurisdiction by entering the address or GPS coordinates of the SSO location here: http://www.waterboards.ca.gov/waterboards_map.shtml.
    2. Notify the State Water Resources Control Board (SWRCB) by phone or email

Note: For reporting purposes, if one SSO event results in multiple appearance points, complete one SSO report in the CIWQS SSO Online Database, and report the location of the SSO failure point, blockage or location of the flow condition that caused the SSO, in the CIWQS SSO Online Database, including all the discharge points associated with the SSO event.

Contact Information

Contact	Telephone/Fax/Email
CalOES	(800) 852-7550
Santa Clara Valley Water District 24-hour Pollution Hotline	(888) 510-5151
York Risk Services Group	
Cynthia Gordon, Unit Manager	Telephone: (925) 349-3916 Cell: (707) 334-1144
Tiffany Roduit, Claims Examiner	Telephone: (925) 349-3878 Cell: (925) 808-5072
If you do not receive a call back from York within 30 minutes or neither party listed above is available, call: Jill Stallman, Claims Manager	Telephone: (510) 464-7946 Cell: (630) 430-2240
San Francisco Regional Water Quality Control Board (SFRWQCB):	Telephone: (510) 622-2300 Fax: (510) 622-2460
Central Coast Regional Water Quality Control Board (CCRWQCB):	Telephone: (805) 549-3147 Fax: (805) 543-0397
State Water Resources Control Board (SWRCB):	
Permit/Reporting Information: Gil Vazquez	(916) 322-1400 Gil.Vazquez@waterboards.ca.gov
Inspection/Enforcement Information: Jim Fischer	(916) 341-5548 Jim.Fischer@waterboards.ca.gov

Authorized Personnel

The following are authorized to perform regulatory reporting:

Name	Job Title	Telephone	☐ if LRO*
Rich Wake	Senior Utility Worker	(408) 776-7333	
Clint Bryum	Operations Manager	(408) 310-4164	
Tom Neff	Utilities Supervisor	(408) 310-4175	
Dan Repp	Deputy Director of Utilities Services	(408) 310-4166	

Chris Ghione	Interim Director of Engineering and Utility Services	(408) 782-9154	☐

** Legally Responsible Officials (LROs) are authorized to electronically sign and certify SSO reports in CIWQS*

Definitions of SSO Categories

The response crew will complete the SSO Report form in the SSO Packet to document how the category was determined.

Category	Definition
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

Regulatory Notifications Packet

Category 1 SSO Reporting Checklist

A-2a

Use this Checklist for Category 1 SSOs only

STEP 1: Receive call from crew.

STEP 2: 2-hour Notification

If the SSO is greater than or equal to 1,000 gallons, notify CalOES within 2 hours of the time the agency was notified of the SSO.

☐ **Notify CalOES** at (800) 852-7550:

- Date Called: _____
- Time called: _____ : _____ ☐AM ☐PM
- CalOES Control number: _____
- City personnel who called CalOES: *Name* _____
  Title _____
- Individual they spoke to at CalOES: _____

STEP 3: Immediate Notification (within 2 hours)

☐ If SSO impacts private property that may be due to a failure in the City sewer and/or if the City believes a claim for damages may be submitted against the City contact York Risk Services Group.

STEP 4: Within 48 hours after awareness of SSO

☐ Only if 50,000 gallons or more was not recovered, implement Water Quality Monitoring Plan.

STEP 5: Within 3 Days after awareness of SSO

☐ Submit a Draft Spill Report using the CIWQS online reporting database.

STEP 6: Within 15 Days after response conclusion

☐ LRO must certify the Spill Report using the CIWQS online reporting database. Amendments to the Spill Report may be made for up to 120 days following the conclusion of the SSO Response.

STEP 7: Within 45 Days after SSO end date

☐ Within 45 days after the SSO end date, submit an SSO Technical Report using the CIWQS online reporting database only if 50,000 gallons or more was spilled to surface waters.

This form completed by: _____ _____ _____

Name *Title* *Date*

Regulatory Notifications Packet

Category 2 & 3 SSO Reporting Checklist

A-2b

Use this Checklist for Category 2 and 3 SSOs only

STEP 1: Receive call from crew.

STEP 2: Immediate Notification (within 4 hours)

☐ If SSO impacts private property that may be due to a failure in the City sewer and/or if the City believes a claim for damages may be submitted against the City contact York Risk Services Group.

STEP 3: Submit Draft Spill Report (Category 2 only)

☐ Submit a Draft Spill Report using the CIWQS online reporting database within 3 days after awareness of Category 2 SSO.

STEP 4: Certify Spill Report

☐ Certify the Spill Report using the CIWQS online reporting database:

- Category 2 SSO: Within 15 days after the conclusion of the response
- Category 3 SSO: Within 30 days after the end of the calendar month in which the SSO occurred

☐ Updates to the Spill Report may be made for up to 120 days following the conclusion of the SSO Response.

This form completed by: _____ _____ _____

Name *Title* *Date*

San Francisco Regional Water Quality Control Board Notification Fax

NOTE TO City Staff: Only use this form in the event that the CIWQS online SSO database is not available

Determine which RWQCB has jurisdiction by entering the address or GPS coordinates of the SSO location here: http://www.waterboards.ca.gov/waterboards_map.shtml.

FAX TO: **San Francisco Regional Water Quality Control Board*** **Date:** _____

Fax Number: (510) 622-2460 **# Pages:** _____

FROM: City of Morgan Hill

Telephone: (408) 776-7333

Fax: (408) 779-6282

Address of SSO: _____ City: _____

County: _____ Date/Time: _____

SSO Start Time: _____ SSO Stop Time: _____

Volume of SSO: _____ Volume Recovered: _____

Final Disposition: _____

_____

Affected Water Body: _____

Samples Collected? ☐YES ☐NO

Taken to: _____

Crew Members: _____

Agencies Notified	**Number(s)**		**Contact**	**Time**	**Date**
CalOES	(800) 852-7550	☐YES ☐NO	_____	_____	_____
CIQWS		☐YES ☐NO	_____	_____	_____

OTHER: _____

_____

Central Coast Regional Water Quality Control Board Notification Fax

A-3b

NOTE TO City Staff: Only use this form in the event that the CIWQS online SSO database is not available.

Determine which RWQCB has jurisdiction by entering the address or GPS coordinates of the SSO location here: http://www.waterboards.ca.gov/waterboards_map.shtml.

FAX TO: **Central Coast Regional Water Quality Control Board** **Date:** _____

Fax Number: (805) 543-0397 **# Pages:** _____

FROM: City of Morgan Hill

Telephone: (408) 776-7333

Fax: (408) 779-6282

Address of SSO: _____ City: _____

County: _____ Date/Time: _____

SSO Start Time: _____ SSO Stop Time: _____

Volume of SSO: _____ Volume Recovered: _____

Final Disposition: _____

_____

Affected Water Body: _____

Samples Collected? ☐YES ☐NO

Taken to: _____

Crew Members: _____

Agencies Notified	**Number(s)**		**Contact**	**Time**	**Date**
CalOES	(800) 852-7550	☐YES ☐NO	_____	_____	_____
CIQWS		☐YES ☐NO	_____	_____	_____

OTHER: _____

_____

Appendix B

SANITARY SEWER OVERFLOW/BACKUP RESPONSE PACKET

Sanitary Sewer Overflow / Backup Response Packet
Table of Contents

For pre-assembled packets contact DKF Solutions Group at (707) 373-9709 or losscontrol@sbcglobal.net

Sanitary Sewer Overflow/Backup Response Packet

☐ **If this is a Category 1 SSO <u>greater than or equal to 1,000 gallons</u> immediately** contact one of the following to make the 2-hour notification to CalOES:

- Senior Utility Worker (408) 776-7333
- Operations Manager (408) 310-4164
- Utilities Supervisor (408) 310-4175
- Deputy Director of Utility Services (408) 310-4166

☐ **If there is a backup into/onto private property AND possibly due to a problem in the public sewer, contact**:
Cynthia Gordon, Unit Manager at (925) 349-3916 (office) or (707) 334-1144 (cell) OR
Tiffany Roduit, Claims Examiner at (925) 349-3878 (office) or (925) 808-5072 (cell)
If you do not receive a call back from York within 30 minutes or neither party listed above is available, call: Jill Stallman, Claims Manager at (510) 464-7946 (office) or (630) 430-2240 (cell)

☐ **For any media requests:**
Contact the Public information Officer at (408) 310-4706 (office) or (408) 406-4076 (cell)

If you believe that fats, oils and/or grease (FOG) caused/contributed to the SSO, check here ☐ and contact South County Regional Wastewater Authority (SCRWA) Pretreatment at (408) 846-0202

Wastewater Crew:

- ☐ Follow the instructions on the Sanitary Sewer Overflow/Backup Response Flowchart. Note: If there is a backup and multiple dwelling units are affected, use one packet per unit and check here: ☐
- ☐ If indicated on the flowchart, give the customer the Bubbled Toilets Letter and/or the Customer Service Packet and have them initial here:
  Customer acknowledgement of receipt of Bubbled Toilets Letter: _____
  Customer acknowledgement of receipt of Customer Service Packet: _____
- ☐ Place completed forms in this envelope, complete the Chain of Custody record (right) and forward this packet to the Senior Utility Worker.

CHAIN OF CUSTODY

Print Name: _____

Initial: _____

Date: _____

Time: _____

Senior Utility Worker:

- ☐ Review the completed Sanitary Sewer Overflow/Backup Response Packet.
- ☐ Complete the Chain of Custody record (right).
- ☐ Forward this completed packet to the Operations Manager

Print Name: _____

Initial: _____

Date: _____

Time: _____

Operations Manager:

- ☐ Complete the Regulatory Notifications Packet.
- ☐ If there is a backup:
  - ☐ Complete the Claims Submittal Checklist.
  - ☐ Forward this completed packet to the Risk Manager
- ☐ If no backup, file this completed packet in accordance with City policy.

