



# **CITY OF MORGAN HILL**

## **Sanitary Sewer Management Plan Revisions**

**December 2022**

**City WDID #3SSO10332**

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# **1.0 Introduction**

## **1.1. 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.

## **1.2. 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 163 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-five (25) siphons with a total length of 1.14 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.

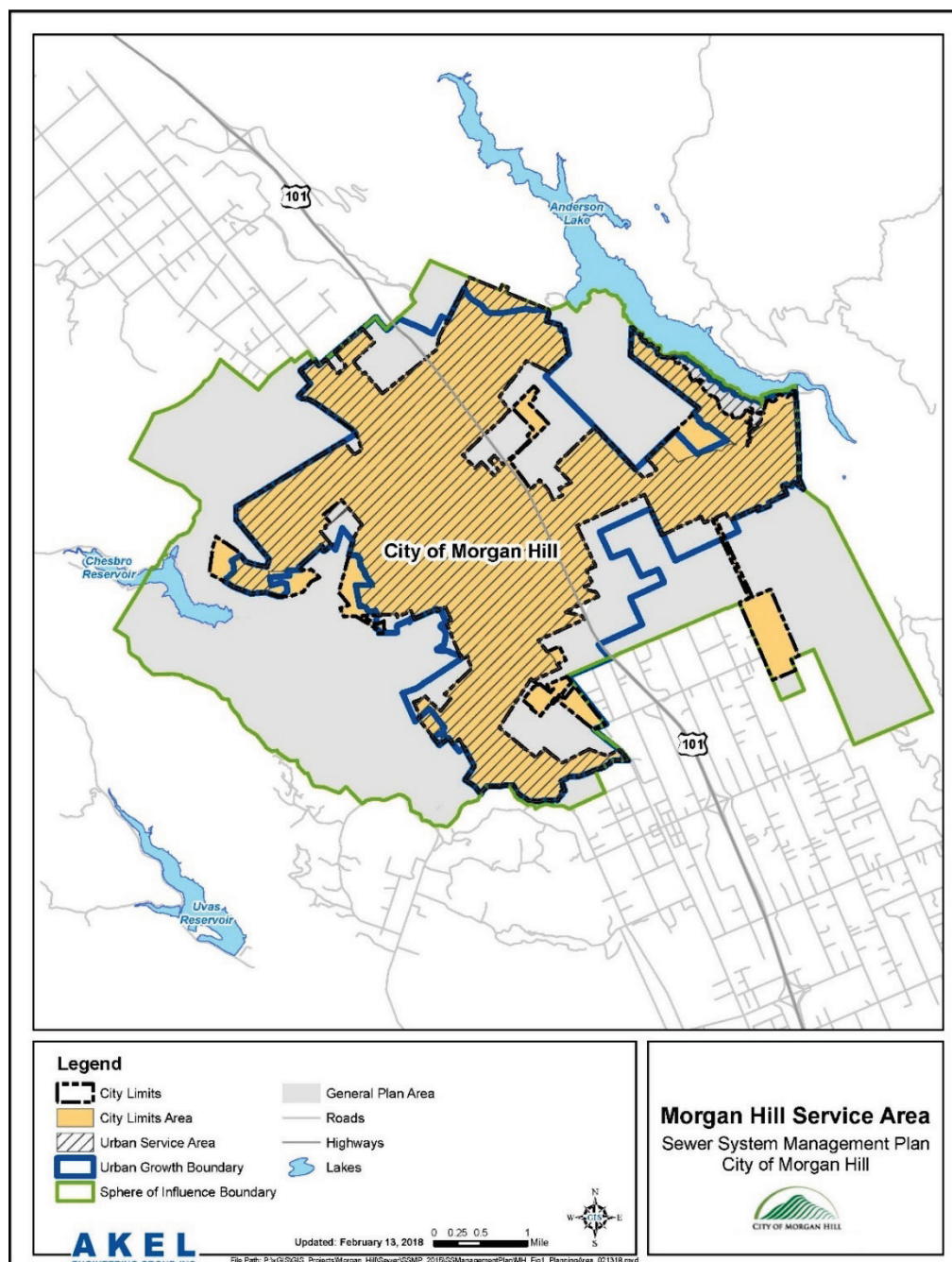
Intro Figure 2 contains an overview map of the City's Regional Board Reporting Areas.

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

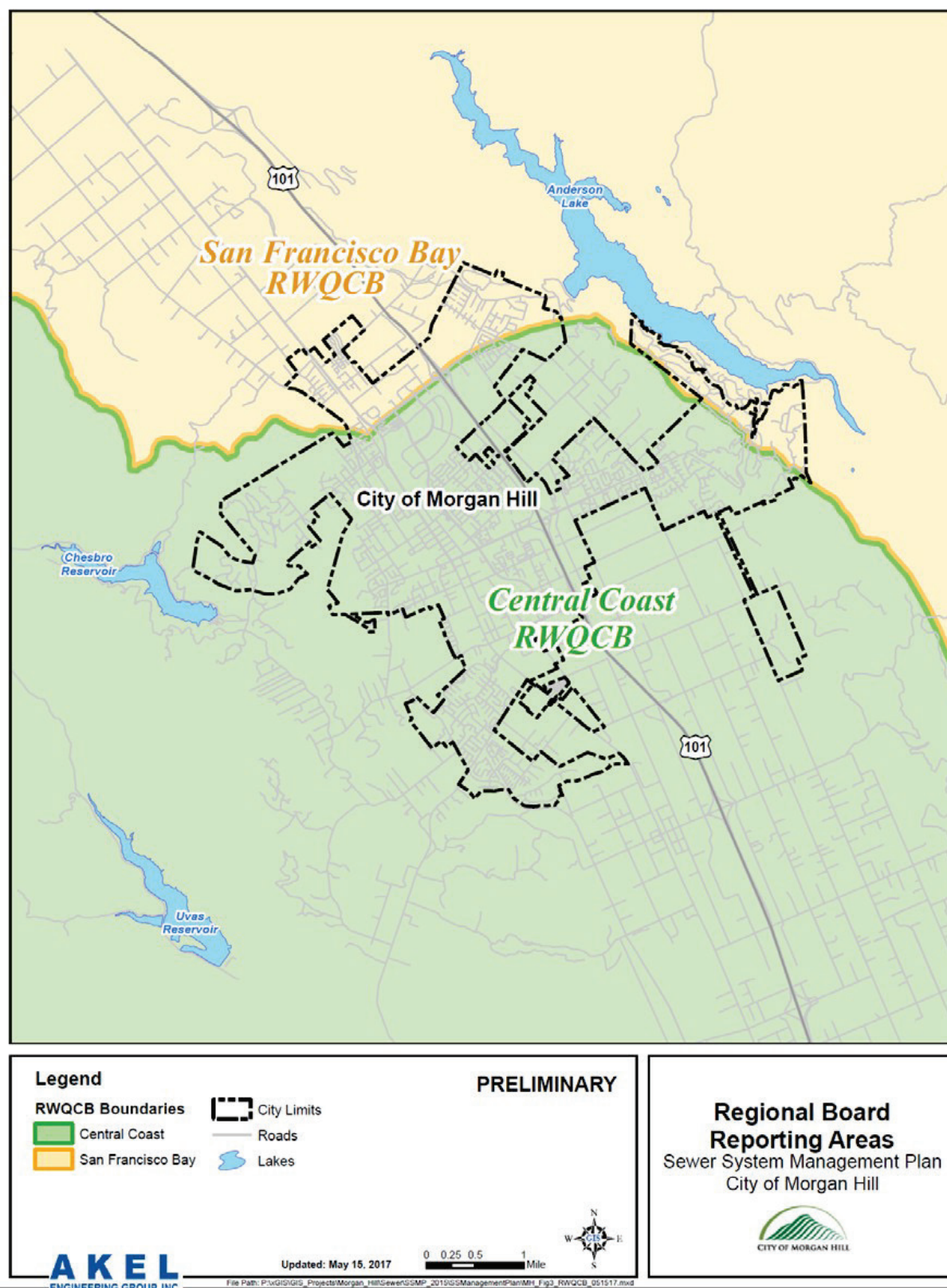
**Intro Table 3** provides the installation age distribution of the City's collection system.

**Intro Table 4** provides the system information of the sewer 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, %
< = 6	1,377	309,830	36%
8	1,530	344,256	40%
9 - 18	689	154,915	18%
19 - 36	230	51,638	6%
> 36	0	0	0%
<b>Total</b>	<b>3,825</b>	<b>860,640</b>	<b>100.0</b>
<b>Total, miles</b>		<b>163.00</b>	

Source: Morgan Hill Infrastructure File dated 6-3-22

**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	10.93
PVC	291	90,881	10.56
RPP	124	21,490	2.50
ACP	152	21,595	2.51
Unknown	2658	632,597	73.50
<b>Total</b>	<b>3762</b>	<b>833,554</b>	<b>100.00</b>
<b>Total, miles</b>		<b>163.00</b>	

Source: Morgan Hill Infrastructure File dated 6-3-22

**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	18	28.81
16 – 35	1980 – 1999	24	39.46
36 – 55	1960 – 1979	24	39.46
56 – 75	1940 – 1959	19	31.57
76 – 95	1920 – 1939	15	23.68
95 – 115	1900 – 1919	0	0
>115	Before 1900	0	0
<b>Total, miles</b>			<b>163.00</b>

Source: Morgan Hill Infrastructure File dated 6-3-22

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

<b>Siphon Title/Name</b>	<b>Location</b>	<b>Length Linear Feet x Number of Pipes</b>	<b>Total Length, linear feet</b>	<b>Size, inches</b>	<b>Pipe Material</b>
2nd - 3rd Invert	75 2nd St.	57	57	6	Clay
2nd - Del Monte	17415 Del Monte	148	148	6	NA
50 W. Edmundson at Creek	Same	149	149	15	NA
Barrett at Butterfield	16160 Barrett	162	162	18	PVC
Barrett at Creek by Hill Road	16220 Barrett	141	141	8	Clay
Barrett at Freeway	965 Barrett	449	449	18	NA
Cochrane across 101 Freeway (Target)	900 Lightpost	538 x 2	1076	1076	PVC
East Dunne at Freeway	Same	788	788	10	NA
Edes at Creek	Same	83	83	12	NA
Fountain Oaks - Hill Road	Same	91	91	6	NA
Gallant Fox - Easy Street	Flygt Sewer Station Pump	331	331	10	Clay
Hillwood - Hale	18004 Hillwood	209	209	8	NA
Little Llgas Creek - Monterey San Martin Bridge (East End)	Same	283 x 3	849	14/12/14	NA
Little Llgas Creek - Monterey San Martin Bridge (West End)	Same	186 x 2	372	16-Oct	NA
Main - Hale	Same	66	66	15	NA
Monterey - 4th NB/SB	17205 Monterey	58	58	6	Clay

Siphon Title/Name	Location	Length Linear Feet x Number of Pipes	Total Length, linear feet	Size, inches	Pipe Material
NE Side Cochrane at Freeway	1031 Cochrane	145	145	10	PVC
O Lift Station	14565 Middle	110	110	6	Clay
San Pedro-Butterfield	340 San Pedro	294	294	10	NA
W Lift Station	15505 Watsonville	178	178	12	NA
Warren Ave at Creek	115 Warren	0	0	6	Clay
Watsonville at Monterey	Same	64	64	10	NA
West Dunne - Monterey	35 W Dunne	38	38	8	Clay
Cochrane Rd-Santa Clara Valley Lift Station	2219 Cochrane Rd	164	164	8"	Truss
Hale Ave-Longview	17845 Hale Ave	24	24'	15"	Clay
<b>Total, linear feet</b>			<b>6,022</b>		
<b>Total, miles</b>			<b>1.14</b>		

### 1.3. 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 workflow 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 1<sup>st</sup> and ending June 30<sup>th</sup>.

**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.

## **1.4. 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:

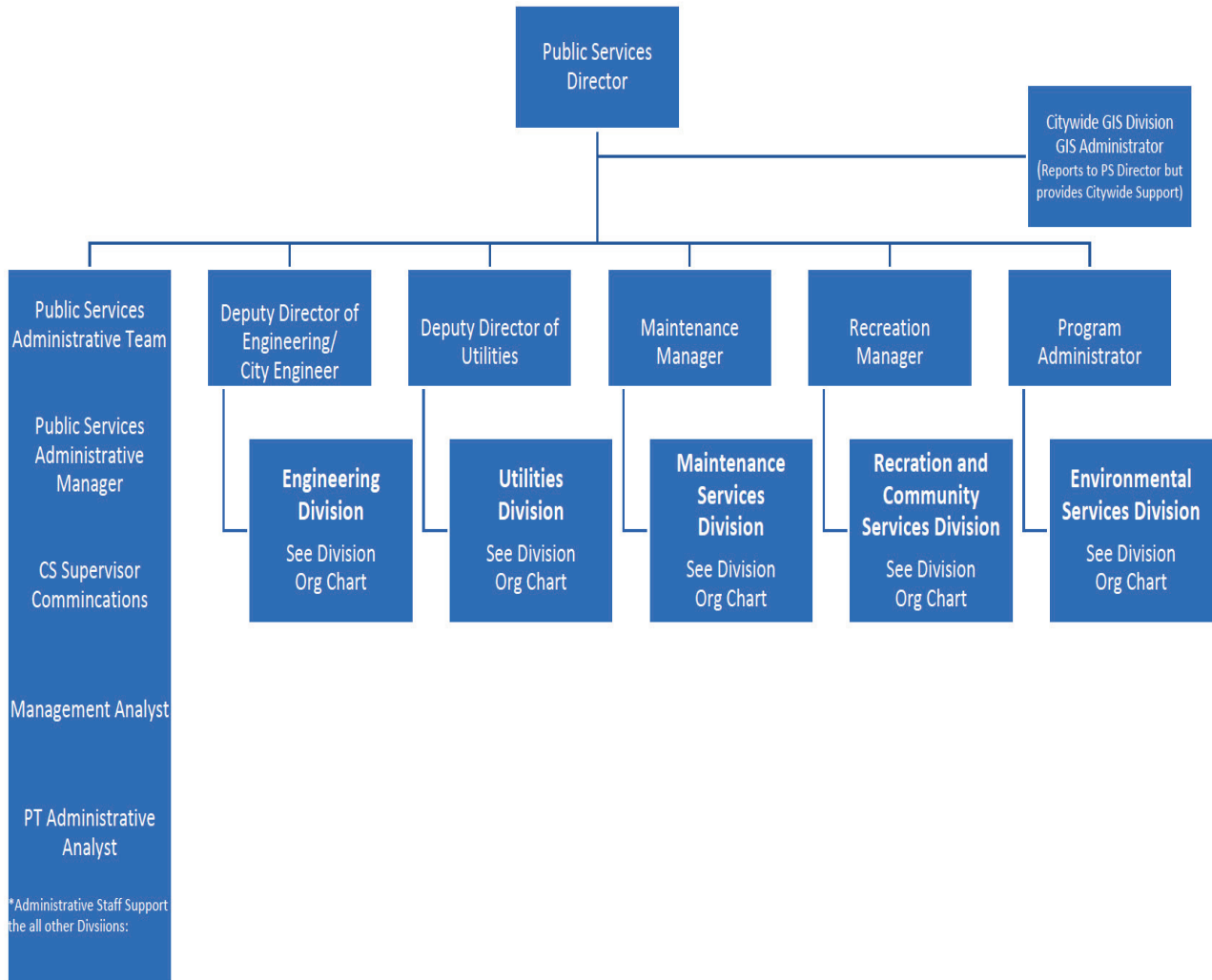
- a. The name of the responsible or authorized representative as described in Section J of this Order.
- b. The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority 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

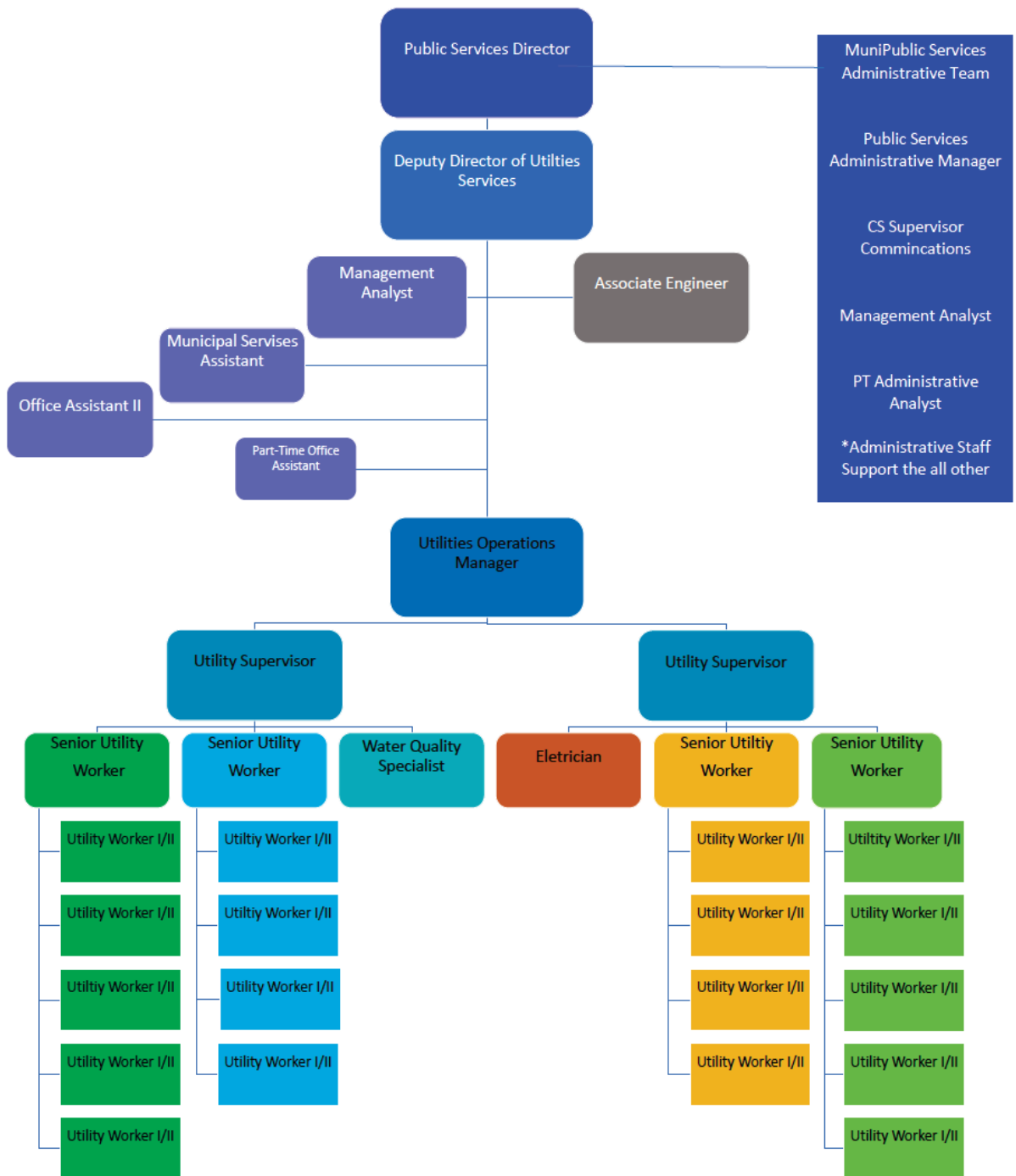
The sanitary sewer collection system is operated and maintained by the Utilities Division of the Engineering and Utilities Department with the direct assistance of the Engineering Division for long range planning and capital program management. In addition, is also supported by City Risk Management, 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 Public Services and Utilities Division Organization Charts**

### Public Services Organization Structure



Utilities Division 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.

**Public Services Director – (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 (LRO)** – The Deputy Director of Utility Services is a mid-management position 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 Public Services 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 Public Services Director.

**Utilities Operations Manager (DS)** – 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 Utility Supervisor – (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.

**Senior Utility Worker (DS)** – 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.

**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 (LRO)** – 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 Public Services Director.

**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 of 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** below.

**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	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
1	Goals	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
2	Organization	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
3	Legal Authority	Public Services Director	408-782-9154	<a href="mailto:chris.ghione@morganhill.ca.gov">chris.ghione@morganhill.ca.gov</a>
4	O & M Program; Appendices IV-1 to IV-5	Utilities Operations Manager	408-310-4184	<a href="#">Vacant</a>
5	Design and Performance	Deputy Director of Engineering/City Engineer	408-310-4640	<a href="mailto:scott.creer@morganhill.ca.gov">scott.creer@morganhill.ca.gov</a>
6	OERP	Operations Manager	408-310-4184	<a href="#">Vacant</a>
7	Fats, Oils and Grease (FOG) Control	SCRWA Pretreatment	408-848-0480	<a href="mailto:Saeid.vaziry@ci.gilroy.ca.us">Saeid.vaziry@ci.gilroy.ca.us</a>
8	System Evaluation and Capacity Assurance	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
9	Monitoring, Measurement and Program	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>

Element	Element Name	Responsible City Official	Phone	Email
10	Program Audits	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
11	Communications Program	Communications and Engagement	408-310-4706	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
App A	SSMP Council Adoption Documents	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
App B	SSMP Audit Reports	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
App C	SSMP Audit Checklist	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
App D	SSMP Change Log	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
App E	Overflow Emergency Response Plan	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
App F	Water Quality Monitoring Plan	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>
App G	Listing of SSMP Activities & Deadlines	Deputy Director for Utility Services	408-310-4166	<a href="mailto:James.sylvain@morganhill.ca.gov">James.sylvain@morganhill.ca.gov</a>

#### 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 Division 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 D.

## 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
Require proper installation, testing, and inspection of new and rehabilitated sewers.	MHMC 13.16.010 MHMC 13.20.355 City Design and Construction Standards

Requirement	Legal Authority Reference
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** below. The City of Morgan Hill has 100% responsibility for the maintenance of the initial 2020 feet of the trunk sewer. The City has entered into a Settlement Agreement with California River Watch on October 24, 2017, that requires the City to develop and implement several new program documents and improvements in the City condition assessment program. All required activities were completed by October 2021.

**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

Reach	Capacity Total, mgd	Morgan Hill		Gilroy	
		Capacity	O&M Responsibility, Percentage	Capacity	O&M Responsibility, Percentage
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 workflow 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 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 need further revisions and confirmation which will be completed as part of the migration to the new asset management and work order system for both the sanitary sewer and the storm systems.

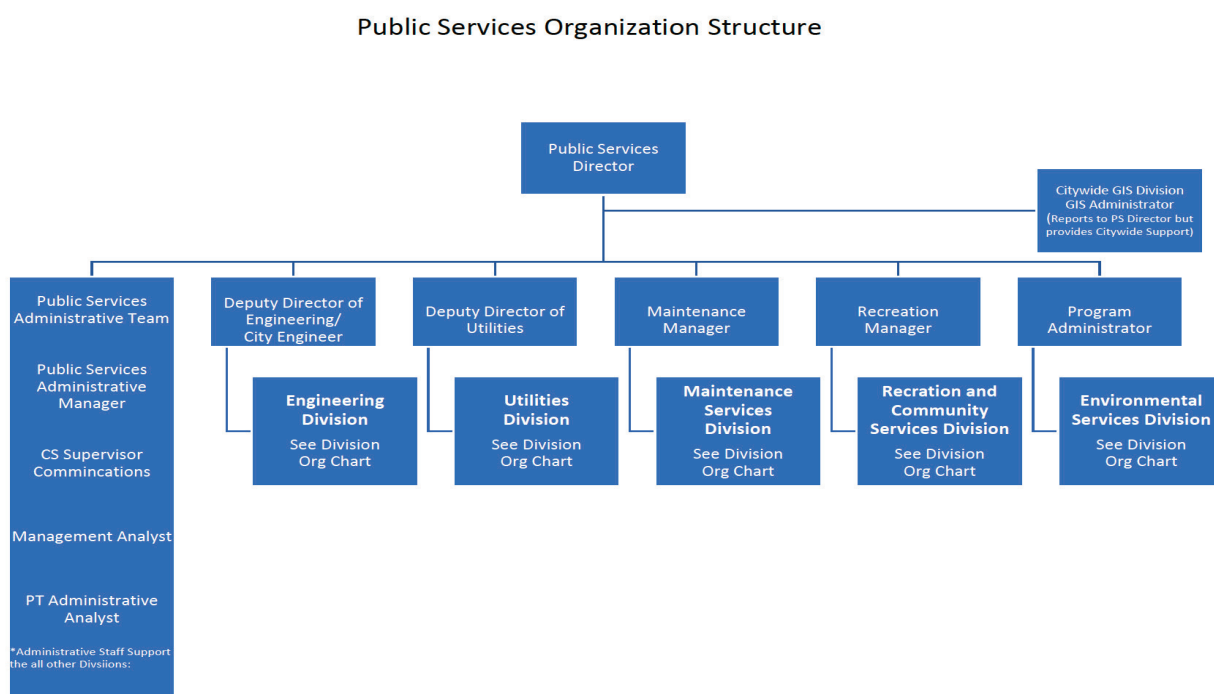
## IV.2: Preventive Operation and Maintenance

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 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 Utilities Division 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 Supplement 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 schedule of regular line cleaning. It anticipates annually cleaning approximately 600,000 linear feet (114 miles) of the system.

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** below. Large diameter pipes 16 inch in diameter or greater are cleaned using service contractors rather than City staff.

**Table IV – 1: Historical Regular Line Cleaning Results**

Fiscal Year	Line Cleaning Results, linear feet	Line Cleaning Results, miles	Percent of System
2020/21	622,180	117.84	74.63
2019/20	594,420	112.58	71.30
2018/19	452,703	85.74	54.30
2017/18	649,668	123.04	77.95
2016/17	363,622	68.87	43.61
2015/16	445,843	84.44	53.84
2014/15	587,687	111.3	70.49
2013/14	372,834	70.6	44.72
2012/13	649,943	123.10	77.96

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.

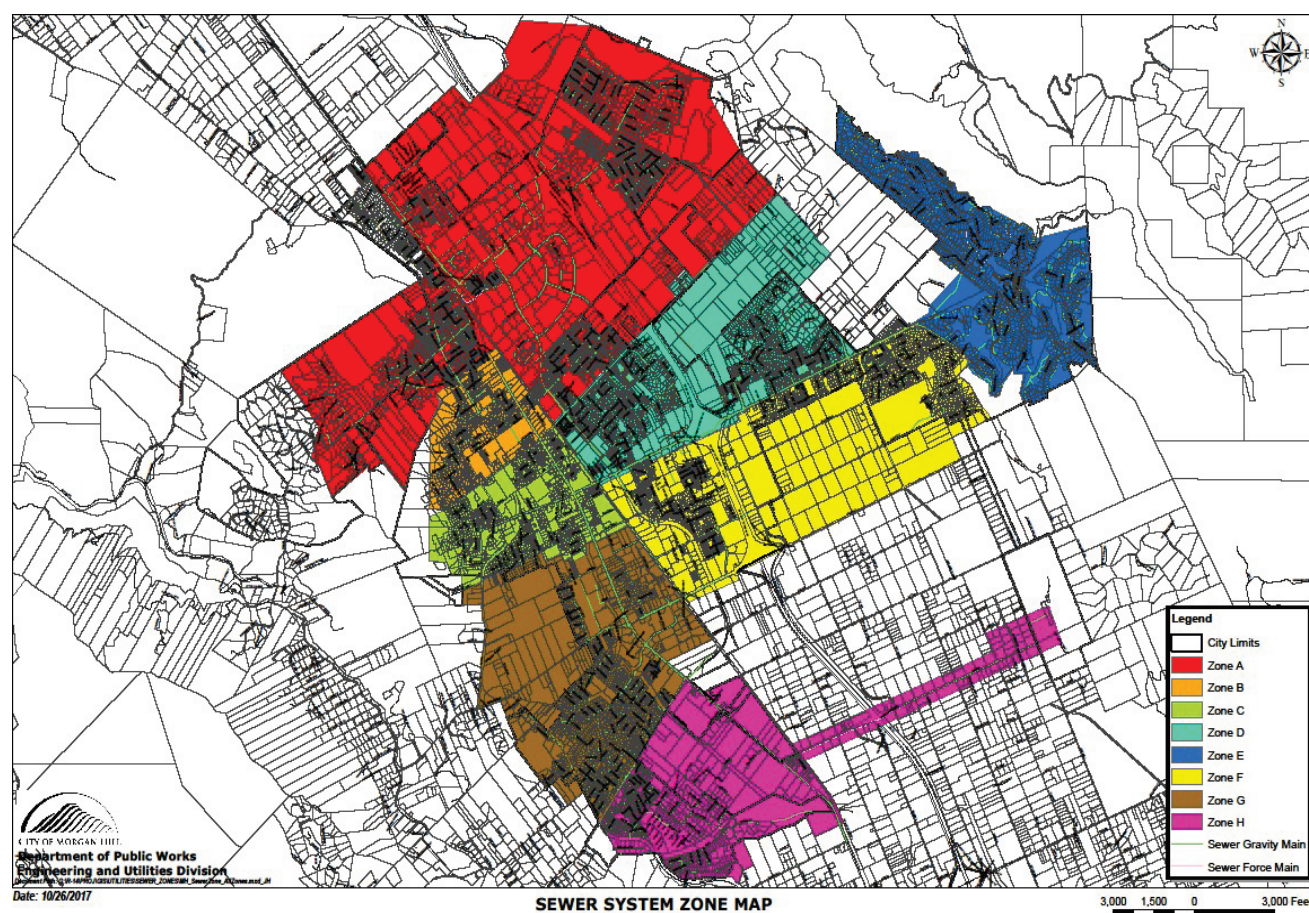
The City staff may develop a standard procedure for the addition and removal of lines from the high frequency program. This will assure proper cleaning efficiencies and will assist with a better understanding of the requirements for high frequency maintenance activities and may lead to repair or pipe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

**Figure IV – 2: Standard Measures of Observed Results**

	Clear	Light	Moderate	Heavy
<b>Debris</b>	Code: <b>CL</b> <ul style="list-style-type: none"> <li>No observable debris</li> </ul>	Code: <b>DL</b> <ul style="list-style-type: none"> <li>Minor amount of debris</li> <li>15 minutes or less to clean</li> <li>1 pass</li> </ul>	Code: <b>DM</b> <ul style="list-style-type: none"> <li>Less than 5 gallons of debris per line segment</li> <li>15-30 minutes to clean</li> <li>2-3 passes</li> </ul>	Code: <b>DH</b> <ul style="list-style-type: none"> <li>More than 5 gallons of debris per line segment</li> <li>More than 30 minutes to clean</li> <li>More than 4 passes</li> <li>Operator concern for future stoppage</li> </ul>
<b>Grease</b>	Code: <b>CL</b> <ul style="list-style-type: none"> <li>No observable grease</li> </ul>	Code: <b>GL</b> <ul style="list-style-type: none"> <li>Minor amounts of grease</li> <li>15 minutes or less to clean</li> <li>1 pass</li> </ul>	Code: <b>GM</b> <ul style="list-style-type: none"> <li>Small “chunks”</li> <li>No “logs”</li> <li>15-30 minutes to clean</li> <li>2-3 passes</li> </ul>	Code: <b>GH</b> <ul style="list-style-type: none"> <li>Big “chunks” or “logs”</li> <li>More than 30 minutes to clean</li> <li>More than 4 passes</li> <li>Operator concern for future stoppage</li> </ul>
<b>Roots</b>	Code: <b>CL</b> <ul style="list-style-type: none"> <li>No observable roots</li> </ul>	Code: <b>RL</b> <ul style="list-style-type: none"> <li>Minor amounts of roots</li> <li>15 minutes or less to clean</li> <li>1 pass</li> </ul>	Code: <b>RM</b> <ul style="list-style-type: none"> <li>Thin stringy roots</li> <li>No “clumps”</li> <li>15-30 minutes to clean</li> <li>2-3 passes</li> </ul>	Code: <b>RH</b> <ul style="list-style-type: none"> <li>Thick roots</li> <li>Large “clumps”</li> <li>More than 30 minutes to clean</li> <li>More than 4 passes</li> <li>Operator concern for future stoppage</li> </ul>
<b>Other: Pipe wall fragments Soil/dirt/ rock</b>	Code: <b>CL</b> <ul style="list-style-type: none"> <li>No observable materials</li> </ul>	Code: <b>OL</b> <ul style="list-style-type: none"> <li>Specify material (if possible)</li> <li>Minor amounts of material</li> </ul>	Code: <b>OM</b> <ul style="list-style-type: none"> <li>Specify material</li> <li>Less than 5 gallons of material per line segment</li> </ul>	Code: <b>OH</b> <ul style="list-style-type: none"> <li>Specify material</li> <li>More than 5 gallons of material per line segment</li> <li>Operator concern for future stoppage</li> </ul>
This table was adapted from <i>Best Practices Manual: Hydroflush Cleaning of Small Diameter Sewers</i> , California Collection System Collaborative Benchmarking Group, February 2001.				

**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 Plant 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***

The assessments of the entire system will be conducted approximately every 6 years and will follow the NASSCO standard rating systems for pipes and manholes. The historical calendar year results of the City CCTV efforts are shown below:

**Table IV – 3: Historical Results of Closed Circuit Television**

<b>Calendar Year</b>	<b>CCTV Performance , linear feet</b>	<b>Percent of the System</b>
2021	187,737	22.52
2020	226,049	27.11
2019	92,678	11.12
2018	101,239	12.14
2017	Equipment stolen	0.0
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	82,746	9.98

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 linear feet of trunk sewer.

#### ***IV.2.1-3: Condition Assessment-Manhole Inspection Program***

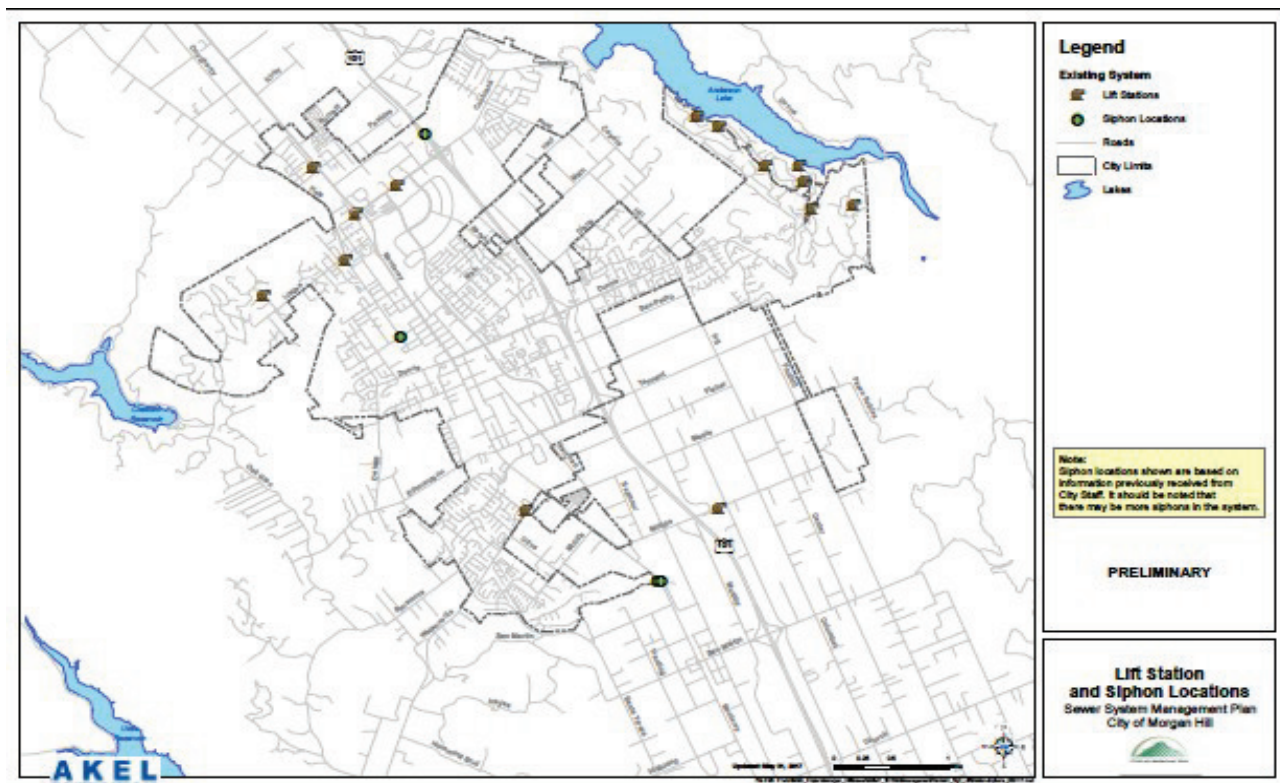
The City has defined a formal manhole inspection program based upon the NASSCO manhole rating system as part of the regular cleaning operations. All problem conditions noticed during cleaning are reported and appropriate repairs contracted to service contractors. The City is in the process of implementing 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.

#### 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 checked 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 **Supplement 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**

Lift Station Name	Location	Construct Date	No. Pumps	Pump GPM	Pump Manufacturer	Pump HP	Standby Generation - KW
A Lift Station	17670 RACON 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	2005	2	287	Flygt	10	40

Lift Station Name	Location	Construct Date	No. Pumps	Pump GPM	Pump Manufacturer	Pump HP	Standby Generation - KW
	MONTEREY RD.						
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

Name of Lift Station Associated with Force Main	Year of Construction	Force Main Asset Information		
		Length (linear feet)	Size (inches)	Material Type*
O Lift Station	N/A	4086'	6"	TBD
P Lift Station	2009	27'	4"	TBD
W Lift Station	1993	70'	6"	TBD
<b>Total, Linear Feet</b>		<b>16,610</b>		
<b>Total, Miles</b>		<b>3.15</b>		

\* City to determine material in future work.

#### IV.2.4: Collection System Siphons

As described in the SSMP Introduction, the City also operates twenty-five (25) siphons throughout the collection system. The City has developed a program to address the condition and maintenance of the siphons now in the collection system. The program includes regular quarterly and biannual cleaning based upon size and historical operational history.

#### IV.2.5: Root Foaming

The City utilizes chemical root control contractors to address root control issues that are identified from the cleaning operations and in areas known to have historical root concerns. Areas with root control issues are aggressively maintained and assessed.

#### 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 lateral sewer discharges (PLSD) as they become aware of the

overflows. The City Council has adopted a new proactive sewer lateral inspection program that will become effective on June 1, 2022. This program requires private lateral owners to inspect laterals based upon defined criteria in the lateral ordinance available on the City website.

#### IV.2.7: Rehabilitation and Replacement Program

The City's Capital Improvement Plan for the next five (5) years was updated in August 2019 and 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 completed a new Sewer System Master Plan Update in 2019 that includes a list of all known and capacity identified improvements to collection system lines, lift 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 Supplement 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 to renew their certificates. The City provides financial incentives to its employees to become certified.

The City conducts 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 regular 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 Supplement 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 **Supplement 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 **Supplement 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.
- City of Morgan Hill Sewer System Master Plan, Errata Sheet for 2017 Sewer System Master Plan, August 2019, AKEL Engineering Group, Inc.

**Supplement 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	

Security Features	
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	

Safety Features and Equipment	
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	

Building/Structure	
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	

Electrical and Switch Gear	
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	

Pumps	
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	

Other	
Support systems (air, water, etc.)	
Signage	
Employee facilities	
Sump pump	
Overhead crane	
Portable pump connections	
Portable pumps	
Comments	

**Supplement IV.2: City Policy Memorandums (Standard Operating Procedures)**

<b>Policy Memo Number</b>	<b>Title</b>	<b>Date</b>
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

**Supplement IV.3: Capital Improvement Program Budget in \$1000's**

<b>Project Number</b>	<b>Project Title</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>2024-25</b>	<b>2025-26</b>	<b>Total</b>
302018	Sewer System Repairs and Replacements	4,396,786	2,393,700	2,393,700	2,393,700	2,393,700	13,971,586
308a08	New Trunk Line	100,000	14,500,000	14,500,000	--	--	29,100,000
315006	New/Replacement Sewer Lines	--	2,474,622	--	--	--	2,474,622
317a18	Wastewater Planning	275,000	225,000	75,000	--	--	575,000
	<b>Total</b>	<b>4,771,786</b>	<b>19,593,322</b>	<b>16,968,700</b>	<b>2,393,700</b>	<b>2,393,700</b>	<b>46,121,208</b>

**Supplement 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 10/4/21

**Supplement IV.5: Critical Sewer System Replacement Parts Inventory**

<b>Contingency Equipment and Replacement Inventories</b>			
<b>Qty</b>	<b>Part No.</b>	<b>Description</b>	<b>Location</b>
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	0	3126 Flygt Spare Sewer Station Pump	Bus Yard
1	I	3127 Flygt Spare Sewer Station Pump	Bus Yard
2	14407129	MINI-CAS 120V	Truck08155
3	298 6200	SHIMS	Truck07152
3	298 6201	SHIMS	Truck07152
3	298 6202	SHIMS	Truck07152
0	303 5000	LIFTING HANDLE S.S.	
0	303 6000	IMPELLER PULLER 435	
4	306 0002	GROMET FOR HANDLE	Truck07152
0	309 0900	IMPELLER 433 WHITE 6"	
0	33813 00	WASHER IMPELLER	
0	379 2900	IMPELLER 467 N/A	
0	384 63 00	WEAR RING, STATIONARY BRASS	
0	385 4600	IMPELLER 461	
2	385 6601	INSPECTION SCREW TOOL	Truck07152
4	385 6700	INSPECTION SCREW STATOR	Truck07152
0	398 8804	IMPELLER 638	
0	398 9200	WEAR RING, STATIONARY BRASS	
0	398 9202	WEAR RING, STATIONARY BRASS	
0	408 5110	VOLUTE SH	
	4270400	WASHER IMPELLER	Truck07152
4	428 2205	INSPECTION SCREW OIL	Truck07152
0	438 93 00	IMPELLER 435 NEVER-CLOG	
0	438 9900	IMPELLER 433 NEVER-CLOG	
0	4391200	IMPELLER	

Contingency Equipment and Replacement Inventories				
Qty	Part No.		Description	Location
			481 REPLACES 467	
0	4391400		IMPELLER 483 REPLACES 461	
1	44143 00		LIFTING CHAIN GRIP	Truck07152
0	4618000		IMPELLER 434	Bus Yard
0	4651400		VOLUTE HT	
0	46514 0		I Lift Station pump 1 Volute	
0	46514	22	I Lift Station pump 2 Volute	
0	4771100		LIFTING HANDLE S.S.	
4	493 3904		IMPELLER 267	Bus Yard
0	493 3905		IMPELLER 268	
2	582 88 31		FLOAT65FT.	PM Bay
4	64213 00		INSPECTION SCREW	Truck07152
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	67847 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	

Contingency Equipment and Replacement Inventories			
Qty	Part No.	Description	Location
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	

Contingency Equipment and Replacement Inventories			
Qty	Part No.	Description	Location
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: 10/4/21*

## **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.

## **V.3: 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.

### 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 E.

### **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 113 food service establishments (FSEs) in the City of Morgan Hill. The City and SCRWA have proactively worked to reduce the impacts of FOG from 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
11/12	3
12/13	3
13/14	4
14/15	0
15/16	0
16/17	1
17/18	1
18/19	2
19/20	0
20/21	2
Total	16

## **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 and from the SCRWA Industrial Wastewater Division or Environmental Program 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 limits the discharges that can be made to the Morgan Hill sewer system.

**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 2019 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.

## **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 and that plan was updated in August 2019. The most recent Plan includes a program for capacity enhancements through the planning horizon year of 2025-26. 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 2025-26.

The updated 2019 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.<sup>1</sup> 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 documented 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.<sup>2</sup>

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 updated 2019 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 landuse 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, respectively. Flows measured at the SCRWA in 2016 were 3.7 MGD and 7.3 MGD. Dryweather 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 lift stations in the City.

### **VIII.3: Capacity Enhancement Measures – Capital Improvement Program**

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<sup>1</sup> *Sewer System Master Plan, August 2017, AKEL Engineering Group, Page ES-1*

<sup>2</sup> *Sewer System Master Plan, August 2017, AKEL Engineering Group, Transmittal Letter dated August 16, 2017*

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 2021/22 to 2025/26 in Supplement IV-3.

The City's Capital Improvement Program Budget is included as **Supplement IV – 3**.

#### **VIII.4: Schedule**

The current schedule for the City's capacity enhancement projects does not include any capacity related improvement projects in **Supplement 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, Errata Sheet 2017 Sewer System Master Plan, August 2019
- 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:

- Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
- Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
- Assess the success of the preventative maintenance program;
- Update program elements, as appropriate, based on monitoring or performance evaluations; and
- 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.
- Private Lateral Sewage Overflows – number and volumes
- Cleaning and CCTV annual performance results
- FOG program activities and FSE permitting performance.

### IX.2: Baseline Performance

The City has performance measures in place, and it will evaluate its performance regularly. The historical performance is shown in the tables below separately for gravity mains/lift stations/force mains and lower laterals through fiscal 20/21. These tables will be updated regularly.