Print Name: _____

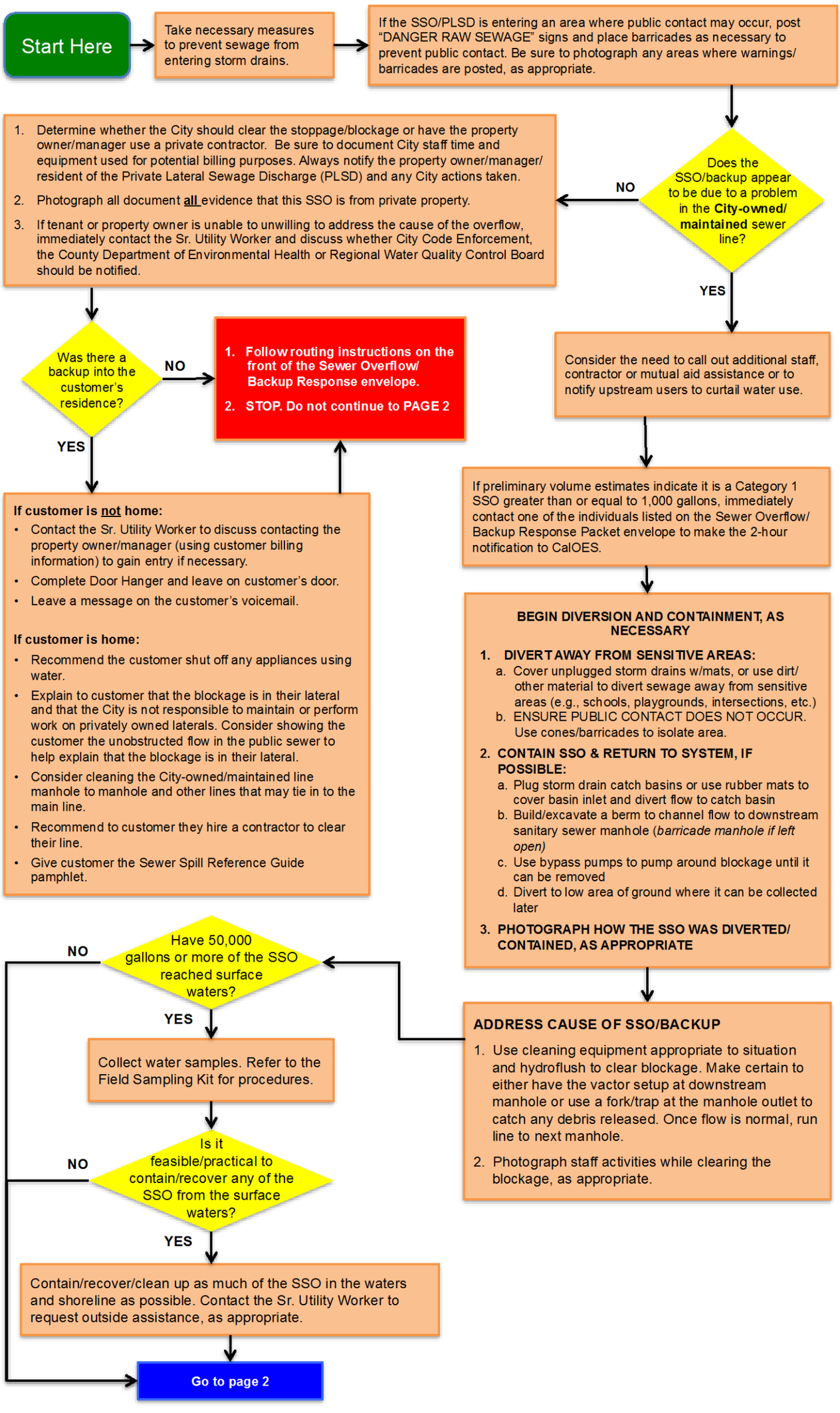
Initial: _____

Date: _____

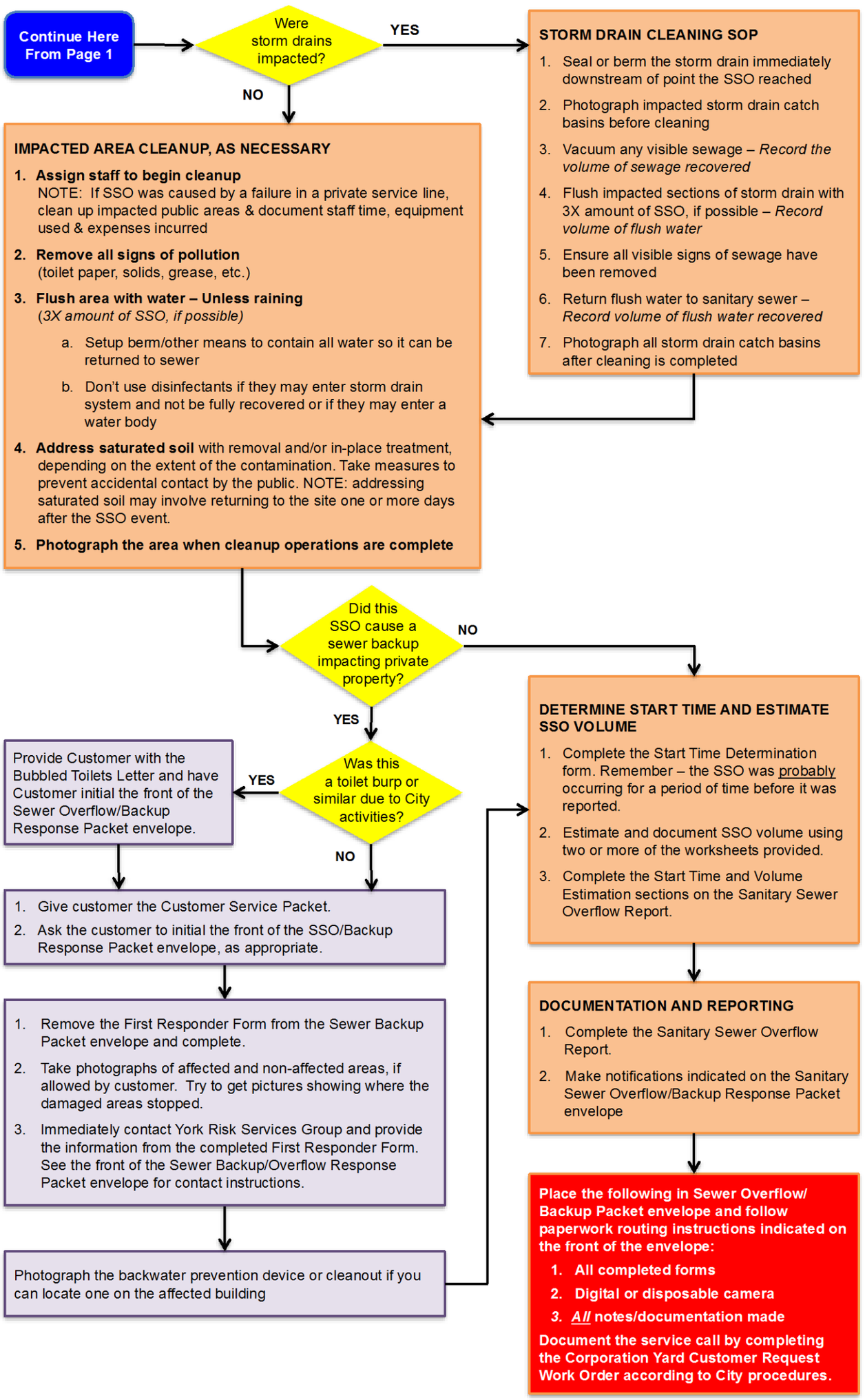
Time: _____

Risk Manager:

Refer to the Claims Submittal Checklist.



Sanitary Sewer Overflow / Backup Response Flowchart **B-1:** Side 2



Sanitary Sewer Overflow / Backup Response Packet

Start Time Determination Form

B-2

SSO Start Date: _____ Location: _____

Accurate start time determination is an essential part of SSO volume estimation. Depending on the flow rate, being even one minute off can have a huge impact on the volume estimation. Be as precise as possible. Do not round to quarter hour increments. Start time must be based on all available information (interviews with neighbors, emergency responders, etc.)

What time was the City notified of the SSO? _____ ☐AM ☐PM

Who notified the City? _____

Did they indicate what time they noticed the SSO? ☐YES ☐NO If yes, what time? _____ ☐AM ☐PM

Who at the City received the notification? _____

What time did the crew arrive at the site of the SSO? _____ ☐AM ☐PM

Who was interviewed regarding the start time of the SSO? Include their name, contact information, and the statement they provided:

Name	Contact Information	Statement

Describe in detail how you determined the start time for this particular SSO:

SSO Start Date: _____ SSO Start Time: _____ ☐AM ☐PM

SSO End Date: _____ SSO End Time: _____ ☐AM ☐PM

SSO Duration: _____ **minutes**

This form completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

Sanitary Sewer Overflow / Backup Response Packet

Volume Estimation: Eyeball Estimation Method

B-3a

Use this method only for small SSOs of less than 200 gallons.

SSO Date: _____ Location: _____

STEP 1: Position yourself so that you have a vantage point where you can see the entire SSO.

STEP 2: Imagine one or more buckets or barrels of water tipped over. Depending on the size of the SSO, select a bucket or barrel size as a frame of reference. It may be necessary to use more than one bucket/barrel size.

STEP 3: Estimate how many of each size bucket or barrel it would take to make an equivalent spill. Enter those numbers in Column A of the row in the table below that corresponds to the bucket/barrel sizes you are using as a frame of reference.

STEP 4: Multiply the number in Column A by the multiplier in Column B. Enter the result in Column C.

	A	B	C
Size of bucket(s) or barrel(s)	**How many of this size?**	**Multiplier**	**Estimated SSO Volume (gallons)**
1 gallon water jug		x 1 gallons	
5 gallon bucket		x 5 gallons	
32 gallon trash can		x 32 gallons	
55 gallon drum		x 55 gallons	
Other: _____ gallons		x _____ gallons	
		Estimated Total SSO Volume:	

STEP 5: Is rainfall a factor in the SSO? ☐ Yes ☐ No

If yes, what volume of the observed spill volume do you estimate is rainfall? _____ gallons

If yes, describe how you determined the amount of rainfall in the observed spill?

STEP 6: Calculate the estimated SSO volume by subtracting the rainfall from the SSO volume:

_____ gallons – _____ gallons = _____ gallons

Estimated SSO Volume Rainfall **Total Estimated SSO Volume**

Do you believe that this method has estimated the entire SSO? ☐ Yes ☐ No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

Note: Refer to form B-4b Page 3 for computation formulas and guides

SSO Date: _____ Location: _____

STEP 1: Describe spill area surface: ☐Asphalt ☐Concrete ☐Dirt ☐Landscape ☐Inside Building

☐Other: _____

STEP 2: Draw/sketch the outline (footprint) of the spill. Then break the footprint down into recognizable shapes. Refer to the example on form B-4b Page 3.

STEP 3: Calculate the area of the footprint by completing the table below for each shape in Step 2. If two shapes overlap, select one of the two shapes and estimate the percentage of that shape that does not overlap. Enter that percentage in the % Not Overlapping column. This will ensure that the overlap area is only counted once. Refer to the example on form B-4b Page 3.

Rectangles	Length	X	Width	X	% Not Overlapping*	=	Area
	ft	X	ft	X	%	=	ft^2
	ft	X	ft	X	%	=	ft^2
	ft	X	ft	X	%	=	ft^2

Triangles	Base	X	Height	Multiplier	X	% Not Overlapping*	=	Area
	ft	X	ft	÷ 2	X	%	=	ft^2
	ft	X	ft	÷ 2	X	%	=	ft^2
	ft	X	ft	÷ 2	X	%	=	ft^2

Circles	π	X	Radius	X	Radius	X	% Not Overlapping*	=	Area
	3.14	X	ft	X	ft	X	%	=	ft^2
	3.14	X	ft	X	ft	X	%	=	ft^2
	3.14	X	ft	X	ft	X	%	=	ft^2

Total Spill Area (sum of all three tables above): _____ ft^2

STEP 4: Calculate the volume of the spill that **was NOT absorbed** into the ground. If the entire spill was absorbed, skip to Step 5.

a. If spill is of varying depths, take several measurements at different depths and find the average.

_____ inches	÷	_____	=	_____ inches	÷	12	=	_____ feet
sum of measurements		# of measurements		average depth in inches				average depth in feet of ponded sewage

b. Calculate spill volume of ponded sewage in cubic feet by multiplying the Total Spill Area in Step 3 by the average depth calculated in Step 4a. Convert from cubic feet to gallons by multiplying by 7.48.

_____ ft^2	x	_____ ft	=	_____ ft^3	x	7.48 gal	=	_____ gallons
spill area (Step 3)		average depth (Step 4a)		spill volume in cubic feet				estimated volume of ponded sewage

STEP 5: Calculate the volume of the spill that **was absorbed** into the ground. If only a wet stain is observed, use the guidelines on B-4b Page 3 for the average depth. When estimating the volume that was absorbed, take into consideration:

- How long the sewage has been sitting
- The air temperature on the day of the SSO
- Soil type for the area (e.g., hard-packed clay vs. loose or gravely soil)

When estimating the volume of the spill that was absorbed into the ground, it is also advisable to dig down far enough to reach dry soil and take the depth of the wet soil into consideration.

Estimated volume that was absorbed into the soil: _____ gallons
Explain how this estimation was determined:

STEP 6: Add the volume not absorbed (Step 4) plus the volume absorbed (Step 5) to get the total estimated volume:

_____ gallons	+	_____ gallons	=	_____ gallons
volume not absorbed		volume absorbed		**Total Estimated Spill Volume**

Do you believe that this method has estimated the entire SSO? ☐ Yes ☐ No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

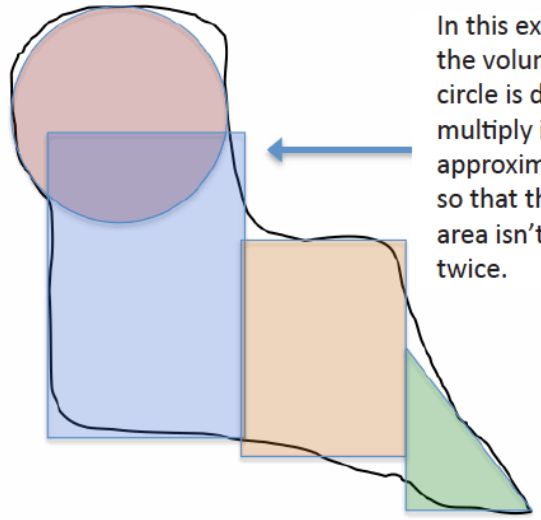
Job Title: _____ Date: _____

Miscellaneous Computations

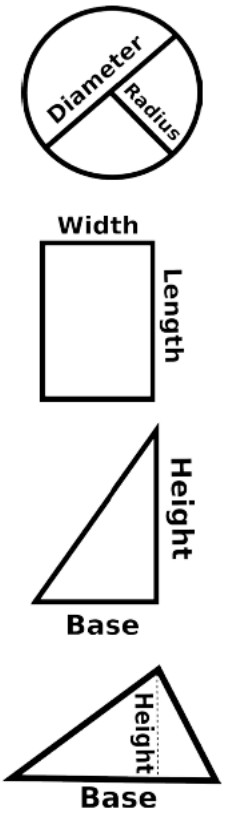
To convert inches to feet	Divide the inches by 12 or use the chart on the bottom right of this page.
Volume of one cubic foot	7.48 gallons of water
Area: Two-dimensional measurement represented in square feet	Square/rectangle: Area = Length x Width Circle: Area = πr^2 (where $\pi \approx 3.14$ and r = radius = ½ diameter) Triangle: Area = ½ (Base x Height)
Volume: Three-dimensional measurement represented in cubic feet	Rectangle/square footprint: Volume = Length x Width x Depth Circle footprint (cylinder): Volume = πr^2 x Depth (where $\pi \approx 3.14$ and r = radius = ½ diameter) Triangle footprint: Volume = ½ (Base x Height) x Depth
Depth: Contained or "Ponded" sewage	Measure actual depth of standing sewage whenever possible. When depth varies, measure several representative sample points and determine the average. Add the depth of the sample points and then divide that total by the number of sample points. If the depth is not measurable because it is only a wet stain, consider using the following estimated depths: • Depth of a wet stain on concrete surface: 0.0026' (1/32") • Depth of a wet stain on asphalt surface: 0.0013' (1/64")

Example of how to draw/sketch the outline (footprint) of the spill for Step 2:

1. Sketch the outline of the spill (black line).
2. Break the sketch down into recognizable shapes (circles, squares, etc.) as well as you can.



In this example, after the volume of the circle is determined, multiply it by approximately 65% so that the overlap area isn't counted twice.



Convert Inches to Feet	
Inches	**Feet**
1/8"	0.01'
1/4"	0.02'
3/8"	0.03'
1/2"	0.04'
5/8"	0.05'
3/4"	0.06'
7/8"	0.07'
1"	0.08'
2"	0.17'
3"	0.25'
4"	0.33'
5"	0.42'
6"	0.50'
7"	0.58'
8"	0.67'
9"	0.75'
10"	0.83'
11"	0.92'
12"	1.00'

Sanitary Sewer Overflow / Backup Response Packet

Volume Estimation: Upstream Lateral Connections Method

B-3c

SSO Date: _____ Location: _____

STEP 1: Determine the number of Equivalent Dwelling Units (EDUs) for this SSO: _____ EDUs

NOTE: A single-family residential home = 1 EDU. For commercial buildings, refer to agency documentation.

STEP 2: This volume estimation method utilizes daily usage data based on flow rate studies of several jurisdictions in California. Column A shows how an average daily of usage of 180 gallons per day is distributed during each 6-hour period. Adjust the table as necessary to accurately represent the actual data.

Complete Column E by entering the number of minutes the SSO was active during each 6-hour time period. Multiply column D times Column E to calculate the gallons spilled during each time period. Add the numbers in Column F together for the Total Estimated SSO Volume per EDU.

	Flow Rate Per EDU				**SSO**	
	A	**B**	**C**	**D**	**E**	**F**
Time Period	Gallons per	Hours per	A ÷ B = Gallons	C ÷ 60 = Gallons	Minutes SSO was	D × E = Gallons spilled

	Period	period	per Hour	per Minute	active during period	per period
6am-noon	72	6	12	0.20		
noon-6pm	36	6	6	0.10		
6pm-midnight	54	6	9	0.15		
midnight-6am	18	6	3	0.05		
Total Estimated SSO Volume per EDU:						

STEP 3: Multiply the Estimated SSO Volume per EDU from Step 2 by the number of EDUs from Step 1.

_____ gallons X _____ = _____ gallons

Volume per EDU # of EDUs Estimated SSO Volume

STEP 4: Adjust SSO volume as necessary considering other factors, such as activity that would cause a fluctuating flow rate (doing laundry, taking showers, etc.). Explain rationale below and indicate adjusted SSO estimate (attach a separate page if necessary):

Estimated SSO Volume: _____ gallons

D you believe that this method has estimated the entire SSO? ☐ Yes ☐ No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

Sanitary Sewer Overflow / Backup Response Packet

Sanitary Sewer Overflow Report

B-4
Side 1

Spill Category *(check one*):

- ☐ Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either (1) Reaches surface water and/or drainage channel tributary to a surface water; OR (2) 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 (1) Does not reach surface water, a drainage channel, or an MS4, OR (2) 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
- ☐ Spill from Private Lateral

Describe in detail the basis for choosing the spill category:

☐ **IMMEDIATE NOTIFICATION: If this is a Category 1 spill greater than or equal to 1,000 gallons, contact CalOES within 2 hours at (800) 852-7550 .**

A. SPILL LOCATION

Spill Location Name:

Latitude Coordinates*: Longitude Coordinates:

Based on the coordinates, which Regional Water Quality Control Board has jurisdiction? ☐ San Francisco ☐ Central Coast

To determine which RWQCB has jurisdiction by entering the address or GPS coordinates of the SSO location on the State Water Resources Control Board website at the following web address: http://www.waterboards.ca.gov/waterboards_map.shtml.