### 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
2018	5	0	0
2019	9	0	1
2020	7	1	0
2021	4	0	0
<b>Total</b>	<b>80</b>	<b>3</b>	<b>1</b>

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

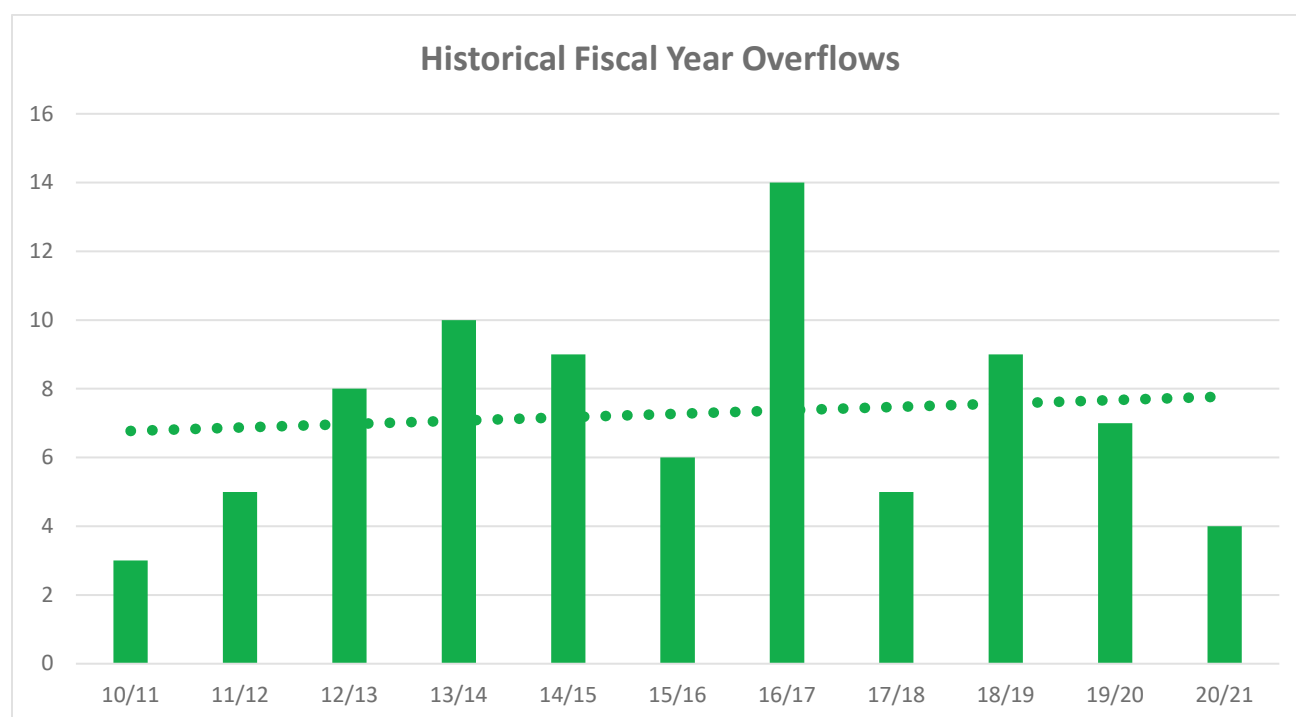


Figure IX – 2: Trend in all SSOs per Fiscal Year

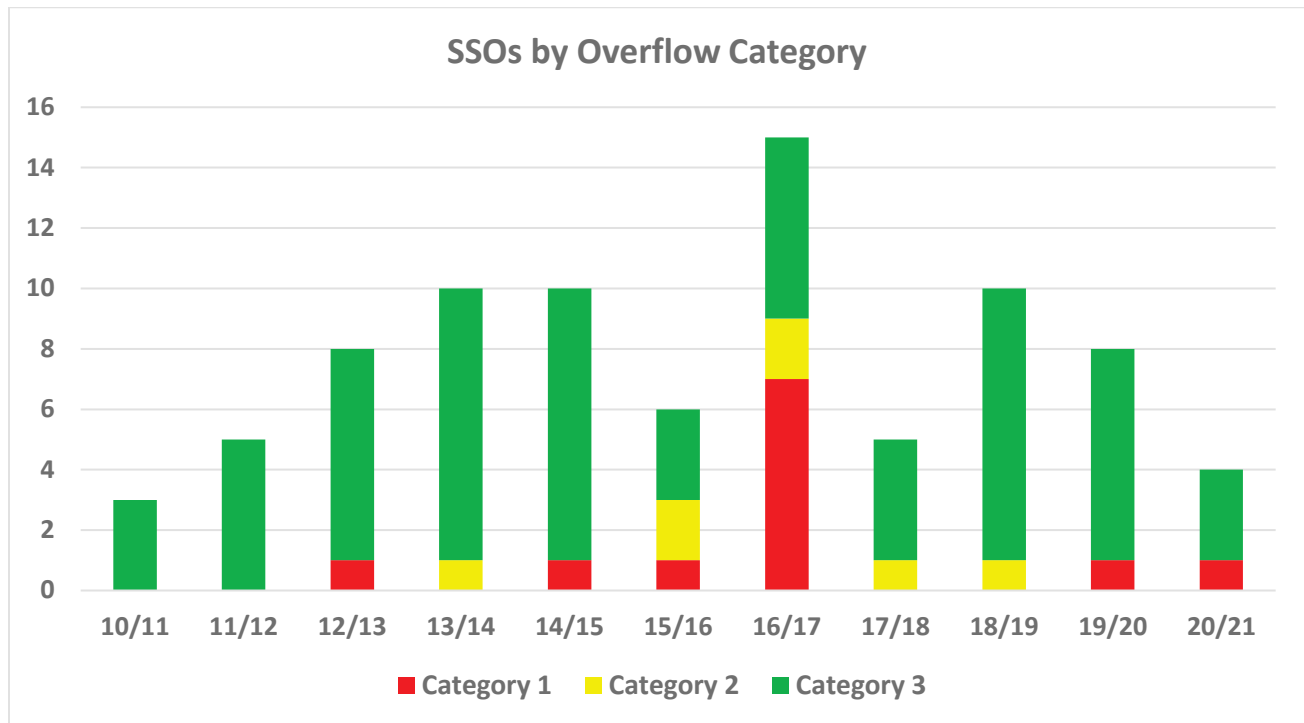
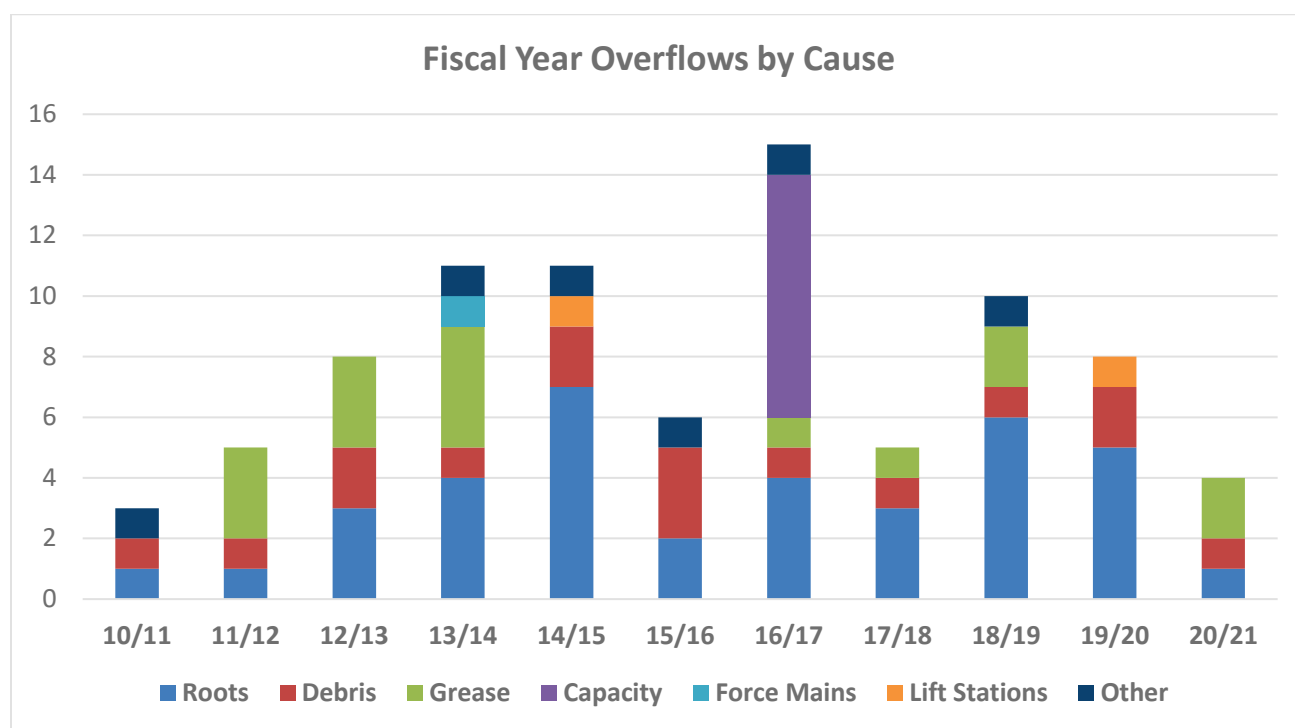


Table IX – 2: FY SSOs by Cause

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
2018	3	1	1	0	0	0	0	5
2019	6	1	2	0	0	0	1	10
2020	5	2	0	0	0	1	0	8
2021	1	1	2	0	0	0	0	4
<b>Total</b>	<b>37</b>	<b>16</b>	<b>16</b>	<b>8</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>86</b>

**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
2018	2,246	1,771	0	99	0
2019	2,987	2,043	5	68	0
2020	2,288	1,427	982	62	42

Figure IX – 4: Trend in Volumes Spilled Fiscal Year

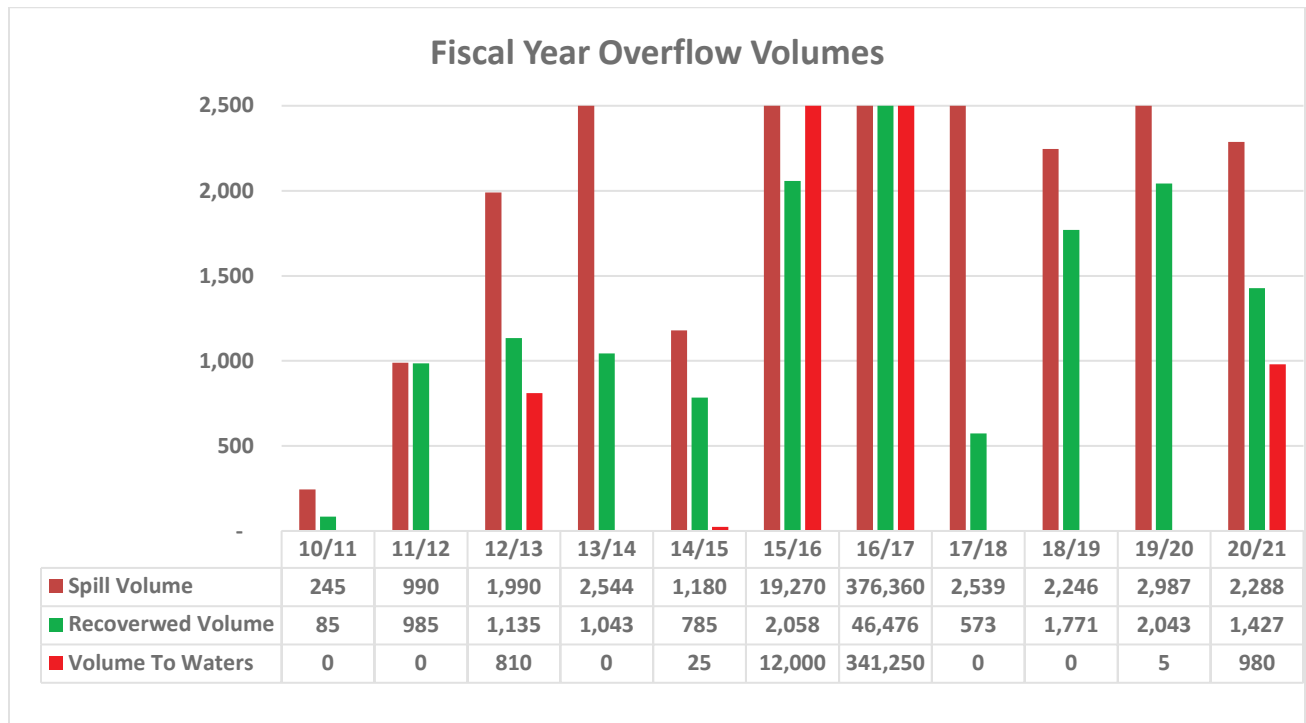


Figure IX – 5: Trend in SSOs by Size of Volume Spilled

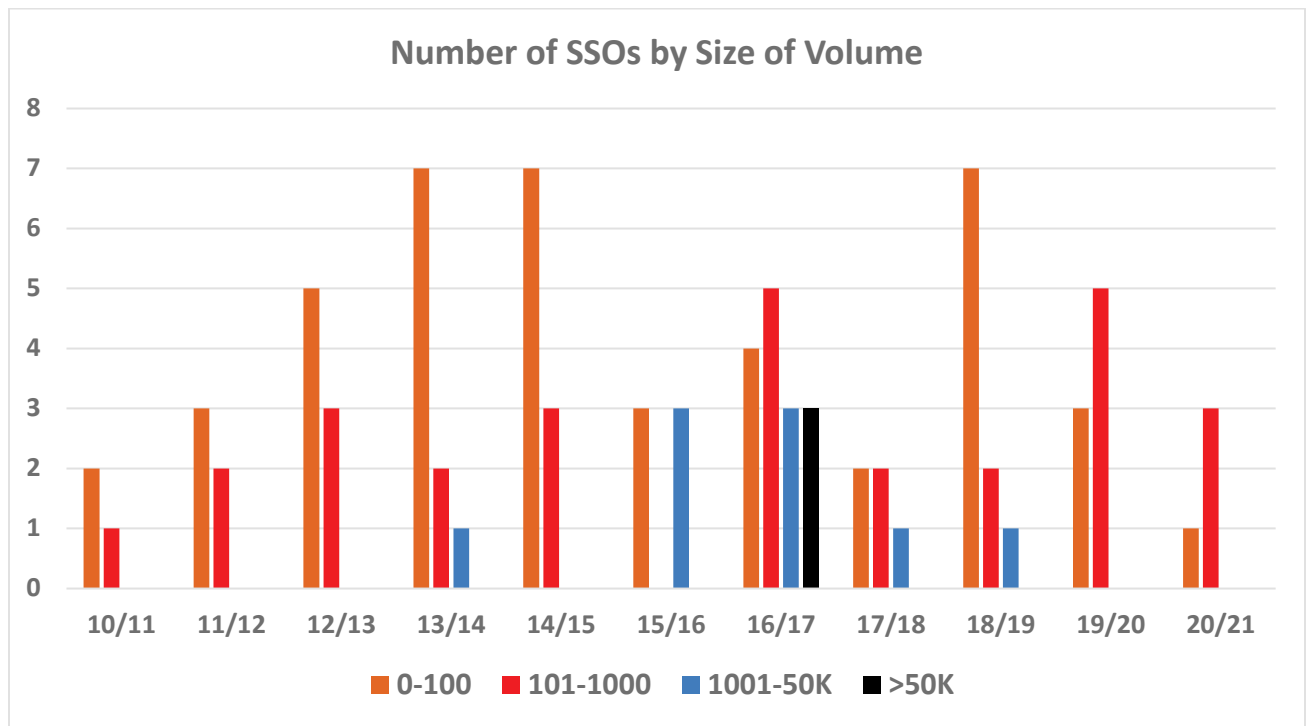


Figure IX – 6: Comparison of SSO Rate per 100 Miles of Sewers

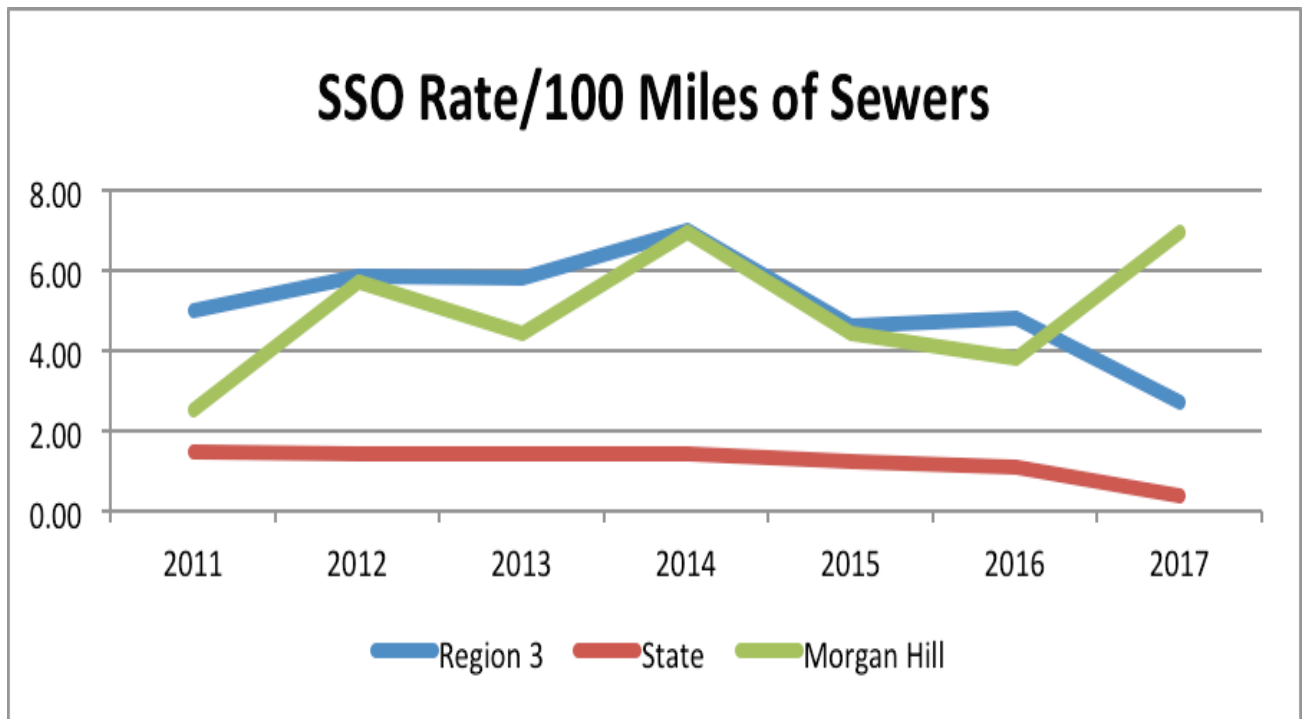


Figure IX – 7: Trend in Private Sewer Lateral Volumes Spilled

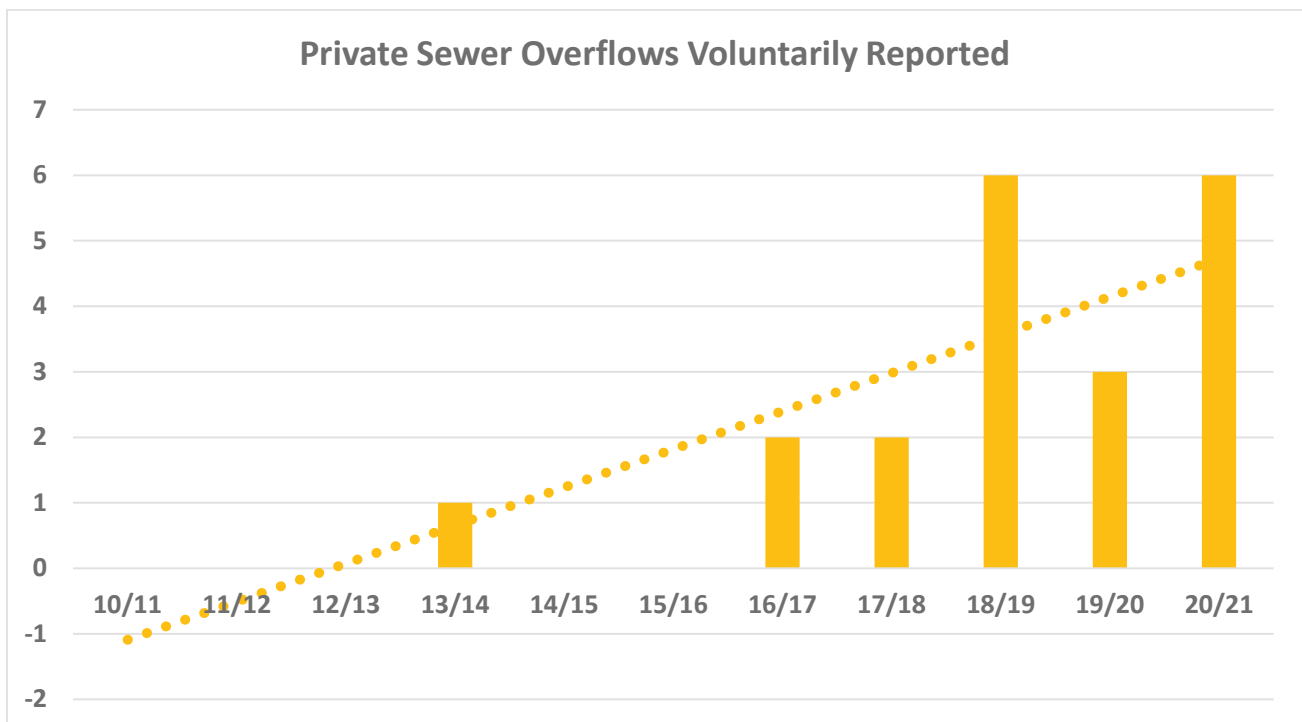


Figure IX – 8: Private Overflow Fiscal Year Gallons

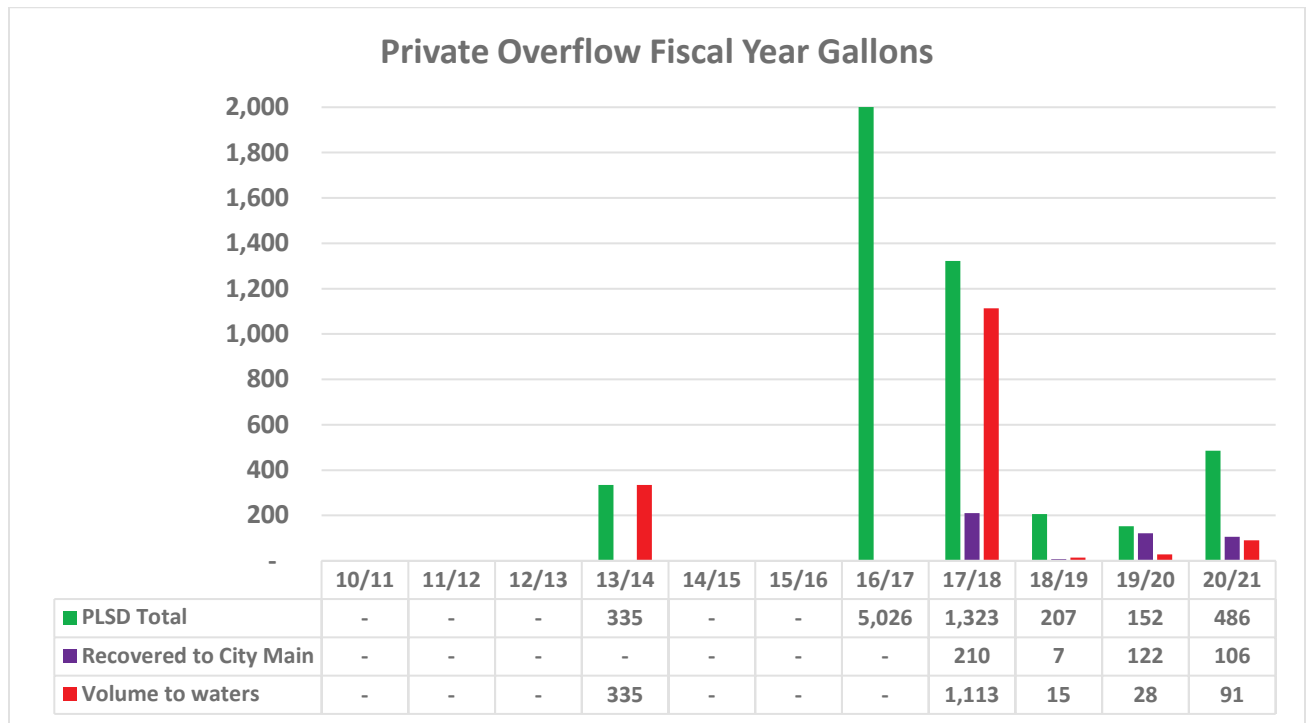
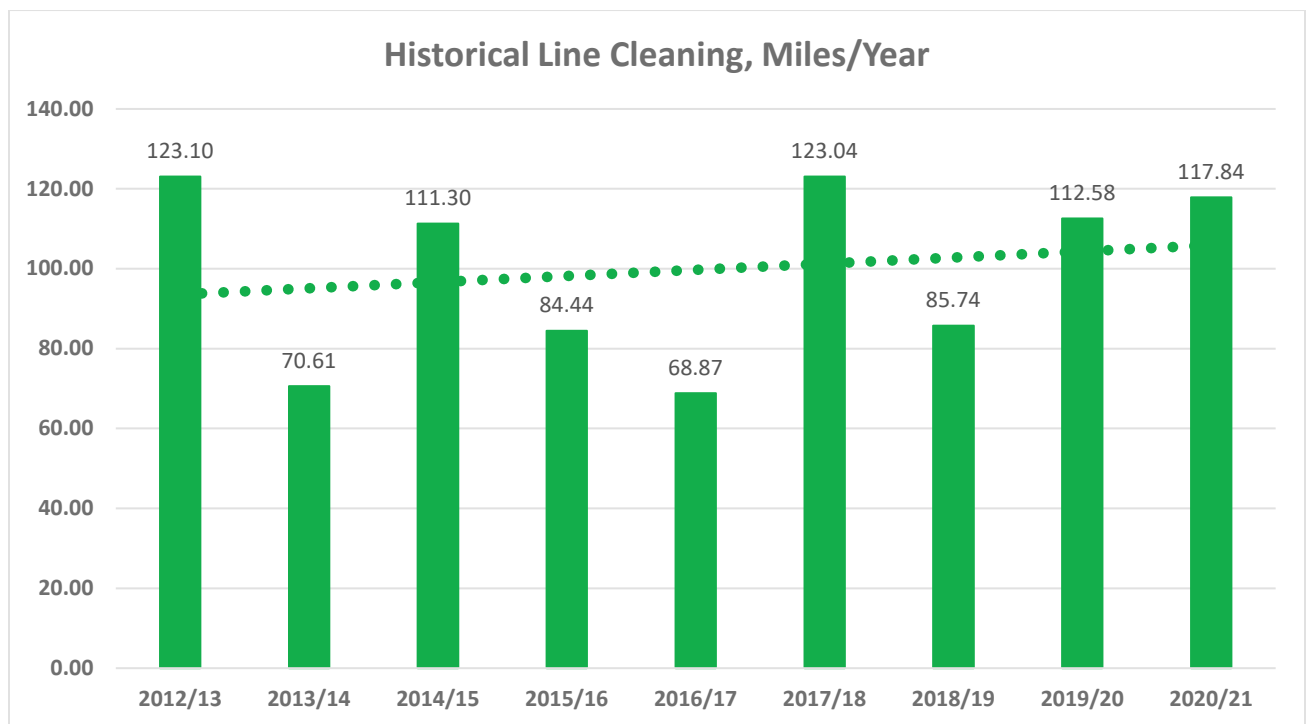
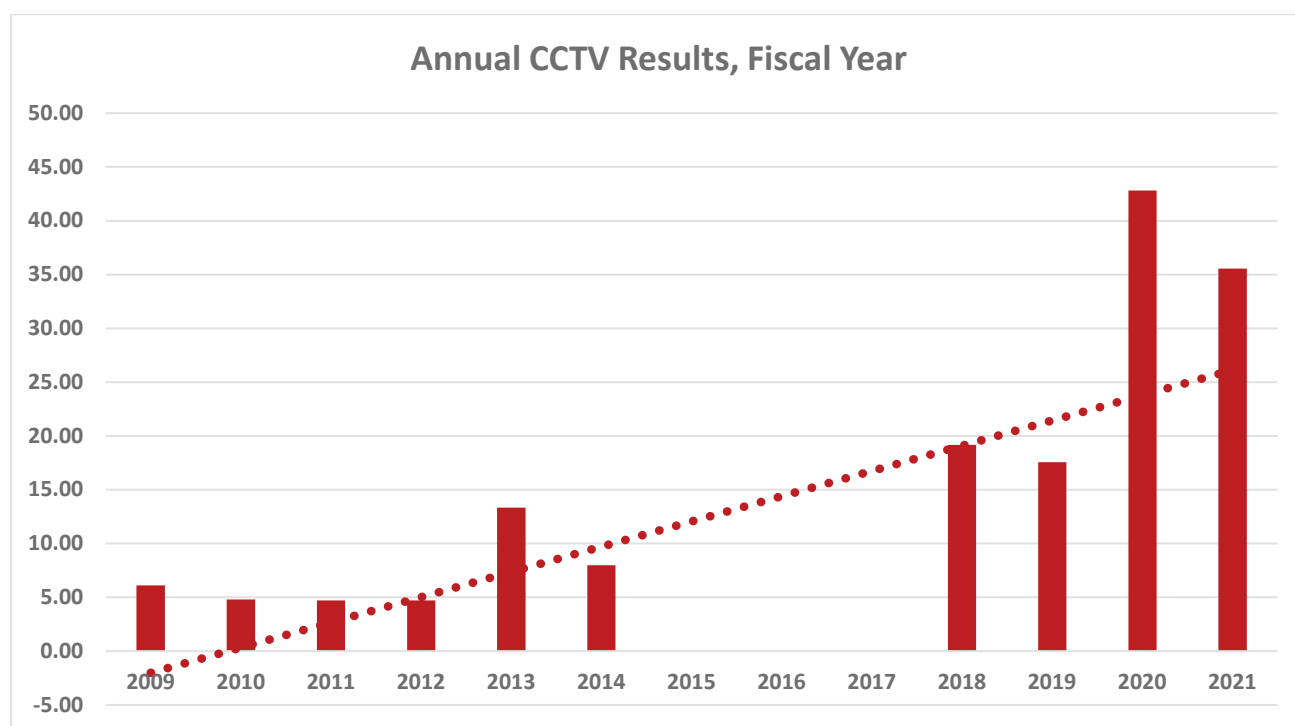


Figure IX – 9: Historical Line Cleaning, Miles/Year



**Figure IX – 10: Annual CCTV Performance, Fiscal Year**

#### **IX.4: Performance Monitoring and Program Changes**

The City will evaluate the performance of its wastewater collection system regularly using the performance measures identified in this Element. The City will update the data and analysis at the time of the evaluation.

The City may use other performance measures in its evaluation. The City will prioritize its actions and initiate changes to this SSMP, 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 internal 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 9/17/21

## 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 from the original SSMP adoption date by the City Council of July 22, 2009. The City SSMP audits will be filed and used internally to enhance compliance. 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 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 Checklist (Appendix B) 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 and used internally to assure compliance. any deficiencies determined to amend the SSMP will be detailed in Appendix C, 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 as required by the WDR from the 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 updates 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 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.

### **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.

## 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 22<sup>nd</sup> 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**

**RESOLUTION NO. 18-015**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY  
OF MORGAN HILL APPROVING THE SANITARY SEWER  
MANAGEMENT PLAN**

WHEREAS, the State Water Resources Control Board Order No. 2006-0003- Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems requires the preparation of a Sanitary Sewer Management Plan (SSMP); and

WHEREAS, the City of Morgan Hill owns and operates a sanitary sewer collection system subject to the WDR requirements of the State; and

WHEREAS, the City has revised and updated its SSMP; and

WHEREAS, the revised SSMP was presented to the City Council at a regularly scheduled Council Meeting on, February 21, 2018 allowing for public input prior to consideration and adoption; and

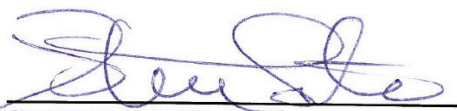
WHEREAS, the City Council determines that adoption of this Resolution is in the public interest.

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, APPROVED AND ADOPTED** by the City Council of the City of Morgan Hill at a regular meeting held on the 21<sup>st</sup> day of February, 2018.

<b>AYES:</b>	<b>COUNCIL MEMBERS:</b>	<b>Larry Carr, Rich Constantine, Rene Spring, Caitlin Robinett Jachimowicz, Steve Tate</b>
<b>NOES:</b>	<b>COUNCIL MEMBERS:</b>	<b>None</b>
<b>ABSTAIN:</b>	<b>COUNCIL MEMBERS:</b>	<b>None</b>
<b>ABSENT:</b>	<b>COUNCIL MEMBERS:</b>	<b>None</b>

**APPROVED:**

  
**STEVE TATE, Mayor**

**ATTEST:**

  
**IRMA TORREZ, City Clerk**

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**RESOLUTION NO. 22-059**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY  
OF MORGAN HILL APPROVING THE 2022 SANITARY  
SEWER MANAGEMENT PLAN**

WHEREAS, the State Water Resources Control Board Order No. 2006-0003- Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems requires the preparation of a Sanitary Sewer Management Plan (SSMP); and

WHEREAS, the City of Morgan Hill Owns and operates a sanitary sewer collection system subject to the WDR requirements of the State; and

WHEREAS, the City has revised and updated its SSMP; and

WHEREAS, the revised SSMP was presented to the City Council at a regularly scheduled Council Meeting on, December 7, 2022 allowing for public input prior to consideration and adoption; and

WHEREAS, the City Council determines that adoption of this Resolution is in the public interest.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORGAN HILL DOES HEREBY FIND, DETERMINE, RESOLVE AND ORDER AS FOLLOWS:

Section 1. 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, APPROVED, AND ADOPTED** by the City Council of Morgan Hill at a Regular Meeting held on the 7<sup>th</sup> day of December 2022 by the following vote:

<b>AYES:</b>	<b>COUNCIL MEMBERS:</b>	<b>Gino Borgioli, Rich Constantine, Yvonne Martinez Beltran, John McKay, Rene Spring</b>
<b>NOES:</b>	<b>COUNCIL MEMBERS:</b>	<b>None</b>
<b>ABSTAIN:</b>	<b>COUNCIL MEMBERS:</b>	<b>None</b>
<b>ABSENT:</b>	<b>COUNCIL MEMBERS:</b>	<b>None</b>

**APPROVED:**

**ATTEST:**

DocuSigned by:  
  
02EAF5B057884E7...  
**RICH CONSTANTINE, Mayor**

DocuSigned by:  
  
C0FCB7EAB8A7C1CA...  
**MICHELLE BIGELOW, City Clerk**

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City of Morgan Hill  
Resolution No. 22-059  
Page 2 of 2

∞ **CERTIFICATION** ∞

**I, Michelle Bigelow, City Clerk of the City of Morgan Hill, California,** do hereby certify that the foregoing is a true and correct copy of Resolution No.22-059 adopted by the City Council at the meeting held on December 7, 2022.

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

**DATE:** 12/15/2022

DocuSigned by:  
  
C0FC07EAB7C4C08  
**MICHELLE BIGELOW, City Clerk**

## Appendix B: SSMP Audit Checklist Report Form

### City of Morgan Hill SSMP Audit Checklist Report Form

The purpose of the SSMP Audit is to evaluate the effectiveness of the City of Morgan Hill's SSMP and to identify any needs for improvement. The information identified here will be used to inform the findings and necessary information to be evaluated during the biannual Internal Audit of the City SSMP.

**Directions:** Please rank each item below utilizing the following sufficiency ranking system and add any comments to explain the ranking to the Comment Section of each SSMP Element:

- *Complies (C) – complies with all WDR objectives*
- *Substantially Complies (SC) – complies mostly with all WDR objectives*
- *Partially Complies (PC) – complies with basic WDR objectives*
- *Marginal Compliance (MC) – complies minimally with basic objectives of the WDR*
- *Does Not Comply – does not comply with WDR objectives*

Element 0 – Introduction/Executive Summary	
A.	
B.	
C.	
D.	
Element I – Goals	Rating
A. Are the goals stated in the SSMP still appropriate and accurate?	
Discussion:	
Element II – Organization	Rating
A. Is the List of City Staff Responsible for SSMP Elements current?	
B. Is the Sanitary Sewer Overflow Responder List current?	

C. Is the City Organization Chart current?	
D. Are the Staff position descriptions an accurate portrayal of staff responsibilities?	
E. Is the Chain of Communication for Reporting and Responding to SSOs section/flow chart accurate and up-to-date?	
Discussion:	
<b>Element III – Legal Authority</b>	<b>Rating</b>
Does the SSMP contain current references to the Morgan Hill Municipal Code documenting the City's legal authority to:	
A. Prevent illicit discharges?	
B. Require proper design and construction of sewers and connections?	
C. Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City?	
D. Limit discharges of fats, oils and grease?	
E. Enforce any violation of its sewer ordinances?	
F. Were any changes or modifications made in the past year to City Sewer Ordinances, Regulations or standards?	
Discussion:	
<b>Element IV – Operations &amp; Maintenance</b>	
<b>Collection System Maps</b>	<b>Rating</b>
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?	
<b>Prioritized Preventive Maintenance</b>	<b>Rating</b>
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?	
<b>Scheduled Inspections and Condition Assessments</b>	<b>Rating</b>
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?	
<b>Contingency Equipment and Replacement Inventory</b>	<b>Rating</b>
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?	
<b>Training</b>	<b>Rating</b>
I. Does the SSMP document current training expectations and programs?	
<b>Outreach to Plumbers and Building Contractors</b>	<b>Rating</b>
J. Does the SSMP document currently outreach efforts to plumbers and building contractors?	
Discussion:	
<b>Element V – Design and Performance Standards</b>	<b>Rating</b>
A. Does the SSMP reference current design and construction standards for the installation for new sanitary sewer systems, pump stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?	

B. Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines?	
Discussion:	
<b>Element VI – Overflow and Emergency Response Plan</b>	<b>Rating</b>
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?	
Discussion:	
<b>Element VII – Fats, Oils and Grease (FOG) Control Program</b>	<b>Rating</b>
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	
F.	Was required training on SSMP and OERP completed and documented? Were field exercises with field staff on SSO volume estimation conducted and documented?	
G.	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:		
<b>Element VIII – System Evaluation and Capacity Assurance Plan</b>		<b>Rating</b>
A.	Does the City of Morgan Hill 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 completed?	
Discussion:		
<b>Element IX – Monitoring, Measurement and Program Modifications</b>		<b>Rating</b>
A.	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?	
B.	Is the City able to sufficiently evaluate the effectiveness of the SSMP elements based on relevant information?	

C. Do the performance metrics properly support the Goals in Element 1?	
Discussion:	
<b>Element X – SSMP Audits</b>	<b>Rating</b>
A. Will the SSMP Audit be completed, reviewed, and filed in Appendix B?	
B. Was the final Audit Report presented to the governing body at a publicly noticed meeting?	
Discussion:	
<b>Element XI – Community Program</b>	<b>Rating</b>
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 and added to Appendix C?	
C. Did City staff conduct and document meetings with satellite collection systems?	
D. Are all agreements with satellite systems current or are changes necessary to these agreements?	
Discussion:	
<b>Change Log</b>	<b>Rating</b>
A. Is the SSMP Change Log current and up to date?	

---

Discussion:

**Audit Team:**

**Date:**

**Prepared By:**

**Date:**

**Reviewed By:**

**Date:**

**Certified By:**

**Date:**

**Approved for Filing On**

**Date:**

## Appendix C: Sewer System Management Plan Change Log

### 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	City Council
2/18	General	Added collection system infrastructure information, historical performance results and graphs of monitored results.	City Council
2/18	General		City Council
2/18	Cover Page	Revised the cover page to add adoption dates and WDID	City Council
2/18	Introduction	Added new introduction and expanded information to include tables and graphs of the sanitary sewer system assets.	City Council
2/18	Definitions, Acronyms, etc.	Added an expanded list of definitions and acronyms.	City Council
2/18	References	Added list of regulatory references to Intro.	City Council
2/18	I-1	Revised and expanded the City goals	City Council
2/18	II-1	Revised and added a new organizational chart	City Council
2/18	II-2	Expanded the list of positions description, LRO designations and reporting relationships; revised several classification titles.	City Council
2/18	Table II-1	Added new table and expanded for new appendices responsibilities.	City Council
2/18	III-1	Added table of Legal Authorities for both City and SCRWA.	City Council
2/18	III-2	New section added describing relationship with SCRWA.	City Council
2/18	IV-1	Updated the mapping system and the work flow management system description; added revised organizational chart.	City Council
2/18	VI/App E	Entirely rewritten and full copy added to Appendix E.	City Council
2/18	App F	New Water Quality Monitoring Plan prepared, and full document added to new appendix.	City Council

Date	SSMP Element #	Description of Change/Revision Made	Person Authorizing Change
2/18	VI-2	Added information regarding dual reporting responsibilities to the RWQCB.	City Council
2/18	EI VII	Completely rewritten and description of FSEs added along with historical FOG related SSOs.	City Council
2/18	EI VIII	Completely rewritten to reflect 2017 Sewer Master Plan results and capital projects.	City Council
2/18	IX-3	Add historical Tables and Graphs of performance and SSO trends	City Council
2/18	X-1	Updated for timing of audits; added an audit reporting form;	City Council
2/18	X-2	Updated schedule for full SSMP revisions.	City Council
2/18	XI-2	Added new section regarding communications with SCRWA and joint trunk sewer responsibilities.	City Council
2/18	App IV-1	Added new Lift Station and Force Main Assessment Checklist	City Council
2/18	App IV-2	Revised list and moved to appendix.	City Council
2/18	App IV-3	Revised CIP from 2017 Sewer Master Plan including map of proposed projects.	City Council
2/18	App IV-4	Updated Major Equipment listing to June 2017	City Council
2/18	App IV-5	Updates Replacement Parts Listing	City Council
2/18	App A	Inserted SSMP adoption resolution from July 22, 2009.	City Council
2/18	App B	Added new SSMP Audit Report section for placement of future final certified SSMP Audit Reports	City Council
2/18	App C	Added new SSMP Audit Checklist	City Council
2/18	App D	Added and updated SSMP Change Log for current revisions.	City Council
2/18	App E	Full copy of the Morgan Hill Overflow Emergency Response Plan.	City Council
2/18	App F	New City Water Quality Monitoring Plan.	City Council
2/18	App G	Added list of all SSMP activities and deadlines listed in the current version of the SSMP.	City Council
5/22	Title Page	Added new Council adoption information and new SSMP date.	

Date	SSMP Element #	Description of Change/Revision Made	Person Authorizing Change
12/22	Intro Table 4: Siphons	Added two additional siphons added to system.	City Council
12/22	Figures II-1 and IV-1	Updated Utilities Department Organization Chart	City Council
12/22	II-1	Added LRO and DS designated positions to the position classifications	City Council
12/22	Table II-1	Updated responsible persons and contact information	City Council
12/22	Table IV-3	Update four years on information	City Council
12/22	IV-2.4	Added two additional siphon information	City Council
12/22	IV-2.6	Added new private lateral information	City Council
12/22	Table VIII-1	Updated additional years of information	City Council
12/22	VIII-5	Added ERRATA sheet for August 2019 update to Master Plan	City Council
12/22	App IV-2	Update the Standard Operating Policy listing	City Council
12/22	App IV-3	Added revised short- and long-term CIP program	City Council
12/22	App IV-4	Updated the equipment listing	City Council
12/22	App IV-5	Updated the replacement parts table	City Council
12/22	Tables IX-1 to IX-4	Updated thru 20/21	City Council
12/22	Fig IX-1 to IX-10	Updated thru 20/21	City Council
12/22	App A	Added Resolution 18-015 for SSMP adoption	City Council
12/22	App B	Added the 2022 Internal Audit report	City Council
12/22	App D	Updated the SSMP Change Log	City Council

## Appendix D: Overflow Emergency Response Plan (OERP)

# City of Morgan Hill

## Overflow Emergency Response Plan



Effective Date: \_\_\_\_\_

Revised Date: \_\_\_\_\_

Approved by: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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City of Morgan Hill: Overflow Emergency Response Plan

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## Sanitary Sewer Overflow Emergency Response Plan

### 1. Purpose

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

**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.

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

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

**MAINLINE SEWER:** Refers to City wastewater collection system piping that is not a private lateral connection to a user.

**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 SEWAGE DISCHARGES** – Sewage discharges that are caused by blockages or other problems within a privately-owned lateral.

**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:** Discharges of untreated or partially treated wastewater of **any volume** resulting from an enrollee's sanitary sewer system failure or flow condition that:
- Reach surface water and/or reach a drainage channel tributary to a surface water; or
  - Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).