Street Name and Number:

Nearest Cross Street: City: Zip Code:

County: Spill Location Description:

B. SPILL DESCRIPTION

Spill Appearance Point (check one or more): ☐ Building/Structure ☐ Force Main ☐ Gravity Sewer ☐Pump Station ☐Other Sewer System Structure *(i.e. cleanout)* ☐ Manhole- Structure ID#: ☐ Other *(specify):*

Did the spill reach a drainage channel and/or surface water? ☐ Yes (*Category 1)* ☐No

If the spill reached a storm sewer, was it fully captured and returned to the Sanitary Sewer? ☐ Yes ☐No (*Category 1)*

Was this spill from a private lateral? ☐ Yes ☐No If YES, name of responsible party:

Discharged into: ☐Ocean/ocean beach ☐Waters of the state other than ocean ☐Drainage channel ☐Combined storm drain
☐Separate storm drain ☐Paved surface ☐Unpaved surface ☐Building/structure ☐Street/curb/gutter

* If multiple appearance points, use the GPS coordinates for the location of the SSO appearance point closest to the failure point/blockage.

☐Other: Provide name(s) of affected drainage channels, beach, etc.:			
Total Estimated spill volume *(in gallons – 1,000gal or more = Category 1)*:			gallons
Est. volume that reached a separate storm drain that flows to a surface water body:	gal	Recovered:	gal
Est. volume that reached a drainage channel that flows to a surface water body:	gal	Recovered:	gal
Est. volume discharged directly to a surface water body:	gal	Recovered:	gal
Est. volume discharged to land:	gal	Recovered:	gal
Calculation Methods: ☐Eyeball ☐Photo Comparison ☐Upstream Connections ☐Area/Volume ☐Lower Lateral ☐Other (describe):			
NOTE: Attach all Spill Volume Estimation documentation including calculations and summary.			

C. SPILL OCCURRING TIME

Estimated spill start date:	Estimated spill start time:
Date spill reported to sewer crew:	Time spill reported to sewer crew:
Date sewer crew arrived:	Time sewer crew arrived:
Who was interviewed to help determine start time?	
Estimated spill end date:	Estimated spill end time:
NOTE: Attach detailed start time determination documentation.	

D. CAUSE OF SPILL

Location of Blockage: ☐ Main ☐ Lateral ☐Private Lateral ☐ Other:

SSO cause *(check all that apply)*: ☐ Debris/Blockage ☐ Flow exceeded capacity ☐Grease ☐ Operator error ☐ Roots

☐ Pipe problem/failure ☐ Pump station failure ☐ Rainfall exceeded design ☐ Vandalism ☐ Inflow/infiltration

☐ Animal carcass ☐ Electrical power failure ☐ Bypass ☐ Debris from laterals ☐ Construction Debris

☐ Other (specify):

Diameter (in inches) of pipe at point of blockage/spill cause (if applicable):

Sewer pipe material at point of blockage/spill cause (if applicable):

Estimated age of sewer asset at the point of blockage or failure (if applicable):

Description of terrain surrounding point of blockage/spill cause: ☐ Flat ☐ Mixed ☐ Steep

E. SPILL RESPONSE

Spill response activities (check all that apply): ☐ Cleaned up ☐ Contained all/portion of spill ☐ TV inspection ☐ Restored flow

☐ Returned all/portion of spill to sanitary sewer ☐Other (specify):

Spill response completed (date & time):

Visual inspection result of impacted waters (if applicable):

Any fish killed? ☐ Yes ☐ No Any ongoing investigation? ☐ Yes ☐ No

Were health warnings posted? ☐ Yes ☐ No If yes, provide health warning/beach closure posting/details:

Was there a beach closure? ☐ Yes ☐ No If yes, name of closed beach(es):

Were samples of impacted waters collected? ☐ Yes ☐ No

If YES, select the analyses: ☐ DO ☐ Ammonia ☐ Bacteria ☐ pH ☐ Temperature ☐ Other:

Recommended corrective actions: (check all that apply and provide detail)

☐ Clean line again ASAP:

☐ CCTV (send results to Pretreatment if SSO is FOG related):

☐ Re-CCTV (send results to Pretreatment if SSO is FOG related):

☐ Additional work:

☐ Cleaning schedule change:

☐ Increase cleaning frequency on trouble spot list until issue is resolved/under control. Coordinate with Pretreatment prior to removing from elevated cleaning frequency (check this item if SSO is FOG related)

☐ Cleaning method change:

☐ Fog investigation:

☐ Repair line segment:

☐ Replace line segment:

☐ Additional comments:

List all agency personnel involved in the response including name, title and their role in the response:

Name	Title	Role

F. NOTIFICATION DETAILS

CalOES contacted date and time (if applicable): CalOES Control Number (if applicable): Spoke to:

G. RECOMMENDED FOLLOW-UP ACTIONS TO PREVENT FUTURE OCCURRENCES	
CURRENT PM FREQUENCY:	DATE OF LAST PM:
RECOMMENDED ACTIONS: ☐ TV ☐ RE-RUN ☐ CHANGE CLEANING SCHEDULE ☐ REPAIR LINE SEGMENT ☐ REPLACE LINE SEGMENT ☐ OTHER (describe):	
NOTES:	

Place completed form in Sanitary Sewer Overflow/Backup Packet Envelope and follow routing instructions.

Sanitary Sewer Overflow / Backup Response Packet

Corporation Yard Customer Request Work Order

B-5

ROUTE TO	PRIORITY	DISPATCHED: DATE/TIME:	SOURCE OF REQUEST

DATE/TIME TAKEN: **PERSON TAKING REQUEST:**

CUSTOMER NAME: **PHONE: (H)**

ADDRESS: **(W)**

SERVICE LOCATION:

NEAREST CROSS STREET:

COMPLAINT:

***SPECIAL REQUEST/OTHER – SEE INFORMATION BELOW**

FOR OFFICE USE ONLY

DESCRIPTION:

DESCRIPTION OF WORK DONE **FINDINGS AND CORRECTIONS**

JOB INFORMATION

LIST INDIVIDUALS WORKING ON JOB	START DATE/TIME	COMPLETED DATE/TIME	# OF HOURS

CUSTOMER TO BE BILLED: ☐ **(IF CHECKED, ATTACH COPY OF CHARGE FORM)**

CUSTOMER CONTACTED: ☐ **DATE/TIME:** **BY:**

DOOR HANGER: ☐

EMPLOYEE COMPLETING REPORT: **DATE/TIME ARRIVED AT JOB:**

REVIEWED BY SUPERVISOR: **DATE/TIME JOB COMPLETED:**

Dear City of Morgan Hill Customer,

Thank you for informing us that your toilet bubbled while our crews were working in proximity of your property. We apologize for the inconvenience and hope that this letter will answer some of your questions about bubbling toilets.

1. **Is this a health risk?**
   The water that came out of your toilet is potable water from the toilet bowl. Unless your toilet was in use when this occurred, this water is no different than that encountered while cleaning your toilet.

2. **What is the City doing in the street?**
   In order to insure reliable sewer service, the City inspects, cleans, and repairs its sewer system on a continuous basis.

3. **How does sewer cleaning cause my toilet to bubble?**
   Typical industry cleaning equipment uses high-pressure water to clean sewers. The first step is to use the high-pressure water jets to propel the hose and cleaning nozzle upstream as far as 800 feet. During this process, air within the main pipe is displaced and sometimes goes up the private lateral pipe and releases though the toilet. This can also happen during the cleaning phase, when high-pressure water is pulled downstream to the cleaning truck.

4. **What causes the air to come from my toilet?**
   Over the years, City crews have found that the bubbling of toilets have many causes, some of which are:
   - Obstructed vent pipes;
   - Vent pipes that are positioned too far from the toilet;
   - Lateral pipes that may be in use as the crew is cleaning (e.g. draining washing machine, draining bathtub, etc.);
   - Lateral pipes that may have obstructions that are causing them to hold water (e.g. roots, grease, etc.).

5. **What does City staff do, once informed of a bubbling toilet?**
   Once notified of a bubbling toilet, the crew leader explains to the customer what has happened, and checks to see if there is a clean-out in the customer's yard that could be opened in the future during cleaning. The crew leader then makes notes and completes paperwork that puts the address on the City's computerized notification list. In the future, crews will notice that this address was "bubbled" at one time, and, before commencing the cleaning, they will notify the occupant of the possibility of bubbling toilets. In the event the occupant is not present when the cleaning begins, the crews will attempt to open clean-outs and/or lower water pressure to avoid bubbling.

6. **What can I do to prevent my toilet from bubbling?**
   When a sewer begins to drain slowly, it may be a sign that it needs to be cleaned or repaired. Trees and shrubs may have root structures that are entering the lateral pipe. The homeowner needs to make sure to have a clean-out for accessing the line. It is the homeowner's responsibility to keep the sewer lateral pipe in good working condition.

It is always a good idea to keep the toilet lid down when not in use, and not install carpets in the bathroom unless they can be easily removed and cleaned. For more information please call the Senior Utility Worker at (408) 776-7333.

Sincerely,

City of Morgan Hill

Paquete de respuesta ante desborde / obstrucción del alcantarillado sanitario

Carta sobre inodoros que burbujean

B-6
ESPAÑOL

Estimado cliente de la ciudad de Morgan Hill:

Gracias por informarnos que su inodoro burbujeó mientras nuestros equipos trabajaban en las cercanías de su propiedad. Pedimos disculpas por las molestias y esperamos que esta carta responda algunas de sus preguntas sobre los inodoros que burbujean.

1. **¿Es un riesgo para la salud?**
   El agua que salió de su inodoro es agua potable de la taza del inodoro. A menos que el inodoro haya estado en uso cuando esto sucedió, esta agua no es diferente a la que se encuentra cuando limpia el inodoro.

2. **¿Qué realiza la Ciudad en la calle?**
   A fin de asegurar un servicio de alcantarillado confiable, la Ciudad inspecciona, limpia y repara el sistema de alcantarillado de manera continua.

3. **¿De qué manera la limpieza del alcantarillado provoca que mi inodoro burbujee?**
   El equipo industrial típico de limpieza utiliza agua a alta presión para limpiar el alcantarillado. El primer paso es utilizar el chorro de agua a alta presión para impulsar la manguera y la boquilla de limpieza contracorriente con un alcance de hasta 243,8 m (800 pies). Durante este proceso, el aire dentro de la tubería principal se desplaza y algunas veces sube por la tubería lateral privada y se libera a través del inodoro. Esto también puede ocurrir durante la fase de limpieza, cuando el agua a alta presión se arrastra aguas abajo hasta el camión de limpieza.

4. **¿Qué provoca que el aire se libere por mi inodoro?**
   A través de los años, los equipos de la Ciudad descubrieron que el burbujeo de los inodoros ocurre debido a varias causas, entre las cuales encontramos las siguientes:
   - tubos de ventilación obstruidos;
   - tubos de ventilación que se colocan demasiado lejos del inodoro;
   - tuberías laterales que pueden estar en uso mientras el equipo realiza la limpieza (por ejemplo, el drenaje de la lavadora, el drenaje de la bañera, etc.);
   - tuberías laterales que pueden tener obstrucciones que hacen contener el agua (por ejemplo, raíces, grasa, etc.).

5. **¿Qué hace el personal de la Ciudad una vez que se le informa de un inodoro que burbujea?**
   Una vez que se notifica un inodoro que burbujea, el líder del equipo le explica al cliente lo que ha sucedido y comprueba si hay un registro de alcantarillado en el patio del cliente que podría abrirse en limpiezas futuras. Luego, el líder del equipo toma notas y completa documentación para incluir la dirección en la lista automatizada de notificaciones de la Ciudad. En el futuro, los equipos notarán que en esta dirección hubo "burbujeos" en un momento y, antes de comenzar la limpieza, notificará al ocupante acerca de la posibilidad de que burbujeen los inodoros. En caso de que el ocupante no esté presente cuando la limpieza se inicia, los equipos intentarán abrir los registros de alcantarillado y bajar la presión del agua para evitar el burbujeo.

6. **¿Qué puedo hacer para evitar que mi inodoro burbujee?**
   Cuando un alcantarillado comienza a drenar lentamente, puede ser un signo de que es necesario limpiarlo o repararlo. Los árboles y arbustos pueden tener estructuras de raíz que entren en la tubería lateral. El propietario debe asegurarse de tener un registro de alcantarillado para acceder a la línea. Es responsabilidad del dueño de casa mantener la tubería lateral de la alcantarilla en buen funcionamiento.

Siempre es una buena idea mantener la tapa del inodoro baja cuando no está en uso y no instalar alfombras en el baño a menos que puedan quitarse y limpiarse con facilidad. Para obtener más información, comuníquese con el Trabajador de Servicios Públicos Senior (408) 776-7333.

Atentamente,

Ciudad de Morgan Hill

Sanitary Sewer Overflow / Backup Response Packet
First Responder Form

Fill out this form as completely as possible.
Ask customer if you may enter the home. If so, take photos of all damaged and undamaged areas.

PERSON COMPLETING THIS FORM: Name: _____ Title: _____	PHONE: DATE: TIME:
TIME STAFF ARRIVED ON-SITE:	
DOES THE CUSTOMER WANT THE CITY TO CALL A CLEANING CONTRACTOR? ☐ Yes ☐ No IF NO, complete the Declination of Sewage Cleaning Services form. DID CUSTOMER CALL CLEANING CONTRACTOR? ☐ Yes ☐ No If YES, name of contractor:	
RESIDENT NAME: ☐ Owner ☐ Renter	IF RENT, PROPERTY MANAGER(S): OWNER:
STREET ADDRESS: CITY, STATE AND ZIP: PHONE:	STREET ADDRESS: CITY, STATE AND ZIP: PHONE:
Is nearest upstream manhole visibly higher than the drain/fixture that overflowed? ☐ Yes ☐ No	
# OF PEOPLE LIVING AT RESIDENCE:	

Approximate Age of Home:	# of Bathrooms:	# of Rooms Affected:
Approximate Amount of Spill (gallons):	Approximate Time Sewage Has Been Sitting (hrs/days):	

Numbers of Photographs or Videos Taken: ☐ Photographs ☐ Video	Where are photos/video stored?

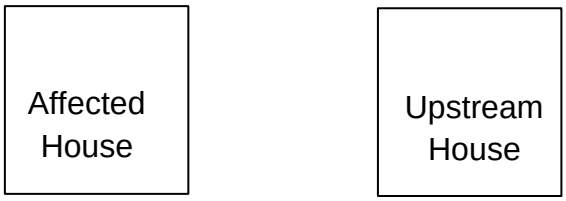
Does property have a Property Line Cleanout or BPD?	☐ YES ☐ NO ☐ Unknown
If yes, was the Property Line Cleanout/BPD operational at the time of the overflow?	☐ YES ☐ NO ☐ Unknown
Have there ever been any previous spills at this location?	☐ YES ☐ NO ☐ Unknown
Has the resident had any plumbing work done recently?	☐ YES ☐ NO
If YES, please describe:	

GO TO PAGE 2

SANITARY SEWER LINE BLOCKAGE LOCATION

PLEASE CHECK THE BOXES THAT DESCRIBE YOUR OBSERVATIONS:	
Customer Cleanout Was:	Public Cleanout was:
☐ Non-Existent ☐ Full ☐ Empty	☐ Non-Existent ☐ Full ☐ Empty

On the diagram below, indicate the location of the sewer line and where the problem occurred.



Did sewage go under buildings? ☐Yes ☐No ☐Unsure

Recommended Follow-Up Action(s):

Place completed form in Sewer Backup/Overflow Response Envelope and follow routing instructions

Sanitary Sewer Overflow / Backup Response Packet

Claims Submittal Checklist

B-8

Complete this form if there is a Sanitary Sewer Backup into/onto Private Property

Operations Manager or Designee

1. **Complete the following information:**

   Title: _____

   Name: _____

   Phone: _____

   Today's Date: _____

2. **Copy the items listed below and retain originals for internal archiving purposes.**

3. **Place the copies in the Backup Response Envelope and forward to the Risk Manager:**

   - ☐ **Form B-2: Start Time Determination Form**
   - ☐ **Form B-3: Volume Estimation Forms (a, b and/or c)**
   - ☐ **Form B-4: Sanitary Sewer Overflow Report**
   - ☐ **Form B-5: Customer Request Work Order**
   - ☐ **Form B-7: First Responder Form**
   - ☐ **Form B-8: Claims Submittal Checklist** *(this form)*
   - ☐ **All photos taken: Check here if digital photographs will be forwarded separately** ☐
   - ☐ **Any other information you feel is important in this claim**

4. **Go to Regulatory Notifications Packet and make all appropriate notifications.**

5. **Complete Form BP-9: Collection System Failure Analysis**

Risk Manager or Designee

1. **Verify claims packet is complete.**
2. **Notify York Risk Services Group**

   York Risk Services Group

   1390 Willow Pass Road, Suite 400

   Concord, CA 94520

Tiffany Roduit, Claims Specialist

Tiffany.Roduit@YorkRSG.com

(925) 349-3878 office

(925) 808-5072 cell

Collection System Failure Analysis

To be completed by the Operations Manager or Designee

NOTE: The information contained on this form may be confidential.

Incident Report #		Prepared By	
SSO/Backup Information			
Event Date/Time	Address		
Volume Spilled	Volume Recovered		
Cause			
Summary of Historical SSOs/Backups/Service Calls/Other Problems			
Date	Cause	Date Last Cleaned	Crew
Records Reviewed By:		Record Review Date:	
Summary of CCTV Information			
CCTV Inspection Date		Tape Name/Number	
CCTV Tape Reviewed By		CCTV Review Date	

Observations

Go to Page 2

Recommendations					
☐	Type	Specific Actions	Who is Responsible?	Completion Deadline	Who Will Verify Completion?
	No Changes or Repairs Required	n/a	n/a	n/a	n/a
	Repair(s)				
	Construction				
	Capital Improvement(s)				
	Change(s) to Maintenance Procedures				
	Change(s) to Overflow Response Procedures				
	Training				
	Misc.				

Comments/Notes:	
Supervisor Review Date	Superintendent Review Date

City of Morgan Hill CA

Overflow Emergency Response Plan

Customer Service Packet

Form	Form Number
Customer Information Letter	CS-1
Claim Form	-2
Sewer Spill Reference Guide	pamphlet

Instructions:

1. Review the Customer Information letter to determine actions that need to be taken immediately.
2. See the Customer Information letter for information about filing a claim.
3. Review the Sewer Spill Reference Guide pamphlet.

If you have any questions contact:

- Regarding sewer issues: Senior Utility Worker (408) 776-7333
- To obtain a claim form: City Clerk (408) 779-7259
- Regarding claim issues: City Risk Manager (408) 779-7271

This packet provided by: _____

Phone: _____

Paquete de servicio al cliente

Formulario	Número de formulario
Carta de información para el cliente	CS-1
Formulario de reclamación	-2

Print on 6” x 9” envelope

Guía de referencia en caso de desborde del alcantarillado ..... folleto

Instrucciones:

1. Revise la carta de información para el cliente para determinar qué medidas deben tomarse inmediatamente.
2. Consulte la carta de información para el cliente sobre cómo presentar una reclamación.
3. Revise el folleto de la Guía de referencia en caso de desborde del alcantarillado.

Si tiene alguna consulta, comuníquese con las siguientes entidades:

- Para los problemas relacionados con el alcantarillado, comuníquese con el Trabajador de Servicios Públicos Senior: (408) 776-7333
- Para obtener un formulario de reclamación, comuníquese con el Secretario de la Ciudad: (408) 779-7259
- Para los problemas relacionados con las reclamaciones, comuníquese con el Gerente de Riesgo de la Ciudad: (408) 779-7271

Este paquete proporcionado por: _____

Teléfono: _____

Print on 6” x 9” envelope

Sanitary Sewer Overflow / Backup Response Packet

Customer Information Regarding Sewer Backup Claims

CS-1
English

Dear Property Owner:

We recognize that sewer back flow incidents can be stressful. The City has prepared this brief set of instructions to help you minimize the impact of the loss by responding promptly to the situation.

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

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

Restoration Company	Location	Contact
American Technologies, Inc. (ATI)	25000 Industrial Blvd, Hayward, CA 94545	(510) 429-5000
Anderson Group International	Bay Area Service Center	(800) 994-7575
Britannia Cal Pacific	255 S Maple Ave, SSF, CA 94080	(650) 742-6490
Complete Drying	751 Laurel St #538, San Carlos, CA 94070	(650) 591-1599
Ideal Drying	1499 Evans Avenue, San Francisco, CA 94124	(800) 379-6881
Montgomery Sansom Ltd.	PO Box 2585, South San Francisco, CA 94083	(650) 777-9010
Restoration Management	6210 Goodyear Road, Benicia, CA 94510	(800) 400-5058 / (707) 750-6320
Restoration Management	4142 Point Eden Way, Hayward, CA 94501	(800) 400-5058 / (510) 315-5400
Service Master	Bay Area Regional Response Center	Ryon Hayward Cell (925) 330-3360 (888) 259-2244
Servpro	PO Box 422, San Carlos, CA 94070	(800) 737-8776 / (650) 591-4137
JM Environmental	PO Box 2189 Granite Bay, CA 95746 (no charge for travel time to Bay Area)	(916) 726-0304

***** This list is provided as a **resource only** and is not to be construed as exclusive, comprehensive or limiting in any way. The City does not require or mandate the use of any of the listed firms. Qualified remediation contractors can be found in the Yellow Pages under "Water Damage Restoration" or "Fire & Water Damage Restoration.

What you need to do now:

- Contact a restoration company for clean up and removal of affected surfaces.
- Do not attempt to clean the area yourself, let the company you hire handle this.

- Keep people and pets away from the affected area(s).
- Turn off heating/air conditioning systems.
- Turn off any appliances that use water.
- Prevent any material from reaching floor vents to prevent contamination.
- Do not remove items from the area –the company you hire will handle these contents.
- If you had recent plumbing work, contact your plumber or contractor.
- Contact your homeowner's insurance carrier to report a claim.
- File a claim with the City Clerk at 17575 Peak Avenue, Morgan Hill, CA 95037 as soon as practical. The California Government Code, Sections 900 -960, requires filing a written claim and outlines specific time lines and notice procedures that must be used.
- Call the City's Claims Administrator and provide a number where you can be reached:
  York Risk Services Group, Tiffany Roduit, Claims Specialist, (925) 349-3878.

Important Legal Notice: For your protection, read carefully, obtain a reliable translation, and/or consult your attorney.

Ciudad de Morgan Hill: Desbordamiento del Plan de Respuesta a Emergencias

Paquete informativo de la respuesta ante desbordes

Información del cliente sobre reclamos por desbordes cloacales

CS-1
Spanish

Estimado Propietario:

Somos conscientes de que los incidentes de alcantarillado de flujo puede ser estresante. La ciudad ha preparado este breve conjunto de instrucciones que le ayudarán a minimizar el impacto de la pérdida por responder rápidamente a la situación.

La Ciudad no es responsable de los gastos de limpieza y daños causados por los bloqueos en línea de la alcantarilla del propietario del inmueble o causados por violaciónes de código. En este momento, la Ciudad está investigando la causa de la pérdida y no asume responsabilidad por los daños y perjuicios. Sin embargo, si nuestra investigación determina la Ciudad es responsable de este incidente, los gastos incurridos para la limpieza razonable y necesario se incluirán en la liquidación de su reclamo. Independientemente de si o de la Ciudad es responsable de la pérdida, es a usted para organizar la reparación de su propiedad y que presente una reclamación para su consideración.

Usted o el dueño de la propiedad debe inmediatamente ponerse en contacto con una empresa para la limpieza de las zonas afectadas. Si usted no sabe de una empresa de solicitar un servicio, las siguientes 24 horas, empresas de restauración de emergencia están disponibles para responder:*

Restoration Company	Location	Contact
American Technologies, Inc. (ATI)	25000 Industrial Blvd, Hayward, CA 94545	(510) 429-5000
Anderson Group International	Bay Area Service Center	(800) 994-7575
Britannia Cal Pacific	255 S Maple Ave, SSF, CA 94080	(650) 742-6490
Complete Drying	751 Laurel St #538, San Carlos, CA 94070	(650) 591-1599
Ideal Drying	1499 Evans Avenue, San Francisco, CA 94124	(800) 379-6881
Montgomery Sansom Ltd.	PO Box 2585, South San Francisco, CA 94083	(650) 777-9010
Restoration Management	6210 Goodyear Road, Benicia, CA 94510	(800) 400-5058 / (707) 750-6320
Restoration Management	4142 Point Eden Way, Hayward, CA 94501	(800) 400-5058 / (510) 315-5400
Service Master	Bay Area Regional Response Center	Ryon Hayward Cell (925) 330-3360 (888) 259-2244
Servpro	PO Box 422, San Carlos, CA 94070	(800) 737-8776 / (650) 591-4137
JM Environmental	PO Box 2189 Granite Bay, CA 95746 (no charge for travel time to Bay Area)	(916) 726-0304

* Esta lista se proporciona como un único recurso. La ciudad no necesita ni aprueba el uso de cualquiera de estas empresas. Esta lista no debe ser interpretado como exclusiva, completa o limitar de ninguna manera. Contratistas calificados se pueden encontrar en las páginas amarillas bajo "Restauración de daños causados agua" o "Fuego y Agua Restauración de daños causados". Sin embargo, asegúrese de contratar a una empresa con experiencia en las copias de seguridad de drenaje y los recursos suficientes para hacer el trabajo rápidamente.

Lo que necesita saber en este momento:

- Póngase en contacto con una empresa de restauración para la limpieza y eliminación de las superficies afectadas.

- No intente limpiar el área, deje que la empresa de contratar a manejar esto.
- Mantenga a las personas ya las mascotas alejados de la zona afectada (s).
- Apague la calefacción / aire acondicionado.
- Apague todos los electrodomésticos que utilicen agua.
- Evite que el material alcance respiraderos del piso para evitar la contaminación.
- No quitar elementos de la zona-la empresa que se encargará de contratar a estos contenidos.
- Si ha tenido el trabajo de plomería reciente, póngase en contacto con un plomero o contratista.
- Póngase en contacto con soporte de su seguro de propietario para presentar una reclamación.
- Presentar una reclamación ante el Secretario Municipal en 17575 Peak Avenue, Morgan Hill, CA 95037 tan pronto como sea posible. El Código de Gobierno de California, Secciones 900 -960, requiere la presentación de una reclamación por escrito y se esbozan líneas de tiempo específicos y los procedimientos de notificación que deben ser utilizados.
- Llame al Administrador de la Ciudad de Reclamaciones y proporcionar un número de teléfono donde se puede llegar: York Risk Services Group (York Grupo de Servicios de Riesgos) Tiffany Roduit en (952) 349-3878.

Aviso legal importante: Para su protección, lea atentamente el material, obtenga una traducción confiable y/o hable con su abogado.

INSERT CLAIM FORM HERE

INSERT PAMPHLET HERE

Overflow Emergency Response Plan

Public Posting

DANGER

RAW SEWAGE ● AVOID CONTACT

AGUA CONTAMINADA ● EVITE TODO CONTACTO

City of Morgan Hill

Business Hours:
(408) 776-7333

After hours and on weekends:

INSERT DOOR HANGER HERE

Appendix C

FIELD SAMPLING KIT

Field Sampling Kit
Table of Contents

The Field Sampling Kit contains:

Item	Units
Small ice chest (can be used to store the kit items)	1
125ml Total Coliform Sampling Bottle preserved with Na2S2O3	3
Ammonia-Nitrogen Sample Bottle (1-liter plastic bottle preserved with H2SO4)	3
Unpreserved 1-liter plastic bottle	3
Pair of Gloves – *check for holes*	2
Pair of Safety glasses	1
Sample Bottle Label	6
Gallon size Ziploc bag	3-4
Chain of Custody Form	1
Instant Cold Pack	5
Standard Operating Procedure	1
Waterproof Pen (*Sharpie)*	1

Field Sampling Kit
Procedures for Sampling Receiving Waters and Posting Warnings after a Sewage Spill

C-1
Side A

Get Field Sampling Kit

Chemical instant cold packs are in the kit. If needed, get ice pack from a convenience store and place in cooler

Determine point spill entered waterway. Photograph this location (*include a reference point in the photo*)

Don the PPE from the Sampling Kit

- Collect all samples against the direction of the water flow! (face upstream)
- Collect upstream sample first!
- Collect samples well away from the bank (preferably where water is visibly flowing) and 6" below the surface
- Avoid sampling debris or scum layer from the surface.
- Photograph evidence of dead fish!