- Category 2:** 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.)

**SEWER SERVICE LATERAL:** Refers to the piping that conveys sewage from the building to the City's wastewater collection system.

**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**

##### GWDR Requirement

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

- (a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;
- (b) A program to ensure appropriate response to all overflows;
- (c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;
- (d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;
- (e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and
- (f) A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to Waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

The Sewer System Management Plan and critical supporting documents are available to the public at <https://www.morgan-hill.ca.gov/589/Wastewater-Division>.

#### **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 D.13vi(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](http://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 (6:30 AM – 4:00 PM)

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, including name, address and nature of the complaint using the Service Call Form 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 Call Out employee will write up the Service Call 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 Service Call 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 on the Service Call Form:

- 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, address, 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)
- Caller's estimation of the duration of the problem and knowledge of any history of prior incidents in the same area.
- Other relevant information

If the overflow/backup is not in the City's service area they provide the customer with the contact information for the responsible agency, and then notify that agency.

If the overflow/backup is in the City's service area, a Wastewater Crew is dispatched and instructed to complete the Sanitary Sewer Overflow/Backup Response Workbook.

## 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/plumber causes or witnesses a Sanitary Sewer Overflow. If the contractor/plumber causes or witnesses an SSO they should:

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

## 6.4 NO OBSERVATION

If there are no witnesses or no call was received for an SSO, the City staff will contact nearby residents or business owners in the vicinity of the SSO, in an attempt to obtain information that brackets a given start time that the SSO began. This information will be collected and placed with records for the specific SSO.

# 7. SSO Response Procedures

*ref. SWRCB Order No. 2006-0003-DWQ D.13vi(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.

If it is not possible that the overflow/backup is due to a failure in the City-owned/maintained sewer lines the Wastewater Crew performs the following:

- Follows the instructions in the Sanitary Sewer Overflow/Backup Response Workbook.
- If the customer is not home the Wastewater Crew completes the Door Hanger and leaves it on the customer's door.
- If the customer is home the Wastewater Crew:
  - Explains that the blockage is in the customer's lateral and the City does not have legal authority to maintain or perform work on privately owned laterals.
  - Recommends to the customer that they hire a contractor to clear their line.

- Gives the customer the Sewer Spill Reference Guide pamphlet.

If it is possible that the overflow/backup is due to a failure in the City-owned/maintained sewer lines the Wastewater Crew:

- Follows the instructions in the Sanitary Sewer Overflow/Backup Workbook.
- Notifies Supervisor of the incident.
- Relieves blockage and cleans impacted areas.
- Forwards the completed Sanitary Sewer Overflow Workbook to the Senior Utility Worker.

The Senior Utility Worker reviews the completed Workbook and forward it to the Operations Manager. The Operations Manager performs required regulatory reporting in accordance with the Sanitary Sewer Overflow/Backup Workbook's Regulatory Reporting section.

If the overflow has impacted private property, the Wastewater Crew:

- Follows the instructions in the Sanitary Sewer Overflow/Backup Workbook.
- Provides the customer with forms and information as indicated in the Sanitary Sewer Overflow/Backup Workbook.
- Forwards the completed Sanitary Sewer Overflow/Backup Workbook to the Senior Utility Worker.

The Senior Utility Worker notifies the Deputy Director of Utilities or designee of incident.

The Deputy Director of Utilities or designee:

- Reviews incident reports, claim form and other incident information and forwards, as appropriate, to the Public Services Director and Risk Manager.

The City Risk Manager or Designee:

- Reviews incident reports, claim form and other incident information and forwards, as appropriate, to:  
Sedgwick Claims Management Services  
Jaeran Ahn, Claims Team Lead - Liability
- Communicates with claimant as appropriate.
- Communicates with Sedgwick to adjust and administer the claim to closure.

## 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 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).

### 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 peculiar to sewer work. In such cases it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before starting the job.

### 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.
- Take photos of overflowing manhole(s)/cleanout(s).
- 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.
- 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 procedures refer to the Sanitary Sewer Overflow/Backup Response Workbook.

### 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 procedures refer to the Sanitary Sewer Overflow/Backup Response Workbook.

## 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 other assistance is required, immediately contact the Operations Manager. For procedures refer to the Sanitary Sewer Overflow/Backup Response Workbook.

## 7.7 Equipment

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

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

Standard operating procedures for equipment that may be necessary in the event of a sanitary sewer overflow or backup are stored at the Corporation Yard.

## 7.8 Continued Response Efforts

The City shall, following the initial response and reporting required by the State Water Resources Control Board's Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR), continue response efforts based on the risk posed by the SSO at issue, taking into account: (1) the volume of the SSO; (2) the proximity of the SSO to high risk areas, which shall include sensitive populations, specifically public and private schools, parks, recreational areas, and surface waters, especially during the recreation season from May to September; and (3) the timing and/or seasonality of the SSO event (e.g. an SSO to surface waters during low flow, acid conditions of late summer). The City further agrees to provide training to its response crews regarding implementation of the risk assessment. The City shall augment the SSMP and OERP, as necessary, to document this practice.

## 8. Recovery and Cleanup

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(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 Flow and Volume of Spilled Sewage

To estimate the flow rate, crew members will use the SSCSC Manhole Overflow Gauge if the same style of manhole cover is observed overflowing. A variety of approaches exist for estimating the volume of a sanitary sewer spill. Crew members should use the method most appropriate to the sewer overflow in question and reference the Sanitary Sewer Overflow/Backup Response Workbook which provides four (4) methods:

- Eyeball Estimation Method
- Duration and Flow Rate Calculation Method
- Area/Volume Method
- Upstream Connections Method

Where safe and possible, the City shall take photographs of an SSO event before and during the recovery operation to help aid in establishing and justifying spill volume. Such photographs will preserve data such as the date and time for when City staff took the photograph.

### 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 into property is the definite cause of City system failure, the property owner can call out a water damage restoration contractor to complete the cleanup and restoration. In both cases, 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 deozone 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**

In the event the City cannot confirm that specific human pathogens from an SSO have been removed or mitigated, the City shall post and maintain appropriate public notification signs and place barricades to keep vehicle and pedestrian traffic away from contact with the spilled sewage. The signs and other public notices will not be removed until the County Environmental Health Department or other agency with jurisdiction over the matter has determined there is no further risk to public health and the environment.

The area and warning signs, once posted, will be checked every day to ensure that they are still in place. Photographs of sign placement will be taken.

In the event that an overflow occurs at night, the location will be inspected first thing the following day. 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 by regulating agencies, the Public Information Officer or their designee will provide the media with all relevant information.

## **9. Water Quality**

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(f)

### **9.1 Water Quality Sampling and Testing**

Water quality sampling and testing will be performed for Category 1 SSOs whenever there is a major spill 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 samples as soon as possible after the discovery and mitigation of the SSO event.
- The water quality samples will be collected from upstream of the spill, from the spill area, and downstream of the spill in flowing water (e.g. creeks). The water quality samples will be collected near the point of entry of the spilled sewage.
- The samples shall then be brought to Alpha Labs for analysis.

The City will conduct sampling based on the risk assessment set forth in Section 7.8. Where sampling is performed, the City will sample surface waters, where feasible, upstream from the SSO, at the point of entry, and downstream from the SSO, and test for ammonia, fecal coliform, and E. coli.

Water quality sampling results shall be reported in an appropriate category on the California Integrated Water Quality System (CIWQS) reporting form or as required by the State Water Resources Control Board. Feasibility for obtaining a sample will depend on whether sufficient flow exists to collect a representative, uncontaminated sample, and whether dangerous conditions exist that would preclude City staff from safely obtaining a sample (i.e., City staff will not be placed at risk for injury in severe weather or other dangerous condition).

## 9.2 Water Quality Monitoring Plan

Water quality sampling and testing will be performed for Category 1 SSOs of 50,000 gallons or greater to determine the extent and impact of the SSO. 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, legal right to access, 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 fecal coliform, E. Coli, biochemical oxygen demand (BOD), and ammonia.
6. Observe proper chain of custody procedures.
7. If the City's current standard operating procedures (SOP's) cannot fully mitigate an SSO and if it is determined that the SSO may pose an imminent and substantial endangerment to public health or the environment, the City shall consult a qualified biologist, health care specialist or equivalent professional to assist.

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 major SSO spilled to surface waters. The Deputy Director of Utility Services will supervise the preparation of this report and will certify 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:

### Causes and Circumstances of the SSO:

- Complete and detailed explanation of how and when the SSO was discovered.
- Diagram showing the SSO failure point, appearance point(s), and final destination(s).
- Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.
- Detailed description of the cause(s) of the SSO.

- Copies of original field crew records used to document the SSO.
- Historical maintenance records for the failure location.

City's Response to SSO:

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

Water Quality Monitoring:

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

## **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 the Wastewater Crew to gather information regarding the incident and notify the Senior Utility Worker or their designee.
- It is the responsibility of the Deputy Director of Utilities or their 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 D.13vi(c)*

In accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS GWDRs), the City of Morgan Hill 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 Regulator Required Notifications

ELEMENT	REQUIREMENT	METHOD
<b>NOTIFICATION</b>	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: <b>(800) 852-7550</b>
<b>REPORTING</b>	<ul style="list-style-type: none"> <li>Category 1 SSO: The City will submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date.</li> <li>Category 2 SSO: The City will submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.</li> <li>Category 3 SSO: The City will submit certified report within 30 calendar days of the end of month in which SSO the occurred.</li> <li>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.</li> <li>"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.</li> <li>Collection System Questionnaire: The City will update and certify every 12 months</li> </ul>	<p>Enter data into the CIWQS Online SSO Database<sup>1</sup> (<a href="http://ciwqs.waterboards.ca.gov/">http://ciwqs.waterboards.ca.gov/</a>) certified by the Legally Responsible Official(s) <sup>2</sup>.</p> <p>All information required by CIWQS will be captured in the Sanitary Sewer Overflow Report.</p> <p>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.</p>
<b>WATER QUALITY MONITORING</b>	The City will conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results will be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
<b>RECORD KEEPING</b>	<p>The City will maintain the following records:</p> <ul style="list-style-type: none"> <li>SSO event records.</li> <li>Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP.</li> <li>Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters.</li> <li>Collection system telemetry records if relied upon to document and/or estimate SSO Volume.</li> </ul>	Self-maintained records shall be available during inspections or upon request.

<sup>1</sup> 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 at (510) 622-2460 in accordance with the time schedules identified above. In such an event, the City will submit the appropriate reports using the CIWQS online SSO database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the SSO file.

<sup>2</sup> 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](mailto:help@ciwqs.waterboards.ca.gov).

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

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 D. 13vi(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 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 D. 13vi(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 and any other documents related to the incident
- Reviewing the incident timeline and other documentation regarding the incident
- Reviewing communications with the reporting party and witness
- Reviewing volume estimate, volume recovered estimate, volume estimation assumptions and associated drawings
- Reviewing available photographs
- Interviewing staff that responded to the spill
- Reviewing past maintenance records
- Reviewing past CCTV records,
- Conducting a CCTV inspection to determine the condition of all line segments immediately following the SSO and reviewing the video and logs,
- Reviewing any Fats, Oils, Roots and Grease (FROG) related information or results
- Post SSO debrief records
- Interviews with the public at the SSO location

The product of the failure analysis investigation will be the determination of the root cause and the identification and scheduling of the corrective actions. The Collection System Failure Analysis Form (in Sanitary Sewer Overflow/Backup Response Workbook) will be used to document the investigation.

## 14. SSO Response Training

*ref. SWRCB Order No. 2006-0003-DWQ D. 13vi(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 Monitoring 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, 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 will be kept of all training that is provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event 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.

## **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 No. WQ 2013-0058-EXEC effective September 9, 2013

## **16. Appendices**

- Appendix A: Service Call Form
- Appendix B: Work Order
- Appendix C: Private Lateral Sewage Discharge Information (Pamphlet)
- Appendix D: Door Hanger
- Appendix E: Warning Sign
- Appendix F: Sanitary Sewer Overflow/Backup Response Workbook
- Appendix G: Water Quality Monitoring Plan

**APPENDIX A:  
Service Call Form**

City of Morgan Hill Overflow Emergency Response Plan  
**Service Call Form**

Caller Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Caller Address: \_\_\_\_\_  
\_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Nature of Call (Complaint): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Location of Potential Problem: \_\_\_\_\_

\_\_\_\_\_

Caller's observation (e.g., odor, duration, location on property, known impacts, indication if surface water impacted, appearance at cleanout or manhole): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

In case of SSO, estimated start time of overflow: \_\_\_\_\_

Additional comments/information: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

☐ Referred to: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Spoke to: \_\_\_\_\_

APPENDIX B:  
Work Order

Cityworks

**Status:**

Submit to:

WO Address:

Supervisor:

Instructions:

Actual Finish:

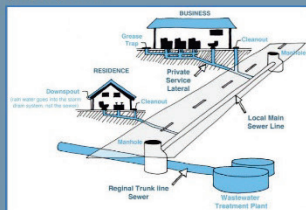
Comments:		
<u>DATE</u>	<u>NAME</u>	<u>COMMENT</u>

111

APPENDIX C:  
Private Lateral Sewage Discharge Information (Pamphlet)

### How a Sewer System Works

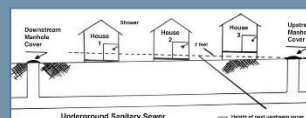
A property owner's sewer pipes are called **service laterals** and are connected to larger local main and regional trunk lines. Service laterals run from the connection at the home to the connection with the public sewer. These laterals are the responsibility of the property owner and must be maintained by the property owner.



### Is my home required to have a backflow prevention device?

Section 710.1 of the Uniform Plumbing Code (U.P.C.) states: "Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover or private sewer serving such drainage piping **shall** be protected from backflow of sewage by installing an approved type of backwater valve." The intent of Section 710.1 is to protect the building interior from mainline sewer overflows or surcharges.

Additionally, U.P.C. 710.6 states: "Backwater valves **shall** be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover."



### If you have a sewage spill from your private sewer line that impacts storm drains, waterways or public property, contact:

City of Morgan Hill (408) 776-7333

Discharge of untreated or partially treated sewage is prohibited by law. If you would like more information on this prohibition, please contact any of the following:

**County Department of Environmental Health**  
(408) 918-3400

California Health and Safety Code, Sections 5410-5416 requires:

- No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution, or a nuisance.
- Any person who causes or permits a sewage discharge to any state waters:
  - Must immediately notify the local health agency of the discharge.
  - Shall reimburse the local health agency for services that protect the public's health and safety.
  - Who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between \$500-\$1,000) and/or imprisonment for less than one year.

### Regional Water Quality Control Board:

- **San Francisco:** (510) 622-2300
- **Central Coast:** (805) 549-3147

Requires the prevention, mitigation, response to, and reporting of sewage spills.

### California Governor's Office of Emergency Services (CalOES): (800) 852-7550

California Water Code, Article 4, Chapter 4, Sections 13268-13271 & California Code of Regulations, Title 23, Division 3, Chapter 9.2, Article 2, Sections 2250-2260 require:

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters shall immediately notify the Office of Emergency Services.
- Any person who fails to provide the notice required by this section is guilty of a misdemeanor and shall be punished by a fine (less than \$20,000) and/or imprisonment for not more than one year.

## Sewer Spill Reference Guide



### Your Responsibilities as a Private Property Owner

Provided to you by:

**City of Morgan Hill**  
100 Edes Court  
Morgan Hill, CA 95037-5301  
(408) 776-7333

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#### How do sewage spills happen?

Sewage spills occur when the wastewater in underground pipes overflows through a manhole, cleanout, or broken pipe. Most spills are relatively small and can be stopped and cleaned up quickly, but left unattended they can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and beaches.

#### CAUTION!

**When trying to locate a sewer problem, never open manholes or other public sewer structures. Only our crews are allowed to open & inspect these structures.**

**Call for assistance: (408) 776-7333**

#### Common causes of sewage spills

- Grease build-up
- Tree roots
- Broken/cracked pipes
- Missing or broken cleanout caps
- Undersized sewers
- Groundwater/rainwater entering the sewer system through pipe defects and illegal connections

#### Prevent most sewage backups with a Backflow Prevention Device

This type of device can help prevent sewage backups into homes and businesses. If you don't already have a Backflow Prevention Device, contact a professional plumber or contractor to install one as soon as possible.

#### Protect the environment!

If you let sewage from your property discharge to a gutter or storm drain, you may be subject to penalties and/or out-of-pocket costs for clean-up and enforcement efforts. A property owner may be charged for costs incurred by agencies responding to spills from private properties.

#### What to look for:

Sewage spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted-for wet areas. Look for:

- Drain backups inside the building.
- Wet ground and/or water leaking around manhole lids onto your street.
- Leaking water from cleanouts or outside drains
- Unusual odorous wet areas: sidewalks, external walls, ground/landscape around a building.

The following are indicators of a possible obstruction in your sewer line:

- Water comes up in floor drains, showers or toilets.
- Toilets, showers or floor drains below ground level drain very slowly.

#### What to do if there is a spill:

Immediately notify the City of Morgan Hill. Our crews locate the blockage and determine if it is in the public sewer; if it is the crew removes the blockage and arranges for cleanup.

If the backup is in your private internal plumbing or in the private service laterals, you are required to immediately:

- Control and minimize the spill by shutting off or not using the water
- Keep sewage out of the storm drain system using sandbags, dirt and/or plastic sheeting
- Call a plumbing professional to clear blockages and make repairs as needed. Look in the yellow pages under "Plumbing Drain & Sewer Cleaning" or "Sewer Contractors."
- Always notify your sewer/public works department or public sewer district of sewage spills.

#### Spill cleanup inside the home:

For large clean ups, a professional cleaning firm should be contacted to clean up impacted areas. If you hire a contractor, it is recommended to get estimates from more than one company. Sometimes, homeowner's insurance will pay for the necessary cleaning due to sewer backups. Not all policies have this coverage, so check with your agent.

If you decide to clean up a small spill inside your home, protect yourself from contamination by observing the following safety measures. Those persons whose resistance to infection is compromised should not attempt this type of clean up.

#### Other Tips:

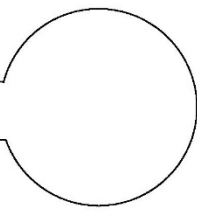
- Keep children and pets out of the affected area until cleanup has been completed.
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup of the affected area.
- Discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, baby toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.

- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured or ill.

#### Spill cleanup outside the home:

- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Clean up sewage solids (fecal material) and place in properly functioning toilet or double bag and place in garbage container.
- On hard surfaces areas such as asphalt or concrete, it is safe to use a 2% bleach solution, or ½ cup of bleach to 5 gallons of water, but don't allow it to reach a storm drain as the bleach can harm the environment.
- After cleanup, wash hands with soap and water. Use water that has been boiled for 1 minute (allow to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured/ill.

APPENDIX D:  
Door Hangers



On (date) \_\_\_\_\_, at  
(location) \_\_\_\_\_,  
we responded to a reported blockage of the sanitary  
sewer service to your property.

We discovered a blockage in:


- ☐ The sanitary sewer main and cleared the line
- ☐ The City-maintained portion of your sanitary  
sewer lateral and cleared the line.
- ☐ Your portion of the sanitary sewer lateral,  
which is your responsibility to maintain. We  
also found the City's portion of the lateral and  
the main to be flowing normally.

If you require assistance to clear your portion of the  
lateral you can search the internet for "Sewer Con-  
tractors" or "Plumbing Drains & Sewer Cleaning." If  
you plan to hire a contractor we recommend getting  
estimates from more than one company.

City of Morgan Hill representative notes:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

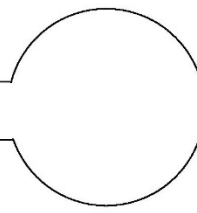
City of Morgan Hill Representative:  
\_\_\_\_\_

For questions or comments, please call:



CITY OF MORGAN HILL

Business Hours  
**(408) 776-7333**  
After hours  
**(408) 779-2101**



On (date) \_\_\_\_\_, at  
(location) \_\_\_\_\_,  
we responded to a reported blockage of the sanitary  
sewer service to your property.

We discovered a blockage in:


- ☐ The sanitary sewer main and cleared the line
- ☐ The City-maintained portion of your sanitary  
sewer lateral and cleared the line.
- ☐ Your portion of the sanitary sewer lateral,  
which is your responsibility to maintain. We  
also found the City's portion of the lateral and  
the main to be flowing normally.

If you require assistance to clear your portion of the  
lateral you can search the internet for "Sewer Con-  
tractors" or "Plumbing Drains & Sewer Cleaning." If  
you plan to hire a contractor we recommend getting  
estimates from more than one company.

City of Morgan Hill representative notes:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

City of Morgan Hill Representative:  
\_\_\_\_\_

For questions or comments, please call:



CITY OF MORGAN HILL

Business Hours  
**(408) 776-7333**  
After hours  
**(408) 779-2101**

APPENDIX E:  
Warning Sign

Overflow Emergency Response Plan  
Public Posting

# DANGER

**RAW SEWAGE • AVOID CONTACT**



# PELIGRO

**AGUA CONTAMINADA • EVITE TODO CONTACTO**

**For more information**

**Para más información**

**City of Morgan Hill**

**Business Hours:  
(408) 776-7333**

**After hours and on weekends:  
(408) 779-2101**

APPENDIX F:  
Sanitary Sewer Overflow/Backup Response Workbook

# **City of Morgan Hill**

## **Overflow Emergency Response Plan**

### **Sanitary Sewer Overflow and Backup Response Workbook**

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INSERT TAB:  
Start Here

City of Morgan Hill Overflow Emergency Response Plan  
**Workbook Instructions**

**A-1**

- ☐ If this is a Category 1 SSO greater than or equal to 1,000 gallons, **immediately contact one of the following to make the 2-hour notification to CALOES:**
- Senior Utility Worker (408) 310-4177
  - Operations Manager (408) 310-4164
  - Utilities Supervisor (408) 310-4175
  - Deputy Director of Utilities Services (408) 310-4166
  - Public Services Director (408) 782-9154
- ☐ **Refer to the Regulatory Reporting Guide** for additional reporting requirements.
- ☐ **If there is a backup into a residence or business:** Sedgwick Claims Management Services, Jaeran Ahn, Claims Team Lead – Liability.
- ☐ **For any media inquiries/requests:**  
 Public Information Officer (408) 310-4706



Don't forget to take photos!