SAMPLING STEPS

Move 50' upstream of point where spill entered waterway (reference sample)

1. Remove the seal from the coliform sample container (125ml) just prior to collecting your sample. A chemical has been added to the sample container. Leave the chemical in the bottle and do not rinse.
2. Remove the cap immediately before collecting each sample. Do not allow the inside of the cap to touch anything
3. Holding the bottle in one hand, face upstream and lower the bottle 6" below the water surface. Then sweep the bottle upstream and out of the water. Be careful not to disturb the bottom sediment. If bottle is over-filled, do not pour water out. Instead, cap and shake contents well, then quickly pour contents into another labeled sterile sample bottle up to the fill line. Immediately replace the cap of the new sample bottle..
4. Open the larger containers and follow collection process above to fill to just below the neck of the container. A sampling pole may be used to collect the sample and then transferred to the container.

NOTE: The ammonia-nitrogen sample bottle contains sulfuric acid – LEAVE THE ACID IN THE BOTTLE AND DO NOT ALLOW IT TO TOUCH YOUR SKIN!

Label all of the samples with their location and note the date and time collected.

Place samples in cooler on the ice pack.

Take a photo of this sample location (*include a reference point in the photo*).

Move at least 10' downstream of point where spill entered waterway and repeat sampling steps (red boxes)

Complete the Chain of Custody form from the Sampling Kit.

Immediately contact Alpha Labs at (925) 828-6226 to inform them samples require processing and to schedule a pickup.

Samples should be picked up by the lab within 6 hours of collection time.

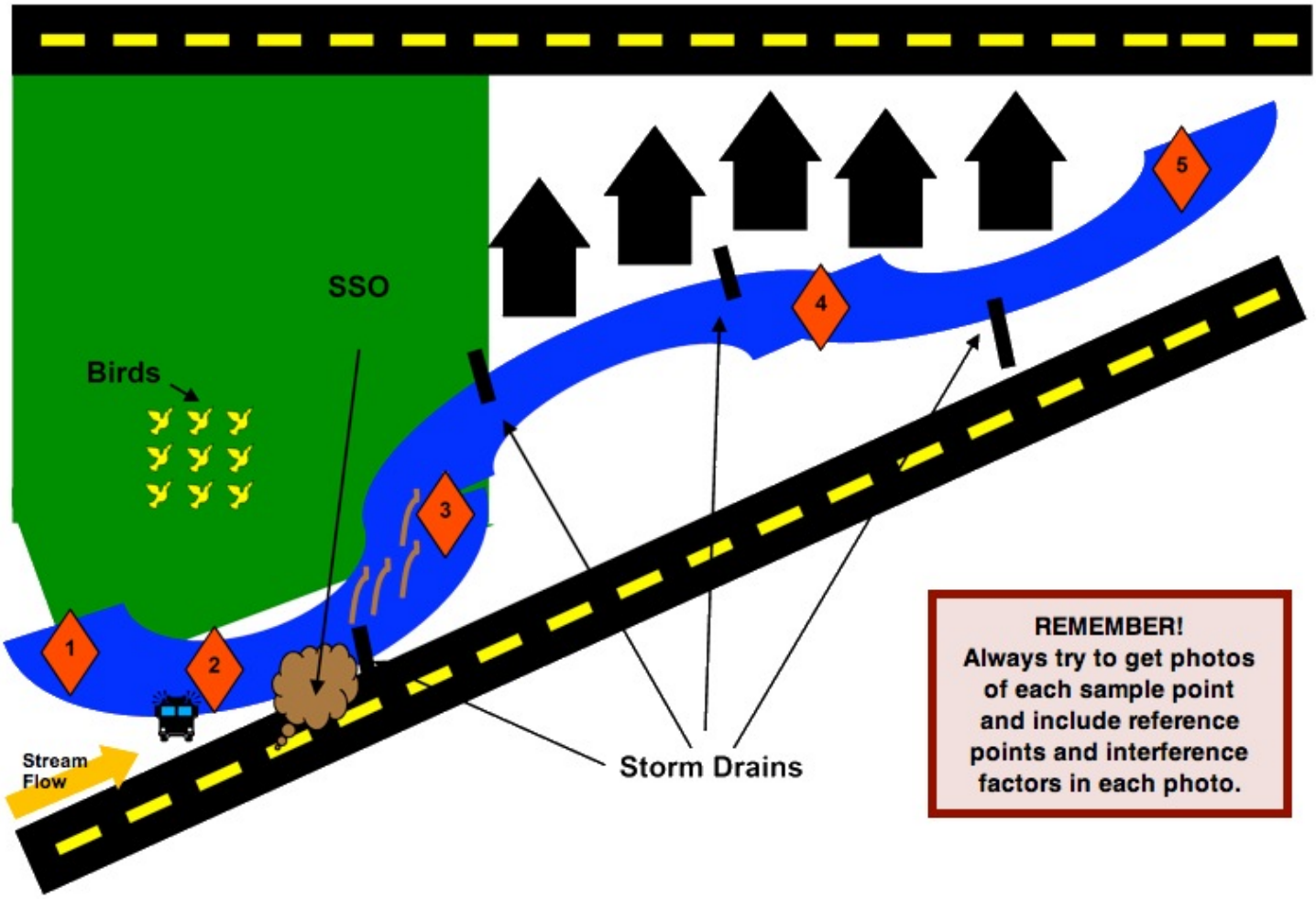
Post warning signs as directed by the County Environmental Health Department or the Senior Utility Worker. (Remove Warning Signs and lift restrictions only after internal consultation with the Deputy Director of Utilities Services and/or County Environmental Health)

Repeat sampling daily from time the spill is known until the results of two consecutive sets of samples indicate the return to the normal level or cessation of monitoring is authorized by the County Environmental Health Department.

Field Sampling Kit
Procedures for Sampling Receiving Waters after a Sewage Spill

C-1
Side B

This example is provided for illustrative purposes *only!* Base each sampling event on the geography, drainage and interference factors (*i.e. birds, animals, runoff, etc.)* of the area impacted. Consult the Laboratory as needed.



1. **Sample Location 1: Baseline Sample, *no* observable interference from birds, animals, runoff, etc**
2. **Sample Location 2: Baseline Sample, *observable* interference from birds, animals, runoff, etc**
   NOTE: Only collect this sample if you observe any possible interfering factors upstream from the spill location
3. **Sample Location 3: Immediately downstream of SSO entry point**
4. **Sample Location 4: Further downstream of SSO entry point – note any possible interfering factors**
5. **Sample Location 5: Further downstream of SSO entry point – note any possible interfering factors**

El Dorado Irrigation District: Overflow Emergency Response Plan

Field Sampling Kit
Sample Collection Chain of Custody Record

C-2

INSTRUCTIONS TO EMPLOYEE: Complete all shaded boxes.

Customer Name	**City of Morgan Hill**			**PO#**	
Customer Address	**17575 Peak Avenue, Morgan Hill, CA 95037-4128**			**WO#**	
Customer Telephone	**(408) 776-7333**	**Mail Code**		**LAB INFORMATION**	**Turnaround Requirement**
Sample Location Name				Ship to:	☐ Normal (21 days)
Lab Program Coordinator		**Phone #**		Ship Date:	☐ Rush: _____
Sampled By				Courier:	☐ Other:

LIMS# (Issued by Lab)	SAMPLE COLLECTION INFORMATION							# Containers	Matrix*	Analysis Requested					QA/QC Requirements
	Date	Time	Type: Composite	Type: Grab	Sample Location	Field pH	Field Temp			Ammonia	Enterococcus				☒ Lab Standard ☐ Special (see attached) Remarks/Notes
			☐	☒	Upstream			2	A	☒	☒	☐	☐	☐	
			☐	☒	Entry Point			2	A	☒	☒	☐	☐	☐	
			☐	☒	Downstream			2	A	☒	☒	☐	☐	☐	
			☐	☐				2		☐	☐	☐	☐	☐	
			☐	☐				2		☐	☐	☐	☐	☐	
			☐	☐				2		☐	☐	☐	☐	☐	
			☐	☐				2		☐	☐	☐	☐	☐	

*Matrix: P = Potable Water, W = Wastewater, A = Ambient Water, G = Groundwater, S = Soil, B = Biosolids, I = Industrial, O = Other (specify in remarks)

Relinquished by	Date	Time

Relinquished to	Date	Time

Transport/Shipping Information		
☐ USPS	☐ UPS	☐ FedEx
Tracing #:		
☐ Other:		

Sample Receiving Documentation

Container intact? ☐ Yes ☐ No	Correct container? ☐ Yes ☐ No	Field preserved? ☐ Yes ☐ No	Custody tape intact? ☐ Yes ☐ No
Cooled? ☐ Yes ☐ No	Temp. Blank? ☐ Yes ☐ No (°C)	Comments:	
Sample distribution: ☐ Lab bench ☐ Ice chest ☐ Walk-in cooler shelf #		Disposal Date:	Disposed by: (inits.)
C-O-C Distribution Date: By: ☐ Lab Admin File ☐ Prog/proj Mgr. ☐ Lab Prog. Coord. ☐ Delivery courier ☐ Pick-up courier			

Appendix D

CONTRACTOR ORIENTATION

CONTRACTOR ORIENTATION

The following procedures are to be followed in the event that you cause or witness a Sanitary Sewer Overflow.

Sanitary Sewer Overflows

How to avoid them and what to do if you don't

What?

A sanitary sewer overflow (SSO) is a discharge of untreated human and industrial waste before it reaches the wastewater treatment facility

Where?

SSOs usually occur through manholes, plumbing fixtures and service cleanouts

SSOs are usually caused by grease, debris, root balls, or personal hygiene products blocking the sewer lines, or by unusually high flow volume

How to prevent SSOs:

...when clearing plugged sewer laterals:

- Remove root balls, grease blockages and any other debris from the sewer
- If you can't prevent root balls, grease or debris from entering the sewer main, call us at (408) 776-7333, so we can work with you to remove the blockage and prevent blockages further downstream

...when constructing or repairing sewer laterals:

- Contact Development Services at the address listed to the right for a permit and lateral specifications.
- Check your work area. Make sure there is no debris left in the sewer line before you backfill.
- Avoid offset joints, which may make sewer lines vulnerable to root intrusion and grease

If you cause or witness an SSO, immediately contact:

City of Morgan Hill

(408) 776-7333

City of Morgan Hill

Morgan Hill City Hall

17575 Peak Avenue

Appendix E

SEWER SERVICE REQUEST FORM

Public Works Service Request Form

CITY NOTIFIED BY	Name: Check here if notification was anonymous ☐	DATE:
	Telephone:	TIME:
	Address:	
	If notification was received other than by telephone, describe method of communication:	
CALL RECEIVED BY	Name:	CHECK ONE: ☐ Complaint ☐ Emergency ☐ Other:
	Job Title:	
ADDRESS OF POTENTIAL PROBLEM:		LOCATION OF POTENTIAL PROBLEM: ☐ Street ☐ Easement ☐ Backyard ☐ Other:
WHEN DID THE CALLER NOTICE THE PROBLEM? (date and time)		
DID THE CALLER INDICATE THAT THE SSO MAY HAVE REACHED WATERS OF THE STATE? ☐ YES – Describe: ☐ NO		
WHAT HAS THE CALLER OBSERVED? (e.g., odor, duration, location on property, known impacts, indication if surface water impacted, appearance at cleanout or manhole):		
IS THE INCIDENT IN THE CITY'S SERVICE AREA? ☐ YES ☐ NO – indicate responsible agency:		WAS A CREW DISPATCHED? ☐ YES - indicate date and time: ☐ NO

FORM COMPLETED BY	NOTES

NAME: JOB TITLE:	
NAME: JOB TITLE:	

Appendix F

WATER QUALITY MONITORING PROGRAM

INSERT WQMP

Appendix F

WATER QUALITY MONITORING PROGRAM

City of Morgan Hill

Water Quality Monitoring Plan

1/4/18

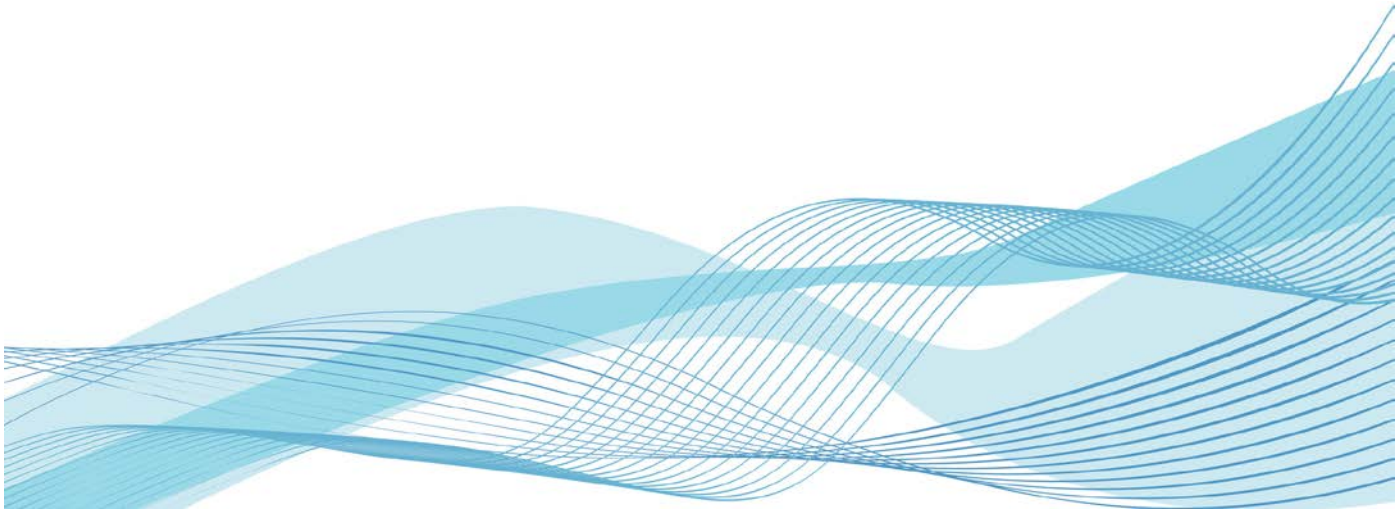


Table of Contents

ATTACHMENTS

1. PURPOSE OF PROGRAM PLAN

The purpose of this Water Quality Monitoring Program Plan (WQMP or Plan) is to implement the requirements for sampling of sanitary sewer overflows (SSOs) greater than 50,000 gallons that reach surface waters. This plan conforms to the State Water Resources Control Board Waste Discharge Requirements Order No. 2006-0003-DWQ, Section D.7(v) and Monitoring and Reporting Program (MRP) Section D, Water Quality Monitoring Requirements issued by executive order number WQ 2013-0058-EXEC effective on September 9, 2013. This WQMP provides the City of Morgan Hill (City) policies and procedures to assure consistent conformance to the regulatory requirements and to establish procedures for City staff and contractors in their responses to large releases of sanitary sewage that reach surface waters. This WQMP is consistent with and supplemental to the City of Morgan Hill Overflow Emergency Response Plan, Element VI of its SSMP. Finally, this document will be used to coordinate training for the City's new employees and regular refresher training for existing employees.

Additionally, this Plan is also used as a guideline for monitoring and sampling requirements that may be imposed upon the City from citizen suits under the Clean Water Act (CWA) resulting in settlement agreements, stipulated orders or consent decrees that can require monitoring and sampling of sanitary sewer overflows of any kind or size. This Plan establishes procedures for the identification of sampling locations, protocols for the proper collection of samples, the chain of custody for sample collections, the handling of samples, the reporting and recordkeeping to assure the legal integrity of monitoring for compliance with regulatory requirements. The plan will also establish policies and procedures that will be used to assure proper coordination between the taking and testing of samples, as well as assure that samples taken will satisfy the local regulatory agency's Basin Plans and the unique character of the City's local service area and surface waters.

This Plan is intended to establish protocols for all sampling including when, where and how; establish the required water quality sample analyses that will be conducted; identify the access and safety requirements related to sampling considerations; and identify any local concerns that this monitoring plan should address. In addition, the Plan establishes the requirements for equipment calibration, notification requirements related to an overflow, recordkeeping requirements, staff training issues and requirements for the regular reviews and audits of the WQMP. Finally, all City forms used for water quality monitoring are included and available for use in any SSO incident.

2. DEFINITIONS

The following definitions and acronyms are used in this Program Plan:

BACTERIA	Probaryotic microorganisms typically a few micrometers in length, with shapes from spheres to rods and spirals
CalOES	State of California Office of Emergency Services
CALOSHA	California Division of Occupational Safety and Health
CFR	Code of Federal Regulations
CFS	Cubic feet per second
CIWQS	California Integrated Water Quality System
CSRMA	California Sanitation Risk Management Association
CWA	Clean Water Act
DH2O	Distilled Water
DEET	N,N-Diethyl-meta-toluamide
DOHS	California Department of Health Services
E. Coli	Escherichia coli (bacteria)
ELAP	Environmental Laboratory Accreditation Program

EPA	Environmental Protection Agency
Field QC	Field Quality Control
GPM	Gallons per minute
GWDR	General Waste Discharge Requirements or WDR
GIS	Geographic Information System
LIMS	Laboratory Information Management System
LRO	Legally Responsible Official
mg/l	Milligrams per liter
ml	Milliliter
MPN	Most probable number
MRP	Monitoring and Reporting Program
NH3	Ammonia
NH3-N	Ammoniacal Nitrogen

NPDES	National Pollution Discharge and Elimination System
OERP	Overflow Emergency Response Plan
OES	See CalOES
PPE	Personal Protective Equipment
ppm	Parts per million
QA/QC	Quality Assurance/Quality Control
RWQCB	Regional Water Quality Control Board
SOP	Standard Operating procedure
SSC	Sewer Service Charge
SSMP	Sanitary Sewer Management Plan
SSO	Sanitary Sewer Overflow
SSO GWDR	Sanitary Sewer Overflow General Waste Discharge Requirements

SURFACE WATER

All waters whose surface is naturally exposed to the atmosphere; for example, rivers, lakes, reservoirs, ponds, streams, seas, estuaries, etc., and all springs, wells, or other collectors directly influenced by surface water.

SWRCB	State Water Resources Control Board
WQMP	Water Quality Monitoring Program Plan
WQ	Water Quality
WDR	Waste Discharge Requirements
VOC	Volatile Organic Compound

3. RESPONSIBILITY

The City shall designate responsibility for all WQMP roles to appropriate classifications in the City's organizational structure to assure conformance of all activities for the monitoring of SSOs greater than 50,000 gallons reaching surface waters (Category 1 SSO), to reduce potential liability, protect public health, and to assure those responsible for this Plan are trained in their roles and responsibilities for the performance of proper protocols. It is further recognized that the proper application of this Plan will assure that all monitoring can withstand regulatory or legal scrutiny of the State, Regional Board, or from the actions of a citizen lawsuit. These roles and responsibilities are intended to be compliant with WDR Sections D.13 (vi), G and Section C.5 and D of the September 9, 2013 MRP.

The following table contains the roles and responsibilities as assigned by the City to individual classifications or service contractors of the City:

Roles and Responsibility	Responsible Classification

Provide and document regular training on WQMP for all City classifications that have a role or responsibility in the WQMP and identified herein	Utility Operations Manager
Identification and assessment of potential impacts to local areas with surface waters that may require WQMP (i.e. aerial crossings, creeks, waterways, rivers, bays, estuaries, etc.)	Utility Operations Manager
Certification of calibration of sampling equipment and maintenance of calibration records	Utility Operations Manager
Determination of specific sampling protocols and analytic methods to be used for the City -required testing	Utility Operations Manager
Quarterly completion of the monitoring and sampling kit checklist from Appendix E.	Utility Operations Manager or designee
Annual review of all standard operating procedures related to this WQMP especially the Sample Collection procedures	Utility Operations Manager
Decision to invoke a WQMP and direct the monitoring program to conclusion	Utility Operations Manager
Selection of sampling locations	Senior Utility Worker, Water Quality Specialist or designee
Coordination of field sampling	Senior Utility Worker, Water Quality Specialist or designee
Conduct field sampling per City protocols	Senior Utility Worker, Water Quality Specialist or designee
Authorization and direction for placement of public notifications and signage	Senior Utility Worker, Water Quality Specialist or designee
Photographs of sampling and signage placed to protect public health and safety	Senior Utility Worker, Water Quality Specialist or designee
Preparation of Chain of Custody for all samples taken including proper labeling	Senior Utility Worker, Water Quality Specialist or designee
Determination of spill travel time, if applicable.	Senior Utility Worker, Water Quality Specialist or designee

Review and evaluate lab results for termination of sampling and to determine the nature and impact of the release	Utility Operations Manager or designee
Decision to terminate sampling	Utility Operations Manager or designee
Preparation of detailed sampling location map	Utility Operations Manager or designee
Conduct sample analysis	ELAP-certified Contract Lab
Preparation of water quality sampling activities narrative for Technical Report	Utility Operations Manager
Review and Approval of Technical Report	Utility Operations Manager
Certification and placement of Technical report in the CIWQS spill reporting system.	Utility Operations Manager
Failure Analysis Investigation of all water quality monitoring from the SSO event to determine all necessary changes or modifications to the WQMP	Utility Operations Manager
Audits of the WQMP as required by City SSMP Element 10, Audit.	Utility Operations Manager
Management of Change responsibilities for the WQMP and all associated forms and documents required for use during an incident	Utility Operations Manager

It is recommended that this list of responsibilities be placed on a laminated card and kept in the Monitoring and Sampling Kit for easy access during an SSO sampling incident.

4. AUTHORITY AND REFERENCES

The authority and/or requirements for the monitoring and sampling of sanitary sewer overflows are contained in the following regulations:

1. State Water Resources Control Board Waste Discharge Requirements Order No. 2006-0003-DWQ, Section D.7(v).

2. State Water Resources Control Board Monitoring and Reporting Program (MRP) Sections C.5 D, Executive Order number WQ 2013-0058-EXEC effective September 9, 2013
3. Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Organization et al.
4. Clean Water Act Sections 301(a), 304(h), and 501(a).
5. Code of Federal Regulations, Title 40, Part 136.

There are several applicable references that are available to assist with the Water Quality Monitoring Program as follows:

A. Basin Plan of the Regional Water Quality Control Board
B. Best Management Practices for Sanitary Sewer Overflow (SSO) Reduction Strategies, Central Valley Clean Water Associates and Bay Area Clean Water Agencies, December 2009
C. City Overflow Emergency Response Plans
D. Field Guide for Surface Water Sample and Data Collection, Air Program, USDA Forest Service, June 2001.
E. Standard Operating Procedures for Surface Water Quality Sampling, Arizona Department of Environmental Quality, Surface Water Section, September 2012.
F. Surface Water Sampling_AF.R3, Document Number SESDPROC-201-R3, Region 4, Environmental Protection Agency, Science and Ecosystem Support Division, Athens, Georgia, February 28, 2013.

5. IDENTIFICATION OF LOCAL SURFACE WATERS AND CHARACTERISTICS

An important element of any water quality monitoring program is the proper and thorough understanding of the service area and the various challenges the geography and sanitary sewer infrastructure of the service area present for the potential of wastewater reaching surface waters or storm water facilities. By evaluating the areas of concern in a service area such as lakes, rivers, dry creeks, aerial pipeline crossings over water ways and all storm water related infrastructure, the City can be better prepared to timely respond to any SSO reaching surface waters and to minimize the impacts of an SSO in or around local surface waters and storm water infrastructure.

A. Surface Waters of Concern

For the purposes of this Plan, surface waters are defined as all waters whose surface is naturally exposed to the atmosphere, for example, rivers, lakes, reservoirs, ponds, streams, seas, estuaries, etc., and all springs, wells, or other collectors directly influenced by surface water. In addition, the City will also identify and evaluate areas where collection system pipelines and force mains cross

over or under waterways as these crossings can require additional resources and equipment to properly address any SSO from these collection system assets.

Surface waters of concern are those surface waters with the City's service area that may be impacted by a sanitary sewer overflow from the City's sanitary sewer collection system. Prior planning, review and evaluation of potential failure mechanisms can help minimize any potential impacts to surface waters or storm water infrastructure when and if the WQMP must be invoked.

Any review of these important areas of potential surface water contamination in advance of an SSO should allow the City to be better prepared to respond to an SSO with the proper equipment and a better understanding of the procedures that may need to be invoked during the SSO such as flow rate of a creek or stream, and potential areas of significant environmental concern such as shell fish beds or fish habitats. In addition, having all storm water infrastructure located on the collection system field maps will help the City's responders quickly determine if SSOs may flow into storm drains reach and impact surface waters.

The following are the surface waters of concern within the City's jurisdiction:

- Anderson Lake
- Coyote Creek
- Llagos Creek
- Little Llagos Creek
- Fisher Creek

6. LAB SELECTION

A. Analytical Lab

Samples collected for SSO response and background monitoring purposes pursuant to Section 5.0 will be analyzed at the City's current ELAP-certified contract lab. This lab is accredited through California's Department of Public Health Environmental Laboratory Accreditation Program (ELAP). ELAP provides evaluation and accreditation of environmental testing laboratories to ensure the quality of analytical data used for regulatory purposes to meet the requirements of the State's drinking water, wastewater, shellfish, food, and hazardous waste programs. The State agencies that monitor the environment use the analytical data from these accredited labs. The ELAP-accredited laboratories have demonstrated capability to analyze environmental samples using approved methods.

B. Getting Samples to the Lab

At all times, sample hold times identified below will be observed in accordance with Section 7.0. Once samples are collected, they will be transported to the City's current contract lab.

7. SAMPLING PARAMETERS

A. Required Sampling Parameters

The RWQCB Basin Plan and/or NPDES permit set the water quality standards against which one can judge the levels of impacts of an SSO on surface waters.

In accordance with the SWRCB Revised MRP WQ 2013-0058, the following parameters will be sampled:

1. Ammonia

Ammonia-N, is a key indicator of the extent of the gross pollution of the receiving water from a SSO. Untreated wastewater or partially-treated wastewater is generally high in ammonia-N (typical 20-30 mg/L). In comparison the natural background concentration in the surface water is low, typically, less than 0.5 mg/L. Therefore, the elevated concentration of ammonia of the surface water downstream or at the site of the SSO, as compared to that upstream of the site is a reasonable indication of the extent of gross contamination from the SSO.

2. Bacteriological Indicator as specified in the local Basin Plan

Total coliform, fecal coliform and enterococci count are indicators of potential public health impacts of an SSO on the receiving waters. If the concentrations of these groups of bacteria are elevated above and beyond the natural background and/or above the RWQCB Basin Plan Water Quality Standards (objective), public notification and posting may be necessary.

It should be noted that there may be non-SSO-related causes of elevated bacteria in surface water, for example, animal sources or storm drain discharge. The upstream and/or other

samples may reflect the extent of bacterial contamination from these other sources. Sometimes the extent of the SSO may be indistinguishable from the other natural sources beyond the City's control. This is particularly true when taking Source samples based on an estimated downstream location of the SSO plume (reference Section 7F).

Generally, if the concentrations of these groups of bacteria at the downstream or at the site of impact are within the range of the non-impacted site (i.e. upstream) or levels indicated in historical background monitoring levels, the water quality impacts of the SSO are considered insignificant.

The surface water quality objectives of these groups of bacteria for the two Regional Water Quality Control Boards having jurisdiction over the City of Morgan Hill are shown in Tables 7.1 and 7.2.

Table 7.1: SFRWQCB Water Quality Objectives for Coliform Bacteria[a]

Beneficial Use	Fecal Coliform (MPN/100ml)	Total Coliform (MPN/100ml)
Water Contact Recreation	Geometric mean < 200 90th percentile < 400	Median < 240 No sample > 10,000
Non-contact Water Recreation[d]	Mean < 2000 90th percentile < 4000	
Municipal Supply: • Surface Water[c] • Groundwater	Geometric Mean < 20	Geometric Mean < 100 < 1.1[e]

NOTES:

a. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

b. Based on a five-tube decimal dilution test or 300 MPN/100ml when a three-tube decimal dilution test is used.

c. Source: Report of the Committee on Water Quality Criteria, National Technical Advisory Committee, 1968.

d. Based on multiple tube fermentation technique; equivalent test results based on other analytical techniques, as specified in the National Primary Drinking Water Regulation, 40 CFR, Part 1421.21 (f), revised June 10, 1992, are acceptable.

Source: Water Quality Control Plan (Basin Plan) for the San Francisco Basin (Region 2) 2016

Table 7.2: Central Coast RWQCB Water Quality Objectives for Coliform Bacteria[a]

Beneficial Use	Fecal Coliform (MPN/100ml)	Total Coliform (MPN/100ml)
Water Contact Recreation	Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml.	
Non-contact Water Recreation	Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 2000/100 ml, nor shall more than ten percent of samples collected during any 30-day period exceed 4000/100 ml.	