**If you believe that fats, oils, and/or grease (FOG) causes/contributed to the SSO, check here:** ☐ **Contact Gilroy PD Dispatch at (408) 846-0350 and request assistance from the Gilroy Pretreatment Program for a FOG related SSO.**

**Wastewater Crew:**

- ☐ Follow the instructions on the Overflow/Backup Response Flowchart and complete forms in this workbook as indicated.
- ☐ After all work is done and prior to leaving the site, review all documentation including photos to ensure accuracy, completeness, and legibility of documentation collected.
- ☐ Complete the chain of custody record (to the right) and forward workbook to the Operations Manager.

Print Name: \_\_\_\_\_

Initial: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

**Senior Utility Worker:**

- ☐ Review the SSO Event Checklist and the forms in this booklet.
- ☐ Complete the Chain of Custody (right) and forward workbook to the Operations Manager.

Print Name: \_\_\_\_\_

Initial: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

**Operations Manager:**

- ☐ Make all required regulatory notifications.
- ☐ Complete the Collection System Failure Analysis Form.
- ☐ Enter data into CIWQS.
- ☐ Complete the Chain of Custody record (right) and file this booklet

Print Name: \_\_\_\_\_

Initial: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

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City of Morgan Hill Overflow Emergency Response Plan  
**SSO Event Checklist**

**A-2**

Date of SSO: \_\_\_\_\_ SSO Location/Name: \_\_\_\_\_

CIWQS Event ID #: \_\_\_\_\_ Category? ☐ 1 ☐ 2 ☐ 3 OES#: \_\_\_\_\_

Property Damage? ☐ Yes ☐ No Service Request #: \_\_\_\_\_

<ul style="list-style-type: none"> <li><input type="checkbox"/> Effort made to contain and return a portion/all to the sanitary sewer</li> <li><input type="checkbox"/> Pictures/video taken of overflow</li> <li><input type="checkbox"/> Pictures taken of affected/unaffected area</li> <li><input type="checkbox"/> If property damage, start that process</li> <li><input type="checkbox"/> Pictures taken of containment efforts</li> <li><input type="checkbox"/> If Cat 1 &gt; 1000 gals: OES Control # _____</li> <li><input type="checkbox"/> Impacted waters identified?</li> <li><input type="checkbox"/> No impacted waters?</li> <li><input type="checkbox"/> SSO Report Form Complete (includes fields for all required fields in CIWQS, and a sketch of SSO)</li> <li><input type="checkbox"/> Volume Estimation Worksheet(s) done</li> <li><input type="checkbox"/> Start Time Determination Form done</li> <li><input type="checkbox"/> Initial review of forms is complete (ensure consistency with dates, times, volumes, and other data)</li> <li><input type="checkbox"/> Review of photos and videos (label/date)</li> <li><input type="checkbox"/> Start Folder for all documentation for this SSO event. Put everything in it (Field Reports, Worksheets/Forms, follow-up work orders, notes, pics, drawings, etc. CIWQS print outs and emails)</li> <li><input type="checkbox"/> Failure Analysis             <ul style="list-style-type: none"> <li><input type="checkbox"/> TV to determine cause</li> <li><input type="checkbox"/> Review Asset History</li> </ul> </li> <li><input type="checkbox"/> Determine next steps to prevent recurrence</li> <li><input type="checkbox"/> Document findings and next steps on SSO Report</li> <li><input type="checkbox"/> Submit Draft in CIWQS w/in 3 business days (for Categories 1 and 2 only)</li> <li><input type="checkbox"/> Print CIWQS Draft hard copy and email</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review CIWQS, SSO Report, Worksheets, CMMS, and any other documentation to ensure data is consistent (e.g. dates, times, volumes, cause, follow-up action, etc.)</li> <li><input type="checkbox"/> Attach photos, forms etc. to CIWQS</li> <li><input type="checkbox"/> Submit Ready to Certify in CIWQS (with sufficient time for LRO review)</li> <li><input type="checkbox"/> Print CIWQS Ready to Certify and email</li> <li><input type="checkbox"/> Hand folder to LRO</li> <li><input type="checkbox"/> LRO review folder and CIWQS verify accurate and consistent data</li> <li><input type="checkbox"/> Certify in CIWQS (within 15 calendar days for Categories 1 &amp; 2, 30 days after the month for Category 3)</li> <li><input type="checkbox"/> Print Certified CIWQS and email</li> <li><input type="checkbox"/> Any changes? Change in CIWQS and hard copies and explain changes, print our current version</li> <li><input type="checkbox"/> Move completed folder to SSO Binder</li> <li><input type="checkbox"/> For 50, 000 gallons or larger             <ul style="list-style-type: none"> <li><input type="checkbox"/> Follow Water Quality Monitoring and Sampling procedures</li> <li><input type="checkbox"/> Map of where samples were taken</li> <li><input type="checkbox"/> Sampling results</li> <li><input type="checkbox"/> Write Technical Report</li> <li><input type="checkbox"/> Attach to CIWQS</li> <li><input type="checkbox"/> Add to SSO Folder/Binder</li> </ul> </li> <li><input type="checkbox"/> If any changes are made to SSMP             <ul style="list-style-type: none"> <li><input type="checkbox"/> Update SSMP and link on CIWQS to SSMP</li> <li><input type="checkbox"/> Add change to SSMP Change Log</li> <li><input type="checkbox"/> If change is substantive, re-certify SSMP</li> </ul> </li> </ul>
--	--

INSERT TAB:  
Regulatory Reporting

City of Morgan Hill Overflow Emergency Response Plan  
**Regulatory Reporting Guide**

B-1

Deadline	Category 1 SSO	Category 2 SSO	Category 3 SSO	Private Lateral Sewage Discharge
2 hours after awareness of SSO	If the spill is greater than or equal to 1,000 gallons, call CalOES.	-	-	Depending on the circumstances the City will consider reporting Private Lateral Sewage Discharges (PLSD) to CIWQS.
As soon as possible	If SSO impacts private property and may be a failure of the sewer main or if a claim for damages may be submitted against the city, notify Plan JPA.			
48 Hours after awareness of SSO	If 50,000 gal or more were not recovered, begin water quality sampling.	-	-	
3 Business Days after awareness of SSO	Submit Draft Spill Report in the CIWQS database.	Submit Draft Spill Report in the CIWQS database.	-	
15 Days after response conclusion	Certify Spill Report in CIWQS. Update as needed until 120 days after SSO end date.	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 CIWQS. Update as needed until 120 days after SSO end date.	
45 days after SSO end date	If 50,000 gal or more were not recovered, submit SSO Technical Report in CIWQS.	-	-	

**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, including all the discharge points associated with the SSO event.

Category	Definition
1	Discharges of untreated or partially treated wastewater of any volume resulting from an enrollee's sanitary sewer system failure or flow condition that: <ul style="list-style-type: none"> <li>- Reach surface water and/or reach a drainage channel tributary to a surface water; or</li> <li>- Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).</li> </ul>
2	Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from an enrollee's sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
3	All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.
PLSD	Discharges of untreated or partially treated wastewater resulting from blockages or other problems <u>within a privately-owned sewer lateral</u> connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be <u>voluntarily</u> reported to the California Integrated Water Quality System (CIWQS) Online SSO Database.

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## City of Morgan Hill Overflow Emergency Response Plan

**Regulatory Reporting Contacts and Authorization****B-2****Authorized Personnel:**

The following are authorized to perform regulatory reporting of SSOs:

Name	Job Title	Telephone	Check if LRO
Rich Wake	Senior Utility Worker	(408) 310-4177	
TBD	Operations Manager	(408) 310-4164	
Tom Neff	Utilities Supervisor	(408) 310-4175	
James Sylvain	Deputy Director of Utilities Services	(408) 310-4166	✓
Chris Ghione	Public Services Director	(408) 782-9154	✓

*The City's Legally Responsible Official (LRO) is authorized to electronically sign and certify SSO reports in CIWQS. The LRO is the Collection System Supervisor.*

Contact	Telephone/Email
<b>CAL OES</b>	(800) 852-7550
<b>Santa Clara Valley Water District</b>	Main: (408) 265-2600 Watershed Field Maintenance: (408) 630-2378
<b>Sedgwick Claims Management Services</b> Jaeran Ahn, Claims Team Lead - Liability	
<b>San Francisco Regional Water Quality Control Board</b>	Tel: (510) 622-2300 Fax: (510) 622-2460
<b>Central Coast Regional Water Quality Control Board</b>	Tel: (805) 549-3147 Fax: (805) 543-0397
<b>State Water Resources Control Board</b> Walter Mobley	(916) 323-0878

City of Morgan Hill Overflow Emergency Response Plan  
**Notifications Log**

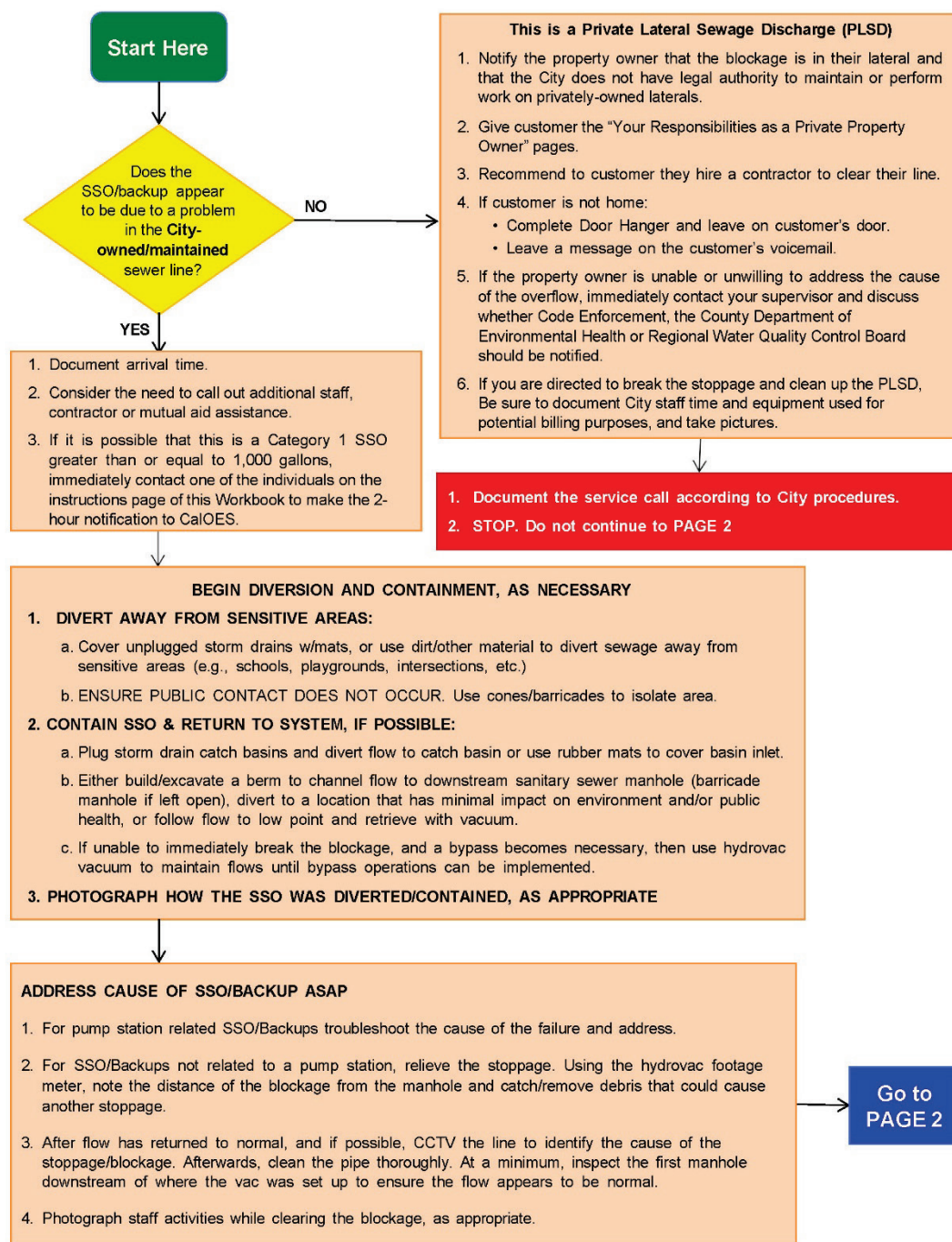
**B-3**

Agency/Individual	Date/Time	Spoke to/Left Message	Notes

INSERT TAB:  
Flowchart

City of Morgan Hill Overflow Emergency Response Plan  
**Overflow/Backup Response Flowchart**

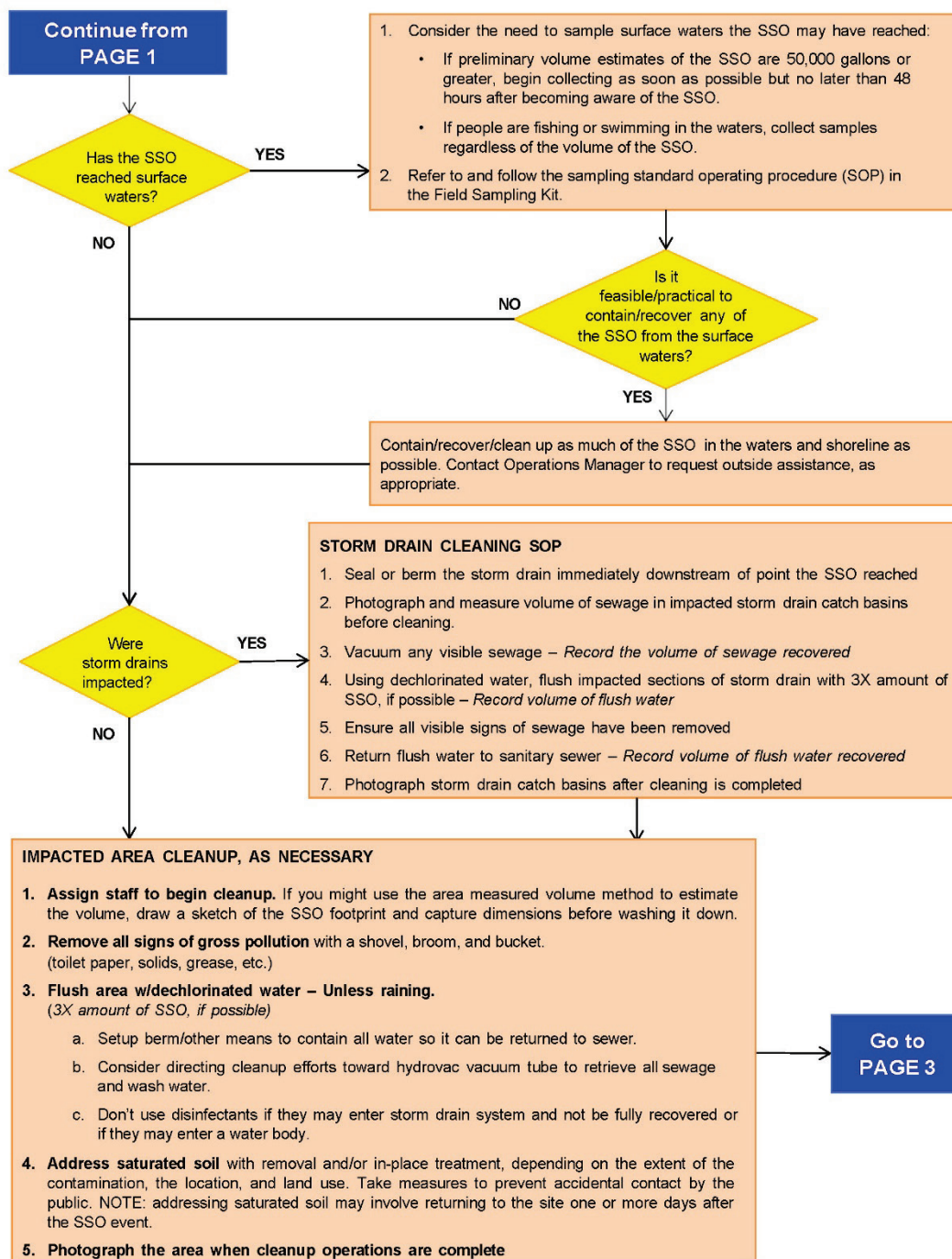
C-1: Page 1



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City of Morgan Hill Overflow Emergency Response Plan  
**Overflow/Backup Response Flowchart**

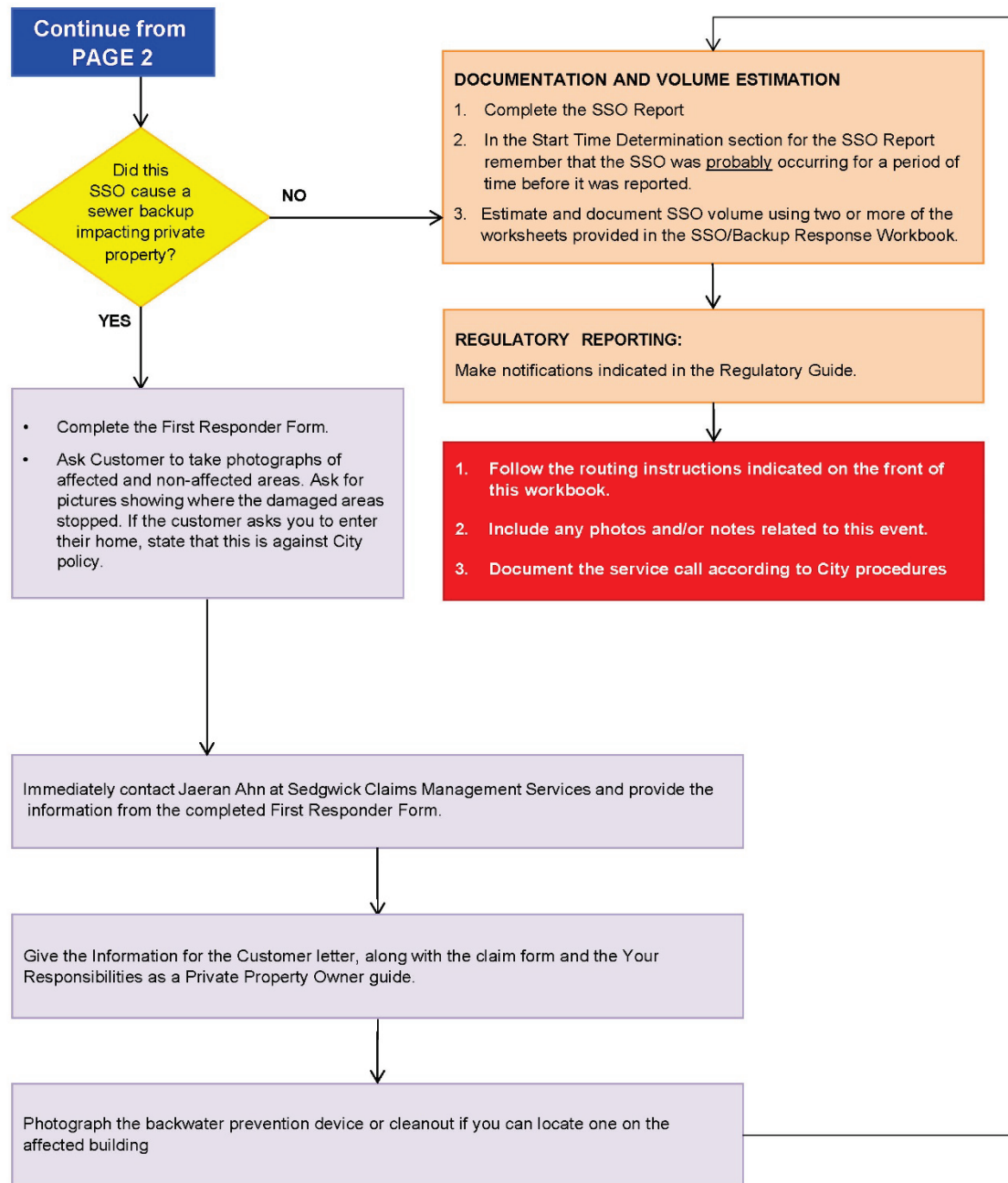
C-1: Page 2



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City of Morgan Hill Overflow Emergency Response Plan  
**Overflow/Backup Response Flowchart**

C-1: Page 3



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INSERT TAB:  
SSO Report

City of Morgan Hill Overflow Emergency Response Plan  
**Sanitary Sewer Overflow Field Report**

D-1: Page 1

PHYSICAL LOCATION DETAILS		
Spill location name	Latitude of spill location	
	Longitude of spill location	
County	Regional Water Quality Control Board	
RESPONDING STAFF		
Person(s) completing this form	Name:	Signature:
	Name:	Signature:
	Name:	Signature:
Name(s) of person(s) involved in the response:		
VOLUMES BY DESTINATION	Volume Spilled (Gallons)	Volume Recovered (Gallons)
2.a/2.b Estimated spill volume that reached a separate storm drain that flows to a surface body of water? (If not all recovered, this is a Category 1)		
2.c/2d Estimated spill volume that directly reached a drainage channel that flows to a surface water body? (Any volume spilled is a Category 1)		
2.e/2.f Estimated spill volume discharged directly to a surface water body? (Any volume spilled is a Category 1)		
2.g/2.h Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location. Also, includes backups to building structures).		
	Volume Spilled	Volume Recovered
Total Volume Spilled (Verify this matches the table in between 2.h and 3 in CIWQS)		
Describe any assumptions made to determine any of the volume estimates including recovered volumes:		

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Overflow Emergency Response Plan  
**Sanitary Sewer Overflow Field Report**

D-1: Page 2

DATE/TIME DETERMINATIONS		
	DATE	TIME
Start of SSO (Use Start Time Determination/Notes Below)		
Agency Notified		
Wastewater Crew Dispatched		
Wastewater Crew Arrived		
End of SSO		
End of Spill Response		

**Start Time Determination/Notes**Don't forget to  
take photos!

Witness 1: \_\_\_\_\_  
 Name Contact Information

Where did you see sewage spill from?

☐ Manhole ☐ Inside Building ☐ Vent/Clean Out ☐ Catch Basin ☐ Wet Well/Lift Station ☐ Other: \_\_\_\_\_

When did you notice the sewage spilling? \_\_\_\_\_ AM / PM Date \_\_ / \_\_\_\_ / \_\_\_\_

When did you last observe **NO Spill** occurring? \_\_\_\_\_ AM / PM Date \_\_ / \_\_\_\_ / \_\_\_\_

Comments: \_\_\_\_\_

Witness 2: \_\_\_\_\_  
 Name Contact Information

Where did you see sewage spill from?

☐ Manhole ☐ Inside Building ☐ Vent/Clean Out ☐ Catch Basin ☐ Wet Well/Lift Station ☐ Other: \_\_\_\_\_

When did you notice the sewage spilling? \_\_\_\_\_ AM / PM Date \_\_ / \_\_\_\_ / \_\_\_\_

When did you last observe **NO Spill** occurring? \_\_\_\_\_ AM / PM Date \_\_ / \_\_\_\_ / \_\_\_\_

Comments: \_\_\_\_\_

Witness 3: \_\_\_\_\_  
 Name Contact Information

Where did you see sewage spill from?