Source: Water Quality Control Plan (Basin Plan) for the Central Coast Basin (Region 3) 2016

B. Sampling Parameters for City of Morgan Hill

1. Ammonia

- Discussion: See Section 7A
- Sample Container: Plastic/glass
- Sample Type: Grab
- Sample Volume Required: 200 ml. minimum
- Hold Time: 28 days
- Preservative: Sulfuric acid
- Analytical Method: Method 4500-XX R and C, Standard Methods for the Examination of Water or Wastewater, 21st Edition

2. Total Coliform/Fecal

- Discussion: See Section 7A.2
- Sample Container: Plastic (sterile)
- Sample Type: Grab
- Sample Volume Required: 100 ml. minimum
- Hold Time: 8 hours
- Preservative: None if waters are not chlorinated
- Analytical Method: Method 9221 B, C and E, Standard Methods for the Examination of Water or Wastewater, 21st Edition

8. SAMPLING EQUIPMENT AND CALIBRATION

A. Sampling Equipment Used at the City of Morgan Hill

The following are the sampling equipment used by the City

- Sampling pole with fixed container
- Sampling pole with removable container
- Sampling pail and rope
- Stream velocity meter
- Grab-n-Go Sample Kit containing, at a minimum:
  - Ice pack
  - Waterproof pen
  - Sample labels
  - Camera
  - Sample bottles
  - Distilled water for Sample Blanks
  - Appropriate PPE

9. Sampling Procedures

A. Sample Location and Identification Procedures:

Samples will be collected by the City Sewer Crew. The most precise and accurate analytical measurements are worthless and even detrimental if performed on a sample that was improperly collected and stored or was contaminated in the process. The purpose of sampling and analysis is to provide data that can be used to interpret the quality or condition of the water under investigation.

Unfortunately, water quality characteristics are not spatially or temporally uniform from one effluent to another. A sampling program must recognize such variations and provide a basis for compensations for their effects. The sample must be:

1. Representative of the material being examined;
2. Uncontaminated by the sampling technique or container;
3. Of adequate size for all laboratory examinations;
4. Properly and completely identified;
5. Properly preserved, and
6. Delivered and analyzed within established holding times.

These six requirements are necessary for a proper assessment of water quality.

It is impossible to establish hard and fast rules concerning sampling locations. However, the following general guidelines should be applied whenever City personnel conduct surface water sampling:

1. The sampling location should be far enough upstream or downstream of confluences or point sources so that the surface water and SSO volume is well mixed. Natural turbulence can be used to provide a good mixture.
2. Samples should be collected at a location where the velocity is sufficient to prevent deposition of solids, and to the extent practical, should be in straight reach having uniform flow. All flow in the reach should be represented, so divided flow areas should be avoided and samples should be taken towards the middle of the reach where feasible.
3. Sampler must always stand downstream of the collection vessel, and sample “into the current”. Care must be taken to avoid introducing re-suspended sediment into the

sample.

B. Sample Types:

Grab samples are appropriate for the characterization of surface waters at a particular time and place, to provide information about minimum and maximum concentrations, to allow for the collection of variable sample volume.

Grab samples may be collected directly into the sample container, or a clean decontaminated intermediate container may be used if a wading sample is not possible or safe. If an intermediate container is used, when in the field, double rinse the sampling device (bucket, automatic sampler) with sample water prior to collecting the sample and be sure to discard rinse water downstream of where sample will be collected. If samples are collected in a bucket and distributed a consolidation collection container, swirl the contents of the bucket as it is being poured into the consolidation collection container to avoid settling of solids (and pour in back and forth pattern – *e.g.*, 1-2-3-3-2-1).

Grab Sample: A grab sample is defined as an individual sample collected at a given time. Grab samples represent only the condition that exists at the time the sample is collected (US EPA 1977).

Surface Grab Sample: A sample collected at the water surface (i.e. skimming) directly into the sample container or into an intermediate container such as a clean bucket. A single or discrete sample collected at a single location.

Field Blanks are used to evaluate the potential for contamination of a sample by site contaminants from a source not associated with the sample collected (e.g., airborne dust, etc.). Sterile, deionized water is taken into the field in a sealed container. This is the stock water. The stock water is then poured into the sample container. The containers and sample submission forms are labeled as “Field Blank“. The same template selected for the test samples should be used. Field blanks are subject to the same holding time limitations as samples. The appropriate FIELD QC box on the sample Chain of Custody form should be checked.

C. Decontamination Procedures

Removing or neutralizing contaminants from sampling equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances.

Gross contamination can be removed by physical decontamination procedures. These abrasive and non-abrasive methods include the use of brushes, air and wet blasting, and high and low pressure water cleaning.

The decontamination procedures for the sample types and sampling equipment (other than sample bottles, which are provided to Sewer Staff in a "ready to be used" condition by the lab) used at the City of Morgan Hill may be summarized as follows:

1. Physical removal
2. Tap water rinse
4. Air dry

D. Sample Labeling and Chain of Custody Procedures

A sample is a physical evidence of a facility or the environment. An essential part of all enforcement investigations is that evidence gathered be properly documented. To accomplish this, the following sample identification and chain of custody procedures are established.

1. The method of sample identification depends on the type of measurement or analyses performed. When in-situ measurements are made, the data are recorded directly in Field Data Worksheets with identifying information, field observations, and remarks. Examples of in-situ measurements are:

    - pH
    - Temperature
    - Dissolved Oxygen
    - Stream Flow Measurement

    Samples other than in situ measurements must be identified by a sample label. These samples are removed from the sample location and transported to a laboratory for analyses. Before removal, however, a sample is often separated into portions depending upon the analyses to be performed. Each portion is preserved in accordance with applicable procedures and each sample container is identified by a sample label.

2. At a minimum, the following grab samples will be collected, in duplicate:

   - Field Blank: See Section 9.B for discussion.
   - Upstream: This sample will be collected far enough upstream of the SSO's point of entry into the surface water as to be free of contaminants from the SSO. Typically, 50-feet is sufficient, but this may vary on circumstances of the spill.
   - Source: Immediate vicinity where the SSO entered the surface water. This point will actually be downstream of the actual SSO entry point for SSO's that have stopped entering the surface water to be sampled. If the SSO has stopped, calculate the approximate downstream distance from the original SSO location by dividing the time since the SSO occurred by the estimated velocity. This is the approximate downstream distance from the SSO discharge point to the "source" sampling location.
     - See Section 9.F for information on determining velocity of the surface water in order to determine the Source sample location.
   - "Downstream" of SSO: This sample will be collected far enough downstream to be representative of the water quality of the surface water after adequate mixing of the surface water and the SSO have occurred. Typically, this location will be 50-feet downstream of the Source sample, but this may vary on the size and velocity of the surface water to be sampled.

3. Sample labels shall be completed for each sample, using waterproof ink. The information recorded on the sample tag/label includes:

   - Date: a six-digit number indicating the year, month, day of collection
   - Time: a four-digit number indicating military time of collection (e.g., 0954)
   - Sample Location: sampling location description as either Upstream, Source, or Downstream
   - Samplers: each sampler is identified
   - Parameter/preservative: the analysis to be conducted for the sample /sample preservation

4. Photos or video of each sample location will be taken, properly labeled with date, time, and view direction and a map of the photo locations completed. Photos and videos shall include relevant landmarks to identify sampling locations and their surroundings.

   Due to the evidentiary nature of samples collected during enforcement investigations, possession must be traceable from the time the samples are collected until they are analyzed. To maintain and document sample possession, a Surface Water Sample Chain of Custody Record (Attachment C) must be completed. A sample is under custody if:

   - It is in your possession, or
   - It is in your view, after being in your possession, or
   - It was in your possession and under your control to prevent tampering, or
   - It is in a designated secure area.

5. As few people as possible should handle samples. The person taking the samples is personally responsible for the care and custody of the samples collected until they are transferred or dispatched properly.

6. Samples are accompanied by a chain of custody record. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents sample custody transfer from the sampler, often through another person, to the analyst at the laboratory. The samples are typically transferred to the sample-receiving custodian at the laboratory.

E. Safety Considerations

Personal safety of staff engaged in any fieldwork activity (e.g., in transit, walking or hiking, and any field activities while at the sample site) is of primary importance. Staff should never place themselves in dangerous or risky situations. Any hazards that are known by field personnel should be communicated to other members of the field crew.

Fieldwork should be postponed if there is indication that engagement in the field activity could cause bodily harm. Working during lightning storms, in heavy vegetation or poison oak, near aggressive wildlife or domestic animals, traversing steep or rugged terrain, unstable slopes or creek banks, near swiftly moving water or potential flash flood conditions, or during snowy weather is not considered "normal risk". If any member of the field crew is uncomfortable with a reasonable self-determined hazardous field condition, it is that person's responsibility to bring this to the attention of the onsite field supervisor or their supervisor. A "reasonable self-determined hazardous field condition" is defined as other than normal risk. Supervisors shall not dismiss any person's spoken concerns that field conditions are too hazardous to complete the work assignment.

The person taking the samples must have adequate protection, including protective clothing. They must wear gloves, as protection against chemical and/or bacteriological hazards, while they are sampling or handling samples that are known or suspected to be hazardous (e.g. visible solids or sheens, downstream from sewage spills, etc.), or if hands have open wounds. The type of gloves worn shall be determined by the sampling circumstance and type of pollutants expected – for instance longer gloves are needed when samples must be taken well below the surface.

When in a boat or wading in a stream, a personal floatation device shall be worn at all times. Other protective measures shall be taken in accordance with City safety procedures.

Upon arrival at a sampling site, safety equipment such as signs, cones, lights, etc. shall be set out as appropriate. Vehicles shall be parked in locations and directions to minimize traffic disruption and avoid sample contamination. Photos should be ultimately taken of the placement of all safety equipment and signage

The following guidelines apply to all fieldwork by City staff.

- No sample or measurement is worth the risk of injury.
- All staff shall use proper personnel protective gear as appropriate for the incident (e.g., life preservers, gloves, goggles, etc.)
- Field sampling crews should consist of at least two members unless otherwise approved by a supervisor.
- Be conscious of the whereabouts of rattlesnakes, mountain lions, and other dangerous animals.
- Open body wounds are entry sites for infection; take the necessary precautions for self-protection.
- If there is storm activity in the work area, wait for safer conditions to develop or postpone the sampling.
- Do not sample at night without approval from your supervisor.
- Do not trespass on private property or posted restricted public lands without prior permission and written approval from property owner or administrator.
- If strange or suspicious looking people are in the work area, either wait for them to leave or postpone the work to a later time. Do not force confrontations with strangers and back away from any confrontations with the public. Be courteous and understanding of public concerns of the situation.
- Take the necessary precautions against exposure to harmful weather conditions such as heat, wind, snow, cold, rain, etc.
- Carefully evaluate a given on-site situation to determine if the task can be performed safely.
- Wear protective footwear when entering streams.
- Do not enter the stream if the water is flowing too fast.

F. Stream Velocity Measurements

If sampling is performed after the SSO has stopped, the velocity of the impacted surface water must be determined to estimate SSO travel time and select an accurate Source sample location. One way to measure the SSO travel time is to use a velocity probe (such as a Global Water FP111-S Flow Probe) to determine the rate of flow in the water body. In cases where a water velocity probe is used, the manufacturer's instructions will be followed.

G. Grab-n-Go Sampling Kit

The City maintains a Grab-n-Go sampling kit located at Corp Yard. The kit is inspected quarterly by the Senior Utility Worker, Water Quality Specialist or designee. Additionally, any City of Morgan Hill employee utilizing the kit is responsible for decontaminating sampling equipment and field monitoring devices and replenishing the kit.

SSO Sample Collection Kit Inventory:

- Cooler
- Surface Water Sampling SOP (Attachment B)
- Ice Pack
- 9 Ammonia sample bottles, preserved (6 for samples (3 sets of duplicates), 2 for Field Blanks and 1 extra in the event of contamination, spillage of the preservative or other contingency)
- 9 Coliform sample bottles (6 for samples (3 sets of duplicates), 2 for Field Blanks and 1 extra in the event of contamination, or other contingency)
- Digital camera, with extra batteries
- Latex gloves
- Safety glasses/goggles
- Surface Water Sampling Worksheet (Attachment D)
- Sampling Pole
- Waterproof Pen
- Minimum of 20 blank sample bottle labels
- Chain of Custody form (Attachment C)
- Stream Velocity meter

H. Surface Water Maps

Maps of surface waters in the City of Morgan Hill service area that may be impacted by an SSO are located in Attachment F.

I. Follow Up Sampling

1. Sampling will be repeated every 24 hours, or as directed by the RWQCB or the Santa Clara County Environmental Health Department, until such time as one of the following criteria have been met:

    - The Environmental Health Department or the RWQCB indicates follow up sampling is no longer required, or
    - Both the ammonia and bacteria levels downstream are approximately equal to or less than the upstream levels; or

- The concentration of ammonia is at or below that of the upstream sample, or the un-ionized ammonia is below *0.16 mg/L as N*; and the concentration of fecal bacteria levels are below the applicable acute water quality objective listed in Tables 7.1 or 7.2.

J. Surface Water Sampling SOP

The Surface Water Sampling SOP, Attachment B, provides step-by-step procedures to collect samples and deliver them for analysis in accordance with Sections 6, 7 and 9.

10. NOTIFICATIONS OF REGULATORY AGENCIES

Regulatory notification requirements are located in the City of Morgan Hill Sanitary Sewer Overflow Emergency Response Plan section 11.0 (effective 11/2017).

11. TECHNICAL REPORT

The MRP requires that in the event of a 50,000 gal or greater overflow spilled to surface waters, the City must prepare and submit an SSO Technical Report that includes a description of all water quality sampling activities conducted, a location map of all water quality sampling points, and the analytical results and evaluation of the results, pursuant to Section B.5 of the MRP. In addition, this report must be submitted to the CIWQS Online SSO Database within 45 days of the end of the SSO and must be certified by the City's Legally Responsible Official.

12. RECORDKEEPING

All sampling related records associated with this WQMP should be contained in the appropriate SSO Incident file designated with a specific locator record number. These records shall include at least the following documents related to the WQMP:

- A narrative description of water quality sampling activities associated with the event.
- Timeline of the sampling activities until sampling is terminated.
- All surface water sampling worksheets.
- Computations of spill travel time in surface waters, if appropriate.
- Chain of Custody for all samples.
- Sampling Map of all sample locations.
- All photos or video showing sampling activities.
- Final analytical results from the certified laboratory conducting the sample analysis along with an Agency evaluation of the results to determine the nature and impact of the release.
- Failure analysis reviews of the WQMP including recommendations for changes and modifications.

- Calibration records for specific equipment used in the sampling processes.
- Notification documentation for all public and private agencies involved with or requiring monitoring related to final sample results.

The City shall maintain all records including records from service contractors associated with this WQMP as part of the file records for an SSO as required by the WDR and MRP. These records shall be maintained for a minimum period of five-years from the end date of the SSO unless required by regulatory enforcement action, request of the State or Regional Board or as support for claims litigation resulting from the SSO. All records associated with the SSO shall be destroyed upon reaching the end of the file retention period or as otherwise required by the Regional or State Board.