☐ Manhole ☐ Inside Building ☐ Vent/Clean Out ☐ Catch Basin ☐ Wet Well/Lift Station ☐ Other: \_\_\_\_\_

When did you notice the sewage spilling? \_\_\_\_\_ AM / PM Date \_\_ / \_\_\_\_ / \_\_\_\_

When did you last observe **NO Spill** occurring? \_\_\_\_\_ AM / PM Date \_\_ / \_\_\_\_ / \_\_\_\_

Comments: \_\_\_\_\_

City of Morgan Hill Overflow Emergency Response Plan

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**Sanitary Sewer Overflow Field Report**

**D-1: Page 3**

*Start Time Determination/Notes continued*

If the volume of the SSO and rate of flow are known, divide volume by rate of flow to get duration of SSO event.

\_\_\_\_\_ Gallons ÷ \_\_\_\_\_ GPM = Minutes (SSO Duration).

Subtract the Duration from the SSO End Date/Time to establish the SSO Start Date/Time.

Other Efforts to Determine Start Time: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Other Comments Regarding Spill Start Time: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Estimated SSO Start Time: \_\_\_\_\_ AM / PM    Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

SSO End Time: \_\_\_\_\_ AM / PM    Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

City of Morgan Hill Overflow Emergency Response Plan  
**Sanitary Sewer Overflow Field Report**

D-1: Page 4

SSO FIELD REPORT
Spill location description:
Number of appearance points:
Spill appearance points: (Check all that apply) <input type="checkbox"/> Backflow Prevention Device <input type="checkbox"/> Force Main <input type="checkbox"/> Gravity Mainline <input type="checkbox"/> Inside Building/Structure <input type="checkbox"/> Lateral Clean Out (Private/Public) <input type="checkbox"/> Lower Lateral (Private/Public) <input type="checkbox"/> Manhole <input type="checkbox"/> Pump Station <input type="checkbox"/> Upper Lateral (Private/Public) <input type="checkbox"/> Other Sewer System Structure
Spill appearance point explanation. (Enter information here if "Other" or multiple appearance points were selected):
Final spill destination: (Check all that apply) <input type="checkbox"/> Building/Structure <input type="checkbox"/> Combined Storm Drain <input type="checkbox"/> Drainage Channel <input type="checkbox"/> Other (Specify Below) <input type="checkbox"/> Paved Surface <input type="checkbox"/> Separate Storm Drain <input type="checkbox"/> Street/Curb and Gutter <input type="checkbox"/> Surface Water <input type="checkbox"/> Unpaved Surface
Explanation of final spill destination (Enter information if "Other" was selected):

SSO FIELD REPORT	
<p>Spill cause: (Check One)</p> <p><input type="checkbox"/> Air Relief Valve (ARV)/Blow Off Valve (BOV)/Backwater Valve Failure</p> <p><input type="checkbox"/> Construction Diversion Failure</p> <p><input type="checkbox"/> CS Maintenance Caused Spill/Damage</p> <p><input type="checkbox"/> Damage by Others Not Related to CS Construction/Maintenance (Specify Below)</p> <p><input type="checkbox"/> Debris from Construction</p> <p><input type="checkbox"/> Debris from Lateral</p> <p><input type="checkbox"/> Debris-General</p> <p><input type="checkbox"/> Debris-Rags</p> <p><input type="checkbox"/> Debris Wipes/Non-Dispersible</p> <p><input type="checkbox"/> Flow Exceeded Capacity (Separate CS Only)</p> <p><input type="checkbox"/> Grease Deposition (FOG)</p> <p><input type="checkbox"/> Inappropriate Discharge to CS</p> <p><input type="checkbox"/> Natural Disaster</p> <p><input type="checkbox"/> Operator Error</p> <p><input type="checkbox"/> Other (Specify Below)</p> <p><input type="checkbox"/> Pipe Structural Problem/Failure</p> <p><input type="checkbox"/> Pipe Structural Problem/Failure – Installation</p> <p><input type="checkbox"/> Pump Station Failure – Controls</p> <p><input type="checkbox"/> Pump Station Failure – Mechanical</p> <p><input type="checkbox"/> Pump Station Failure – Power</p> <p><input type="checkbox"/> Rainfall Exceeded Design, I and I (Separate CS Only)</p> <p><input type="checkbox"/> Root Intrusion</p> <p><input type="checkbox"/> Siphon Failure</p> <p><input type="checkbox"/> Surcharged Pipe (Combined CS Only)</p> <p><input type="checkbox"/> Vandalism</p>	
<p>Spill cause explanation: (Required if Spill Cause is "Other")</p>	

City of Morgan Hill Overflow Emergency Response Plan  
**Sanitary Sewer Overflow Field Report**

D-1: Page 6

SSO FIELD REPORT		
Where did the problem occur? <input type="checkbox"/> Air Relief Valve (ARV)/Blow Off Valve (BOV) Failure <input type="checkbox"/> Force Main <input type="checkbox"/> Gravity Mainline <input type="checkbox"/> Lower Lateral (Public) <input type="checkbox"/> Manhole <input type="checkbox"/> Other (Specify Below) <input type="checkbox"/> Pump Station Failure – Controls <input type="checkbox"/> Pump Station Failure – Mechanical <input type="checkbox"/> Pump Station Failure – Power <input type="checkbox"/> Siphon <input type="checkbox"/> Upper Lateral (Public)		
Explanation of where failure occurred: (Required if Where Failure Occurred is “Other”)		
Was spill associated with a storm event?	YES	NO
Diameter of sewer pipe at the point of blockage or failure:	inches	
Material of sewer pipe at the point of blockage or failure:		
Estimated age of sewer asset at the point of blockage or failure (if applicable):	years	
Spill Response Activities. (Check all that apply) <input type="checkbox"/> Cleaned-Up <input type="checkbox"/> Mitigated Effects of Spill <input type="checkbox"/> Contained All or Portion of Spill <input type="checkbox"/> Other (Specify Below) <input type="checkbox"/> Restored Flow <input type="checkbox"/> Returned All Spoil to Sanitary Sewer System <input type="checkbox"/> Property Owner Notified <input type="checkbox"/> Other Enforcement Agency Notified		
Explanation of spill response activities: (Required if spill response activities is “Other”):		

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City of Morgan Hill Overflow Emergency Response Plan  
**Sanitary Sewer Overflow Field Report**

D-1: Page 7

SSO FIELD REPORT		
Spill corrective action taken: (Check all that apply) <input type="checkbox"/> Add location to, or increase frequency check, in Preventive Maintenance Program <input type="checkbox"/> Adjusted Schedule/Method of Preventive Maintenance <input type="checkbox"/> Enforcement Action Against FOG Source <input type="checkbox"/> Inspected Sewer Using CCTV to Determine Cause <input type="checkbox"/> Other (Specify Below) <input type="checkbox"/> Plan Rehabilitation or Replacement of Sewer <input type="checkbox"/> Repaired Facilities or Replaced Defect		
Explanation of corrective action taken: (Required if spill corrective action is "Other")          		
Is there an ongoing investigation?	YES	NO
Health warnings posted?	YES	NO
Did spill result in beach closure?	YES	NO
Name of Impacted Beach(es): (Enter N/A if none)          		
Name of impacted surface waters:          		

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City of Morgan Hill Overflow Emergency Response Plan  
**Sanitary Sewer Overflow Field Report**

**D-1: Page 8**

SSO FIELD REPORT
<p>Water quality samples analyzed for: (Check all that apply)</p> <p> <input type="checkbox"/> Dissolved Oxygen  <input type="checkbox"/> Other Chemical Indicator(s) – Specify Below  <input type="checkbox"/> Biological Indicator(s) – Specify Below  <input type="checkbox"/> No Water Quality Samples Taken  <input type="checkbox"/> Not Applicable to the Spill  <input type="checkbox"/> Other (Specify Below)                 </p>
<p>Explanation of water quality samples analyzed for: (Required if water quality samples analyzed for is "Other chemical indicator(s)", "Biological indicator(s)", or "Other")</p>     
<p>Method and explanation of volume estimation methods used: (Check all that apply)</p> <p> <input type="checkbox"/> Eyeball Estimate    <input type="checkbox"/> Measured Volume    <input type="checkbox"/> Duration and Flow Rate  <input type="checkbox"/> Counting Upstream Connections  <input type="checkbox"/> Other (Explain):                 </p>     

INSERT TAB:  
Volume Estimation

Miscellaneous Computations & Examples		Convert Inches to Feet			
To convert inches to feet (NOTE: for the purposes of this worksheet, the unit of measurement will be in feet for formula examples)	Divide the inches by 12 or use the chart on the right.  <b>Example 1:</b> $27" \div 12 = 2.25'$  <b>Example 2:</b> $1\frac{3}{4}" = ?'$  $1" (0.08') + \frac{3}{4}" (0.06') = 0.14'$	<b>Inches</b>	<b>Feet</b>		
		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'		
Volume of one cubic foot	7.48 gallons of liquid	5"	0.42'		
		6"	0.50'		
		7"	0.58'		
		8"	0.67'		
		9"	0.75'		
		10"	0.83'		
		11"	0.92'		
		12"	1.00'		
		<b>Area:</b> Two-dimensional measurement represented in square feet (SQ/FT or ft <sup>2</sup> )	Square/rectangle: Area = Length x Width  Circle: Area = $\pi \times r^2$ (where $\pi \approx 3.14$ and $r$ = radius = $\frac{1}{2}$ diameter)  Triangle: Area = $\frac{1}{2}$ (Base x Height)		
<b>Volume:</b> Three-dimensional measurement represented in cubic feet (CU/FT or ft <sup>3</sup> )	Rectangle/square footprint: Volume = Length x Width x Depth  Circle footprint (cylinder): Volume = $\pi \times r^2 \times \text{Depth}$ (where $\pi \approx 3.14$ and $r$ = radius = $\frac{1}{2}$ diameter)  Triangle footprint: Volume = $\frac{1}{2}$ (Base x Height) x Depth				
<b>Depth:</b> Wet Stain on Concrete or asphalt surface	If the depth is not measurable because it is only a wet stain, use 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")  These were determined to be a reasonable depth to use on the respective surfaces through a process of trial and error. One gallon of water was poured onto both asphalt and concrete surfaces. Once the area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. This process was repeated several times.				
<b>Depth:</b> Contained or "Ponded" sewage	Measure actual depth of standing sewage whenever possible. When depth varies, measure several representative sample points and determine the average. Use that number in your formula to determine volume.				

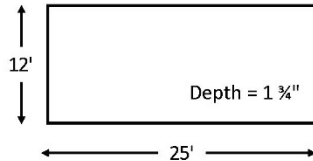
City of Morgan Hill Overflow Emergency Response Plan  
**Volume Estimation Computations & Examples**

**E-1: Page 2**

**Miscellaneous Computations & Examples (continued)**

**Area/Volume of a Rectangle or Square**

Formula: Length x Width x Depth = Volume in **cubic feet**



$$\frac{25'}{\text{Length}} \times \frac{12'}{\text{Width}} \times \frac{0.14'}{\text{Depth}} = \frac{42 \text{ Cubic Feet}}{\text{Volume}}$$

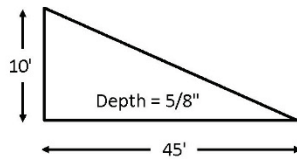
Multiply the volume by 7.48 gallons to determine the volume in **gallons**:

$$\frac{42 \text{ ft}^3}{\text{Volume}} \times \frac{7.48}{\text{gal/ft}^3} = \frac{314.16 \text{ gallons}}{\text{Volume}}$$

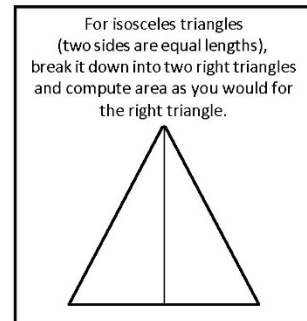
Convert Inches to Feet	
Inches	Feet
1/8"	0.01'
1/4"	0.02'
3/8"	0.03'
1/2"	0.04'
5/8"	0.05'
3/4"	0.06'
7/8"	0.07'
1"	0.08'
2"	0.17'
3"	0.25'
4"	0.33'
5"	0.42'
6"	0.50'
7"	0.58'
8"	0.67'
9"	0.75'
10"	0.83'
11"	0.92'
12"	1.00'

**Area/Volume of a Right Triangle**

Formula:  $\frac{1}{2} \times \text{Base} \times \text{Height} \times \text{Depth} = \text{Volume in cubic feet}$



$$0.5 \times \frac{45'}{\text{Base}} \times \frac{10'}{\text{Height}} \times \frac{0.05'}{\text{Depth}} \times \frac{7.48}{\text{gal/ft}^3} = \frac{84.15 \text{ gallons}}{\text{Volume}}$$

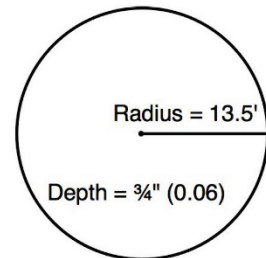


**Area/Volume of a Circle**

Formula:  $\pi \times r^2 \times \text{Depth} = \text{Volume in cubic feet}$

The radius is  $\frac{1}{2}$  the diameter, which is a straight line passing from side to side through the center of a circle.

$$\frac{13.5'}{\text{Radius}} \times \frac{13.5'}{\text{Radius}} \times \frac{3.14}{\pi} \times \frac{0.06'}{\text{Depth}} \times \frac{7.48}{\text{gal/ft}^3} = \frac{256.8 \text{ gallons}}{\text{Volume}}$$



## City of Morgan Hill Overflow Emergency Response Plan

**Volume Estimation: Eyeball Estimation Method (for ≤100 gallons)****E-2**

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	
<b>Estimated Total SSO Volume:</b>			

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:

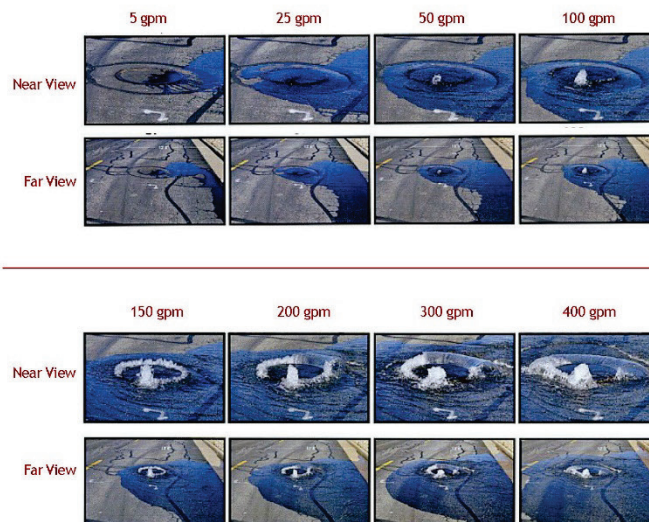
\_\_\_\_\_ gallons – \_\_\_\_\_ gallons = \_\_\_\_\_ gallons  
 Estimated SSO Volume      Rainfall      **Total Estimated SSO Volume**

STEP 7: Describe any assumptions made to determine any of the volume estimates including recovered volumes:

## City of Morgan Hill Overflow Emergency Response Plan

**Volume Estimation: Duration and Flow Rate Comparison Method****E-3**

Compare the SSO to reference images below to estimate flow rate of the current overflow. **NOTE: If the manhole cover in your picture has vent holes or more than one pry hole, do not use these pictures for comparison.** Describe which reference photo(s) were used and any additional factors that influenced applying the reference photo data to the actual SSO:



SSCSC Manhole Overflow Gauge: CWEA Southern Section Collections Systems Committee  
Overflow Simulation courtesy of Eastern Municipal Water District

Flow Rate Based on Photo Comparison: \_\_\_\_\_ gallons per minute (gpm)

Start Date and Time	1.
End Date and Time	2.
SSO Event Total Time Elapsed (subtract Line 1 from Line 2. Show in minutes.)	3.
Average Flow Rate GPM (Account for diurnal flow pattern)	4.
Total Volume Estimated Using Duration and Flow Method (Line 3 x Line 4)	5.

Describe any assumptions made to determine any of the volume estimates including recovered volumes:

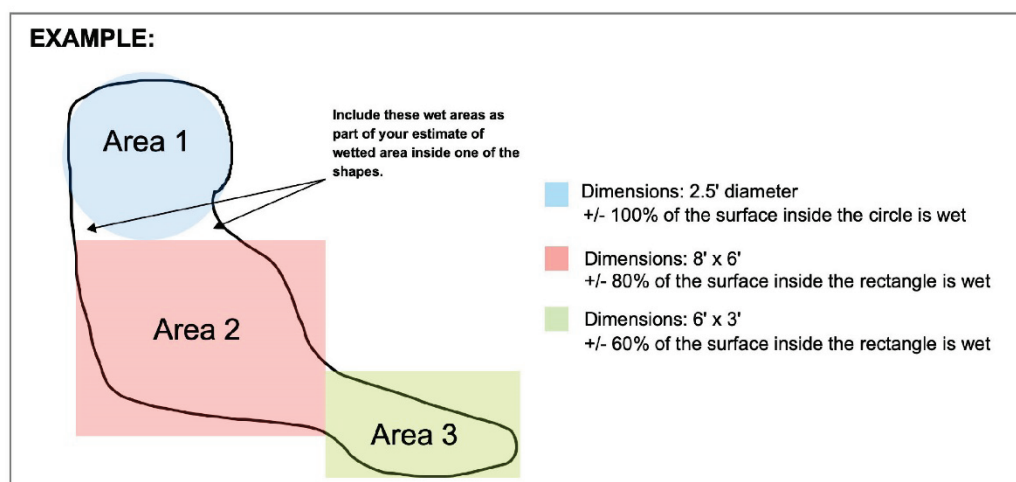
City of Morgan Hill Overflow Emergency Response Plan  
**Volume Estimation: Area/Volume Method**

**E-4: Page 1**

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 rectangles and circles. Label each area. See example below.



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City of Morgan Hill Overflow Emergency Response Plan

**Volume Estimation: Area/Volume Method**

**E-4: Page 2**

STEP 3: Calculate the area of the footprint by completing the table below for each area in Step 2. Measure actual depth of standing sewage whenever possible. When depth varies, measure several representative sample points and determine the average. If the depth is not measurable because it is only a wet stain, use 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")

**Rectangles:**

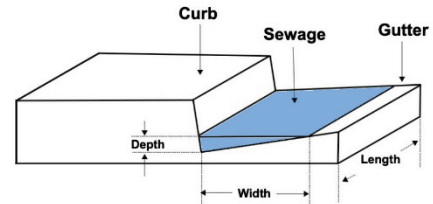
Area # (from labeled drawing)		Length	X	Width	X	% Wet	=	Area	X	Depth	=	Volume
	→	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>
	→	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>
	→	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>

**Circles:**

Area # (from labeled drawing)		π	X	Radius	X	Radius	X	% Wet	=	Area	X	Depth	=	Volume
	→	3.14	X	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>
	→	3.14	X	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>
	→	3.14	X	ft	X	ft	X	%	=	ft <sup>2</sup>	X	ft	=	ft <sup>3</sup>

STEP 4: If part of the spill is in a gutter, use the formula below to calculate the volume:

$$\frac{\text{Length}}{\text{Length}} \times \frac{\text{Depth}}{\text{Depth}} \times \frac{\text{Width}}{\text{Width}} \times 0.5 = \frac{\text{Volume}}{\text{Volume}} \text{ ft}^3$$



STEP 5: Calculate Total Spill Volume (sum of all of the volume calculations above): \_\_\_\_\_ ft<sup>3</sup>

STEP 6: Convert from cubic feet to gallons by multiplying by 7.48.

$$\frac{\text{spill volume in cubic feet}}{\text{spill volume in cubic feet}} \text{ ft}^3 \times 7.48 \text{ gallons} = \frac{\text{Total estimated volume}}{\text{Total estimated volume}} \text{ gallons}$$

City of Morgan Hill Overflow Emergency Response Plan  
**Volume Estimation: Area/Volume Method**

**E-4: Page 3**

**STEP 7:**

Describe any assumptions made to determine any of the volume estimates including recovered volumes:

## City of Morgan Hill Overflow Emergency Response Plan

**Volume Estimation: Upstream Connections Method****E-5**

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 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.

Time Period	Flow Rate Per EDU				SSO	
	A	B	C	D	E	F
	Gallons per Period	Hours per period	$A \div B =$ Gallons per Hour	$C \div 60 =$ Gallons per Minute	Minutes SSO was active during period	$D \times E =$ Gallons spilled 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		
<b>Total Estimated SSO Volume per EDU:</b>						

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

$$\frac{\text{gallons}}{\text{Volume per EDU}} \times \frac{\text{\# of EDUs}}{\text{\# of EDUs}} = \frac{\text{gallons}}{\text{Estimated SSO Volume}}$$

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).

Total Estimated SSO Volume: \_\_\_\_\_ gallons

STEP 5: Describe any assumptions made to determine any of the volume estimates including recovered volumes:

City of Morgan Hill Overflow Emergency Response Plan

**Drawing Worksheet**

**E-6**

---

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**INSERT TAB:  
Backup Forms**

City of Morgan Hill Overflow Emergency Response Plan  
**Backup Forms Checklist (Backup Only)**

**F-1**

**Complete this form only if there is a backup into a residence or business.**

**Instructions to Field Crew:**

1. Take photo of each form before giving it to the customer for documentation.
2. Tear forms listed below out of this workbook and hand to customer. *Leave the First Responder Form in this workbook, do not give to Customer.*
3. Check each item that was provided to the customer.
4. Have customer sign below.

**Forms/Documents:**

- ☐ F-3: Customer Information Letter
- ☐ F-4: Your Responsibilities as a Private Property Owner
- ☐ F-5: Claim for Damages

Forms Provided to:

\_\_\_\_\_  
 Customer Name

\_\_\_\_\_  
 Customer Signature

\_\_\_\_\_  
 Date

Check here if customer declines to sign: ☐

Forms Provided by:

\_\_\_\_\_  
 Employee Name

\_\_\_\_\_  
 Initial

**Formularios / Documentos:**

- ☐ F-3: Carta de Información del Cliente
- ☐ F-4: Sus Responsabilidades Como Propietario de Una Propiedad Privada
- ☐ F-5: Reclamación por daños

Formularios proporcionados a:

\_\_\_\_\_  
 Nombre del cliente

\_\_\_\_\_  
 Firma del cliente

\_\_\_\_\_  
 Fecha

Marque aquí si el cliente se niega a firmar: ☐

**Instruction to Operations Manager:**

Send photos, including the photo of the Customer Information Letter, and a copy of the First Responder form to the Deputy Director of Utilities.