Samples of all City forms and records used in this WQMP are included as attachments.

13. TRAINING

Training will be provided in accordance with Table 13.1.

Table 13.1 City of Morgan Hill surface water sampling training program

Who Is Trained To Collect Surface Water Samples?	Sewer Crew
Training Curriculum	at a minimum, training shall include: • The City of Morgan Hill Water Quality Monitoring Plan • Sampling technique, including hands on practice • Sampling equipment calibration, use and decontamination procedures, including hands on practice • Sampling safety • Completion of the Sampling Equipment Calibration/Maintenance Log, Surface Water Sampling Report and Chain of Custody
Training Documentation	Attendees shall be required to sign-in to all training on the appropriate forms used by the City of Morgan Hill.
Refresher Training Frequency	Annual
Who is Responsible for Ensuring Training Occurs?	Utility Operations Manager
Required Training Records	Employee training sign in log

Who is Responsible for Maintaining Records?	Utility Operations Manager or designee

14. INTERNAL REVIEW AND UPDATE OF THE WQMP

The WQMP is a requirement of the WDR and MRP regulations and therefore the WQMP must be adopted by the City governing board when completed and thereafter at the same time as the new adoption of the SSMP every five years or when major changes to the SSMP are required. Internal reviews of the WQMP should be conducted at a minimum with City SSMP audits or with a failure analysis following a SSO event requiring the use of this WQMP. This latter evaluation should be used to determine if any procedures or program changes would improve the WQMP.

The internal review of the WQMP must include a thorough review of the then existing WQMP against actual performance by the agency staff and testing laboratory during and after the event. All documents associated with the water quality sampling should be reviewed and included in the SSO file and compared to the requirements in this Plan. Particular attention should be given to all dates and times associated with the monitoring, proper tests in support of the Regional Board Basin Plan, proper completion of the Chain of Custody, equipment calibration documentation of all equipment used for sampling and available photographs or video of the sampling processes, review and sign-offs by all responsible parties, review of the sampling locations map, final lab results and the certification report that the Technical Report was submitted within 45 calendar days of the end of the SSO to the CIWQS system.

In addition, the City should also conduct regular reviews of the WQMP at least annually or along with the bi-annual SSMP Audit required by the WDR. The review should be undertaken to determine that all information in the Program is current, that all classification responsibilities have not changed, that all forms are still appropriate and that all contract relationships with testing laboratories, if not associated with the agency, are still current and available 24 hours per day and 7 days per week. The review should also include a review of the Regional Board Basin Plan to assure continuing conformance with the Basin Plan.

This internal review should be conducted by senior management of the collection systems personnel, laboratory management and any outside contract laboratory services subsequent to any event or once per year if the WQMP has not had to be invoked during the preceding year.

Finally, a schedule and assignment of responsibility for completion of the recommended changes should be prepared along with additions to the SSMP Change Log for these changes and modifications of the WQMP.

CHANGE LOG

The new MRP, Section E.3 requires that all changes to the Sanitary Sewer Management Plan be recorded and documented using an SSMP Change Log indicating what section is being change, a description of the changes, and the person or persons authorizing the changes. Because the WQMP is required by the WDR and MRP, it is also necessary that changes to the WQMP be

included in the documentation of changes to the SSMP. Any changes resulting from Section 14 above should be added to the Change Log of the SSMP upon implementation and adoption of the changes as required by the WDR.

ATTACHMENT A
Water Quality Monitoring Plan Change Log

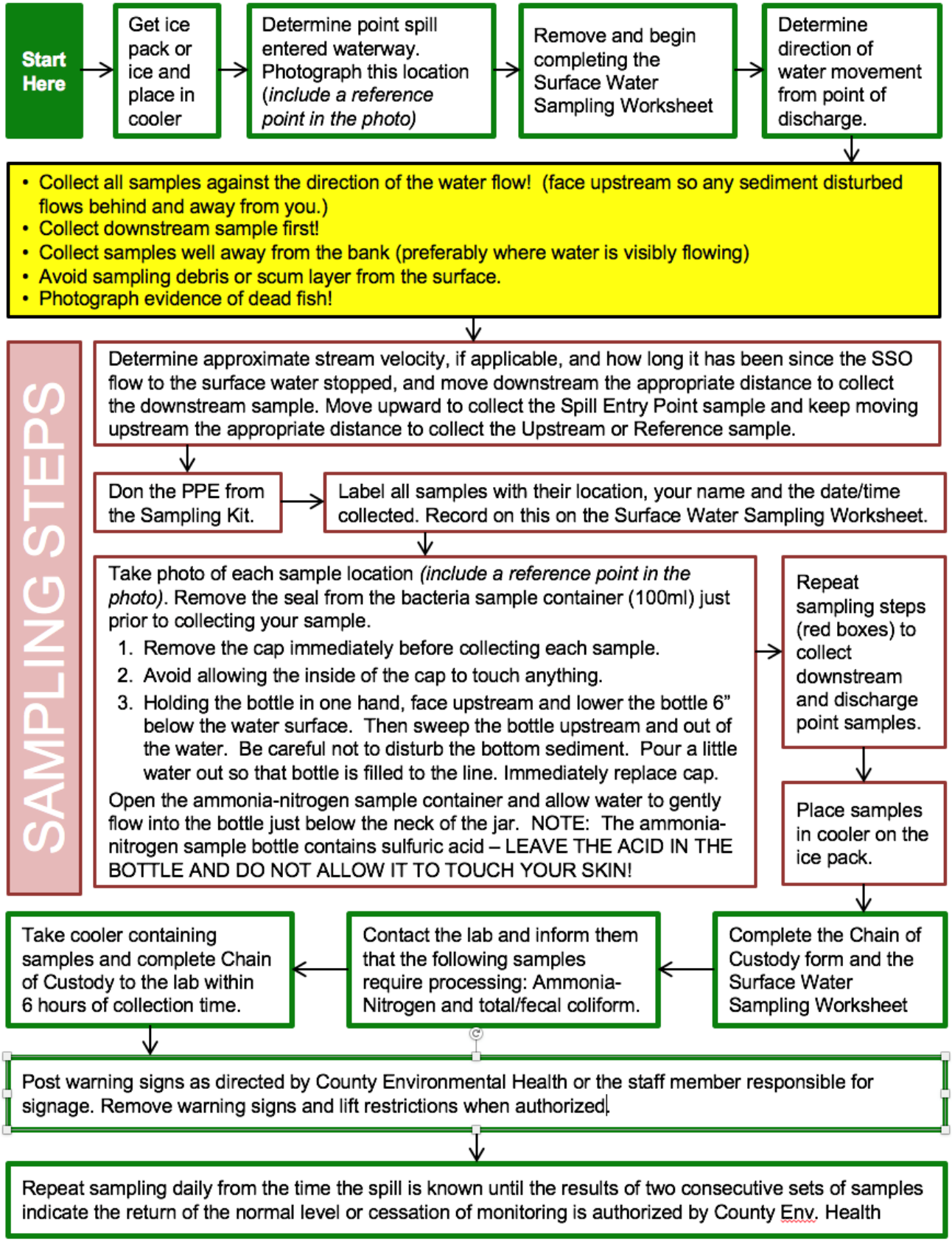
Water Quality Monitoring Plan Change Log

Date	Section(s) Changed	Summary of Change	Approved (signature)

ATTACHMENT B

Surface Water Sampling SOP

Surface Water Sampling Standard Operating Procedure



ATTACHMENT C

Sample Collection Chain of Custody Record

City of Morgan Hill Water Quality Monitoring Program Plan

Surface Water Sample Collection Chain of Custody Record

Customer Name				☐	**Hazardous Waste**	**PO#**	
Customer Address				☐	**Unknown Material**	**WO#**	
Customer Telephone		**Mail Code**		**CONTRACT LAB INFORMATION**		**Turnaround Requirement**	
Program Name				Ship to:		☐ Normal (21 days)	
Lab Program Coordinator		**Phone #**		Ship Date:		☐ Rush: _____	
						☐ Other:	
Sampled By				Courier:			

LIMS# (Issued by Lab)	**SAMPLE COLLECTION INFORMATION**						**# Containers**	**Matrix***	**Analysis Requested**					**QA/QC Requirements**	
	Date	**Time**	**Type**		**Sample Location**	**Sample Label ID**			Ammonia	Total and Fecal Coliform				☒	Lab Standard
			Composite	Grab										☐	Special (see attached)
															Remarks/Notes
			☐	☒	Upstream		2	A	☒	☒	☐	☐	☐		
			☐	☒	Entry Point		2	A	☒	☒	☐	☐	☐		
			☐	☒	Downstream		2	A	☒	☒	☐	☐	☐		
			☐	☒	Field Blank		2	O	☐	☐	☐	☐	☐	Sterile dionized water	

*Matrix: P = Potable Water, W = Wastewater, A = Ambient Water, G = Groundwater, S = Soil, B = Biosolids, I = Industrial, O = Other (specify in remarks)

Relinquished	**Date**	**Time**

Relinquished to	**Date**	**Time**

Transport/Shipping Information		
☐ USPS	☐ UPS	☐ FedEx
Tracing #:		
☐ Other:		

Surface Water Sample Collection Chain of Custody Record

Sample Receiving Documentation

Container intact? ☐ Yes ☐ No	Correct container? ☐ Yes ☐ No	Field preserved? ☐ Yes ☐ No	Custody tape intact? ☐ Yes ☐ No
Cooled? ☐ Yes ☐ No	Temp. Blank? ☐ Yes ☐ No (°C)	Comments:	
Sample distribution: ☐ Lab bench ☐ Ice chest ☐ Walk-in cooler shelf #		Disposal Date:	Disposed by: (inits.)
C-O-C Distribution Date: By: ☐ Lab Admin File ☐ Prog/proj Mgr. ☐ Lab Prog. Coord. ☐ Delivery courier ☐ Pick-up courier			

ATTACHMENT D

Surface Water Sampling Worksheet

Surface Water Sampling Worksheet

Sample Date:	Sample Time: ☐AM ☐PM	Sample Location:	
Sampler(s)' Name(s):			
Sampler(s)' Signature(s):			

What is being sampled?

☐Stream ☐Pond ☐Lake ☐River ☐Other:

Weather at time of sampling: ☐Sunny ☐Overcast

☐Sprinkling ☐Raining ☐Snowing

Was the SSO actively entering the surface water during Sampling? ☐YES ☐NO

If no, complete A-D in the gray box to the right ➔

If the SSO was not actively entering the surface water during sampling:

A. Stream Velocity: _____CFS
B. How Long Has the SSO ***NOT*** Been Entering the Surface Water?
   _____ minutes X 60sec/min = _____ seconds
C. How Far Downstream Did You Travel to Collect the SOURCE Sample?
   (A X C = Feet): _____ feet
D. Explain why you travelled a different distance, if you did, to collect the source sample:

Sample Location	# of Samples*	Photo ID# of Sample Location	Visual Observations and/or Interferences
Upstream			
Source			
Downstream			
Field Blank			

* Minimum of 2 per location

FINISH CHECKLIST	NOTES / OBSERVATIONS
☐ **All Samples Labeled with:** ☐ Date: a six-digit number indicating the year, month, day of collection	

Surface Water Sampling Worksheet

☐ Time: a four-digit number indicating military time of collection. e.g. 0954 ☐ Sample Location: Upstream, Source, or Downstream ☐ Samplers: each sampler is identified ☐ Parameter/preservative: analysis to be conducted for sample/sample preservation ☐ **Chain of Custody Completed** ☐ **Samples on Ice in Cooler** ☐ **Pictures Taken of Each Sample Location and the Photo ID/# Noted Above** ☐ **All Sampling Equipment Collected**	

ATTACHMENT E

Technical Report

Technical Report

Outline

1. Introduction

   Agency/system description

2. SSO Technical Report - Contents and Responses

   a. Causes and Circumstances of the SSO

      i. Detailed explanation of how and when SSO was discovered

      ii. Diagram indicating SSO "Cause point", appearance point, and final destination (use attachments, maps and diagrams as needed)

      iii. Detailed description of methodology employed and available data used to calculate the SSO volume and any volume recovered

      iv. Detailed description of the cause(s) of the SSO

      v. Copies of the original field crew records used to document the SSO (attachment)

      vi. Historical maintenance records for the lines involved in the cause of the SSO (attachment)

   b. Agency's Response to the SSO

      i. Chronological narrative description of actions taken by agency to terminate the SSO

      ii. Description of how the OERP was implemented to respond to and mitigate any impacts of the SSO

      iii. Final corrective action(s) completed and/or planned, including a schedule for actions not yet completed

   c. Water Quality Monitoring

      i. Description of all water quality sampling activities conducted, including analytical results and evaluation of the results

      ii. Detailed location map illustrating all water quality sampling points

3. Conclusions

ATTACHMENT F
SURFACE WATER MAPS

Appendix G: Listing of SSMP Activities and Deadlines

City of Morgan Hill
Sanitary Sewer Management Plant
List of Activities and Deadlines
December 2017

Page Number	Schedule Date	Deliverable Decription	Assigned Responsibility
30	7/19	Conform and repair sewer system maps	
31	6/18	Train City staff on new SOPs	
32, 52	12/19	Prepare SOP for addition/removal of lines from high frequency list	
	10/18	Update City website with SSMP & supporting documents, municipal code, and State reporting webites.	
	12/22	Complete repair and replacement projects defined in 2017 Master Plan	
34	12/20	Design, construct and operate new parallel sewer trunk	
35	7/19	Develop standard return frequency for full pipe assessment	
	10/20	Complete a condition assessment of collection system	
36	7/19	Develop manhole inspection program	
38	7/19	Update force main materials column in Table IV-4	
38	Annually	Inspect/document force main alignments	
41	7/19	Develop siphon condition and maintenance program	
42	Annually	Conduct staff training - SSMP, OERP, WQMP	
42	Annually	Conduct field exercise on volume esimation/containment	
42	Annually	Conduct confined space entry training and certifiecation	
44	7/19	Evaluate need for City lift station standards/details	
54	7/22	Update sewer system master plan	
54	7/22	Update SSMP, OERP and WQMP	
54	7/22	City Coucil adoption of SSMP revisions - every five years	
56	Annually - FY	Evaluate collection system performance	
57-60	Annually - FY	Update performance graphs and tables Element IX	
61	Annually - FY	Place Annual Perfromance Report in Appendix A	
63	7/19, 21,23, 25	Conduct biannual SSMP Audit	
63	7/19, 21,23, 25	Prepare certified SSMP Audit Report - File App B	
63	7/19, 21,23, 25	Update SSMP Change Log	
64	19, 24, 29, etc.	Revise/adopt SSMP by City Council	
65	Annually - FY	Prepare/Submit Collection System Performance Report to City Council	
65	As needed	Document all communications/meetings with SCRWA	