City of Morgan Hill Overflow Emergency Response Plan  
**First Responder Form (Backup Only)**

**F-2: Page 1**

**Complete this form only if there is a backup into a residence or business.**

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:		PHONE:
Name: _____		DATE:
Title: _____		TIME:
TIME STAFF ARRIVED ON-SITE:		
DID THE CUSTOMER CALL A CLEANING CONTRACTOR? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide name and contact number:		
RESIDENT NAME: <input type="checkbox"/> Owner <input type="checkbox"/> Renter ADDRESS:  PHONE:	IF RENT, PROPERTY MANAGER(S): OWNER:  ADDRESS:  PHONE:	
# OF PEOPLE LIVING AT RESIDENCE:		
Approximate Age of Home:	# of Bathrooms:	# of Rooms Affected:
Numbers of Photographs or Videos Taken: <input type="checkbox"/> Photographs <input type="checkbox"/> Video <input type="checkbox"/> Customer did not provide or allow photographs		Where are photos/video stored?
Is nearest upstream manhole visibly higher than the drain/fixture that overflowed? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Does property have a Property Line Cleanout or BPD?		<input type="checkbox"/> Cleanout <input type="checkbox"/> BPD <input type="checkbox"/> Neither <input type="checkbox"/> Unknown
If yes, was the Property Line Cleanout/BPD operational at the time of the overflow?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Have there ever been any previous spills at this location?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Has the resident had any plumbing work done recently? <i>If YES, please describe:</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

**GO TO Page 2**

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City of Morgan Hill Overflow Emergency Response Plan  
**First Responder Form (Backup Only)**

**F-2: Page 2**

**SANITARY SEWER LINE BLOCKAGE LOCATION**

**PLEASE CHECK THE BOXES THAT DESCRIBE YOUR OBSERVATIONS:**

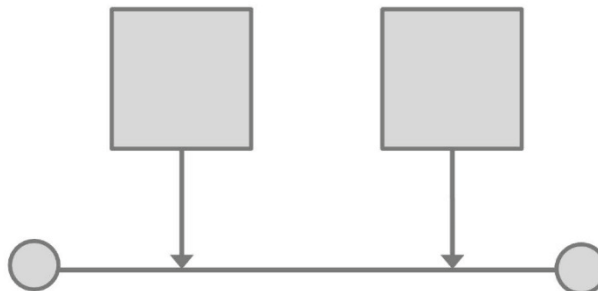
Building Cleanout Was:

- ☐ Non-Existent  
☐ Full  
☐ Empty

Property Line Cleanout was:

- ☐ Non-Existent  
☐ Full  
☐ Empty

On the diagram below, place an X where in the mainline or lateral you believe the problem occurred.



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

**Recommended Follow-Up Action(s):**

City of Morgan Hill Overflow Emergency Response Plan  
**Customer Information Letter (Backup Only)**

F-3 Page 1

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	(510) 429-5000
Complete Drying	751 Laurel St #538, San Carlos, CA	(650) 591-1599 / (925) 525-7262
Ideal Drying	1499 Evans Avenue, San Francisco, CA	(800) 379-6881
Restoration Management	535 Getty Ct., Ste A, Benicia, CA	(800) 400-5058 / (707) 750-6320
Restoration Management	32550 Central Ave., Union City, CA	(800) 400-5058 / (510) 315-5400
Montgomery Sansom Ltd.	305 Adrian Road, Millbrae, CA	(650) 777-9010
Britannia Cal Pacific	255 S Maple Ave, SSF, CA	(650) 742-6490
Four Star Cleaning & Restoration	4302 Solar Way, Fremont, CA	(800) 255-3333 / (510) 796-5900
Servpro	809 Laurel Street, #422, San Carlos, CA	(800) 737-8776 / (650) 591-4137
Vital Restoration 9-1-1	6 South Linden Ave. Unit #9, South San Francisco, CA	(650) 262-4545 / (650) 873-7867
Service Master	2731 Fair Oaks Ave., Redwood City, CA	(650) 299-9080
Service Master	439 Eccles Ave. South San Francisco, CA	(415) 584-6100
Service Master	2220 W Winton Ave., Hayward, CA 94545	(800) 480-8439 / (510) 300-2990

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

---

**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.

(continued)

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City of Morgan Hill Overflow Emergency Response Plan  
**Customer Information Letter (Backup Only)**

**F-3 page 2**

- File your claim with the City Clerk at 17575 Peak Avenue, Morgan Hill, CA 95037-4128, PH: (408) 779-7271, as soon as practical. The California Government Code, Sections 900 -960, requires filing a written claim and outlines specific timelines and notice procedures that must be used.
- Call the City's Claims Administrator and provide a number where you can be reached: Sedgwick Claims Management Services, Jaeran Ahn.
- The form and contents of a claim are specified by Section 910, et seq. A claim relating to a cause of action for death or for injury to person or to personal property or growing crops shall be presented not later than six months after accrual of the cause of action; other claims shall be presented within one year (*Section 911.2*).
- It is suggested that the claimant refer to claims law and be fully advised with respect to the exceptions and further provisions contained therein.

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

City of Morgan Hill Overflow Emergency Response Plan  
**Información al Cliente**

**F-3 (en español)**

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 violaciones 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	(510) 429-5000
Complete Drying	751 Laurel St #538, San Carlos, CA	(650) 591-1599 / (925) 525-7262
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Service Master	439 Eccles Ave. South San Francisco, CA	(415) 584-6100
Service Master	2220 W Winton Ave., Hayward, CA	(800) 480-8439 / (510) 300-2990

\* 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.

(Continúa en la siguiente página)

City of Morgan Hill Overflow Emergency Response Plan  
**Información al Cliente**

**F-3 página 2 (en español)**

---

**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.
- Presente su reclamo ante el Secretario de la Ciudad en 17575 Peak Avenue, Morgan Hill, CA 95037-4128, PH: (408) 779-7271, tan pronto como sea práctico. El Código de Gobierno de California, Secciones 900 -960, requiere la presentación de un reclamo por escrito y describe plazos específicos y procedimientos de notificación que deben usarse.
- Llame al Administrador de Reclamos de la Ciudad y proporcione un número donde pueda ser contactado: Sedgwick Claims Management Services, Jaeran Ahn.
- La forma y el contenido de una reclamación se especifican en la Sección 910, et seq. Una reclamación relativa a una causa de acción por la muerte o de lesión a la persona oa la propiedad personal o de los cultivos se presentarán a más tardar seis meses después de la acumulación de la causa de la acción, otras reclamaciones se presentarán dentro de un año (artículo 911.2).
- Se sugiere que el demandante se refieren a la ley las reclamaciones y estar plenamente informado con respecto a las excepciones y las demás disposiciones contenidas en el mismo.

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

City of Morgan Hill Overflow Emergency Response Plan

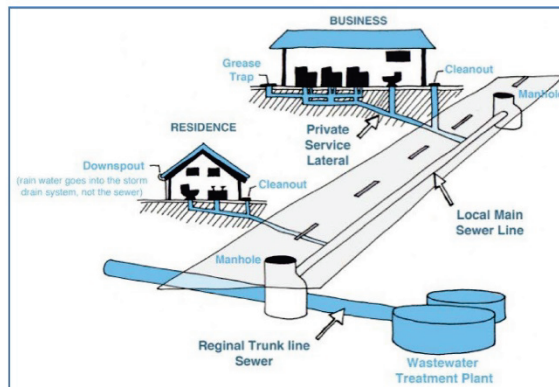
**Your Responsibilities as a Private Property Owner (Backup Only) F-4: Page 1**

How a Sewer System Works

A property owner's sewer pipes are called **service laterals** and are connected to larger local main and regional trunk lines. Service laterals run from the connection at the home to the connection with the public sewer. These laterals are the responsibility of the property owner and must be maintained by the property owner.

How do sewage spills happen?

Sewage spills occur when the wastewater in underground pipes overflows through a manhole, cleanout, or broken pipe. Most spills are relatively small and can be stopped and cleaned up quickly, but left unattended they can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and beaches. Common causes of sewage spills include grease build-up, tree roots, broken/cracked pipes, missing or broken cleanout caps, undersized sewers, and groundwater/rainwater entering the sewer system through pipe defects and illegal connections.



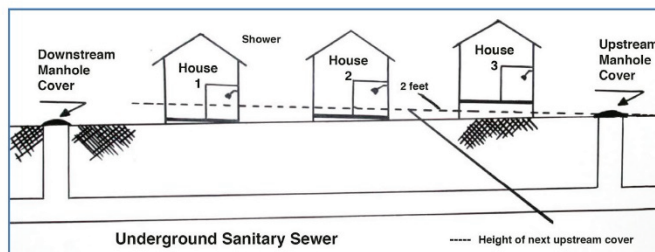
Prevent most sewage backups with a Backflow Prevention Device

This type of device can help prevent sewage backups into homes and businesses. If you don't already have a Backflow Prevention Device, contact a professional plumber or contractor to install one as soon as possible.

Is my home required to have a backflow prevention device?

Section 710.1 of the Uniform Plumbing Code (U.P.C.) states: "Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover or private sewer serving such drainage piping **shall** be protected from backflow of sewage by installing an approved type of backwater valve." The intent of Section 710.1 is to protect the building interior from mainline sewer overflows or surcharges.

Additionally, U.P.C. 710.6 states: "Backwater valves **shall** be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover."



**Spill cleanup inside the home:**

For large clean ups, a professional cleaning firm should be contacted to clean up impacted areas. If you hire a contractor, it is recommended to get estimates from more than one company. Sometimes, homeowner's insurance will pay for the necessary cleaning due to sewer backups. Not all policies have this coverage, so check with your agent.

If you decide to clean up a small spill inside your home, protect yourself from contamination by observing the following safety measures. Those persons whose resistance to infection is compromised should not attempt this type of clean up.

**Seek immediate attention if you become injured or ill during or after the cleanup process.**

**Other Tips:**

- Keep children and pets out of the affected area.
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup.
- Discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water & detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.

**Spill cleanup outside the home:**

- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Clean up sewage solids (fecal material) and place in properly functioning toilet or double bag and place in garbage container.
- On hard surfaces areas such as asphalt or concrete, it is safe to use a 2% bleach solution, or ½ cup of bleach to 5 gallons of water, but don't allow it to reach a storm drain as the bleach can harm the environment.
- After cleanup, wash hands with soap and water. Use water that has been boiled for 1 minute (allow to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a laundromat until your onsite wastewater system has been professionally inspected and serviced.

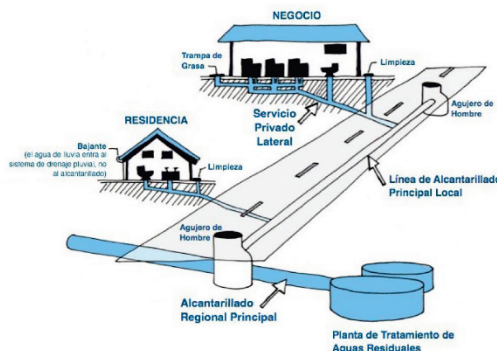
## City of Morgan Hill Overflow Emergency Response Plan

**Sus Responsabilidades Como Propietario de Una Propiedad Privada****F-4 Página 1: en español****¿Cómo funciona un sistema de alcantarillado?**

Las tuberías de alcantarillado de un propietario se denominan servicios laterales y están conectadas a líneas troncales principales y regionales locales más grandes. Los servicios laterales se ejecutan desde la conexión en el hogar hasta la conexión con el sistema de alcantarillado del Distrito. Estos laterales son responsabilidad del propietario y deben ser mantenidos por el propietario.

**¿Cómo ocurren los derrames de aguas residuales?**

Los derrames de aguas residuales ocurren cuando las aguas residuales en las tuberías subterráneas se desbordan a través de un pozo de acceso, limpieza o tubería rota. La mayoría de los derrames son relativamente pequeños y se pueden detener y limpiar rápidamente, pero si se los deja desatendidos, pueden causar riesgos para la salud, dañar viviendas y negocios y amenazar el medio ambiente, las vías fluviales locales y las playas. Las causas comunes de derrames de aguas residuales incluyen acumulación de grasa, raíces de árboles, tuberías rotas / agrietadas, tapas de limpieza faltantes o rotas, alcantarillas de tamaño insuficiente y aguas subterráneas / pluviales que ingresan al sistema de alcantarillado a través de defectos en las tuberías y conexiones ilegales.

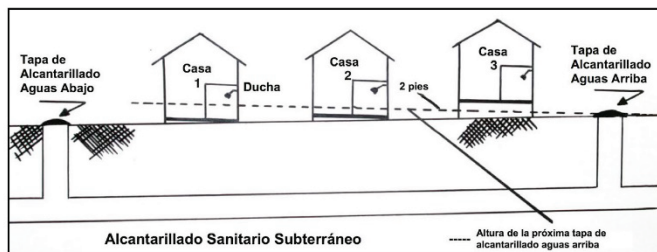
**Prevenga la mayoría de las copias de seguridad de aguas residuales con un dispositivo de prevención de reflujo**

Este tipo de dispositivo puede ayudar a prevenir las copias de seguridad de aguas residuales en hogares y empresas. Si aún no tiene un dispositivo de prevención de reflujo, comuníquese con un plomero o contratista profesional para instalar uno lo antes posible.

**¿Se requiere que mi hogar tenga un dispositivo de prevención de reflujo?**

La Sección 710.1 del Código Uniforme de Plomería (UPC) establece: "Los accesorios de tuberías de drenaje que tienen llantas de nivel de inundación ubicadas debajo de la elevación de la siguiente boca de alcantarilla corriente arriba o la alcantarilla privada que atiende dicha tubería de drenaje deben protegerse contra el reflujo de aguas residuales al instalar un tipo de válvula de evacuación". La intención de la Sección 710.1 es proteger el interior del edificio de los desagües o sobrecargas de alcantarillado de la línea principal.

Adicionalmente, U.P.C. 710.6 dice: Las válvulas de aguas residuales deben ubicarse donde puedan ser inspeccionadas y reparadas en todo momento y, a menos que estén continuamente expuestas, deben estar encerradas en un pozo de mampostería equipado con una cubierta removible del tamaño adecuado.



Limpieza de derrames dentro de la casa:

Para grandes limpiezas, se debe contactar a una empresa de limpieza profesional para limpiar las áreas afectadas. Si contrata a un contratista, se recomienda obtener estimaciones de más de una compañía. A veces, el seguro del propietario de vivienda pagará la limpieza necesaria debido a las reservas de alcantarillado. No todas las pólizas tienen esta cobertura, así que consulte con su agente.

Si decide limpiar un pequeño derrame dentro de su casa, protéjase de la contaminación observando las siguientes medidas de seguridad. Aquellas personas cuya resistencia a la infección esté comprometida no deben intentar este tipo de limpieza.

Otros consejos:

- Mantenga a los niños y mascotas fuera del área afectada.
- Apague los sistemas de calefacción / aire acondicionado
- Use botas de goma, guantes de goma y gafas durante la limpieza.
- Deseche los artículos que no se puedan lavar y desinfectar (como: colchones, alfombras, cosméticos, juguetes, etc.)
- Retire y deseche los paneles de yeso y el aislamiento contaminado con aguas residuales o aguas de inundación.
- Limpie a fondo todas las superficies duras (como pisos, concreto, molduras, muebles de madera y metal, mostradores, electrodomésticos, fregaderos y otros accesorios de plomería) con agua caliente y ropa o detergente para platos.
- Ayude al proceso de secado con ventiladores, unidades de aire acondicionado y deshumidificadores.
- Después de completar la limpieza, lávese las manos con agua y jabón. Use agua que haya sido hervida por 1 minuto (deje que el agua se enfríe antes de lavarse las manos) O use agua que haya sido desinfectada (solución de 1/8 cucharadita de lejía doméstica por 1 galón de agua). Dejar reposar durante 30 min. Si el agua está turbia, use ¼ cucharadita de lejía de uso doméstico por 1 galón de agua.
- Lave la ropa usada durante la limpieza con agua caliente y detergente (lave aparte de la ropa no contaminada).
- Lavar la ropa contaminada con aguas residuales en agua caliente y detergente. Considere usar una lavandería hasta que su sistema de aguas residuales en el sitio haya sido inspeccionado y reparado profesionalmente.

**Busque atención inmediata si se lesiona o se enferma durante o después del proceso de limpieza.**

Limpieza de derrames fuera de la casa:

- Mantenga a los niños y las mascotas fuera del área afectada hasta que se haya completado la limpieza.
- Use botas de goma, guantes de goma y gafas protectoras durante la limpieza del área afectada.
- Limpie los sólidos de alcantarillado (material fecal) y colóquelos en un inodoro o bolsa doble que funcione correctamente y colóquelos en un contenedor de basura.
- En áreas de superficies duras como el asfalto o el concreto, es seguro usar una solución de lejía al 2%, o ½ taza de lejía a 5 galones de agua, pero no permita que llegue a un drenaje de tormenta ya que la lejía puede dañar la ambiente.
- Después de la limpieza, lávese las manos con agua y jabón. Use agua que haya sido hervida por 1 minuto (deje enfriar antes de lavarse las manos) O use agua que haya sido desinfectada (solución de 1/8 cucharadita de cloro por 1 galón de agua). Dejar reposar durante 30 min. Si el agua está turbia, use ¼ cucharadita de lejía de uso doméstico por 1 galón de agua.
- Lave la ropa usada durante la limpieza con agua caliente y detergente (lave aparte de la ropa no contaminada).
- Lavar la ropa contaminada con aguas residuales en agua caliente y detergente. Considere usar una lavandería hasta que su sistema de aguas residuales en el sitio haya sido inspeccionado y reparado profesionalmente.

INSERT CLAIM FORM

INSERT TAB:  
Sampling Kit

City of Morgan Hill Overflow Emergency Response Plan  
**Field Sampling Kit Table of Contents**

**G-1**

<b>Form</b>	<b>Form Number</b>
Procedures for Sampling Receiving Waters and Posting	
Warnings after a Sewage Spill .....	G-2
Sample Collection Chain of Custody Record.....	-3

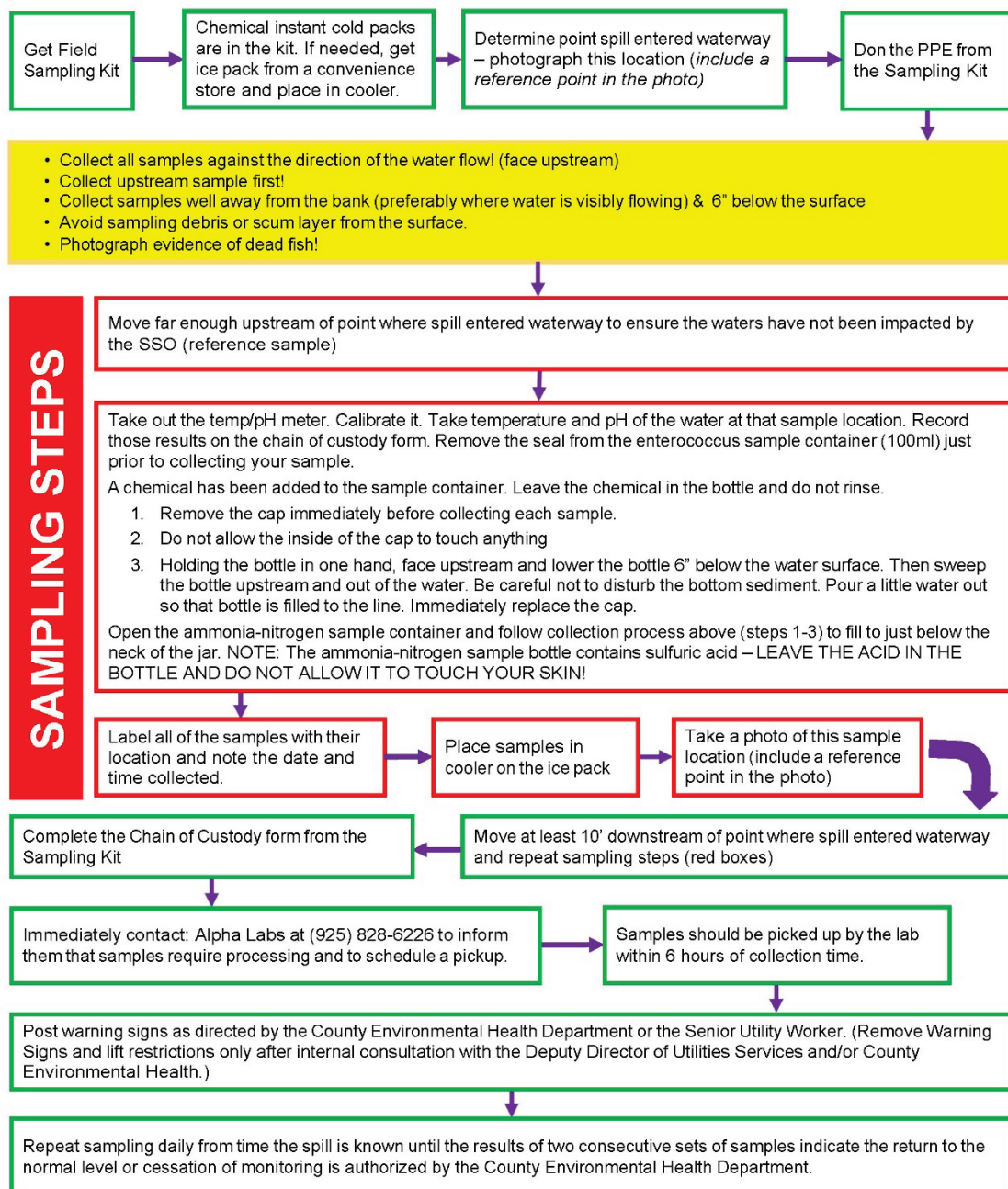
**The Field Sampling Kit contains:**

Item	Units
Small ice chest (can be used to store the kit items)	1
125ml Total Coliform Sampling Bottle preserved with Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	3
Ammonia-Nitrogen Sample Bottle (1-liter plastic bottle preserved with H <sub>2</sub> SO <sub>4</sub> )	3
Unpreserved 1-liter plastic bottle	3
Pair of Gloves – <i>check for holes</i>	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 ( <i>Sharpie</i> )	1

City of Morgan Hill Overflow Emergency Response Plan

Procedures for Sampling Receiving Waters and Posting Warnings After a Sewage Spill

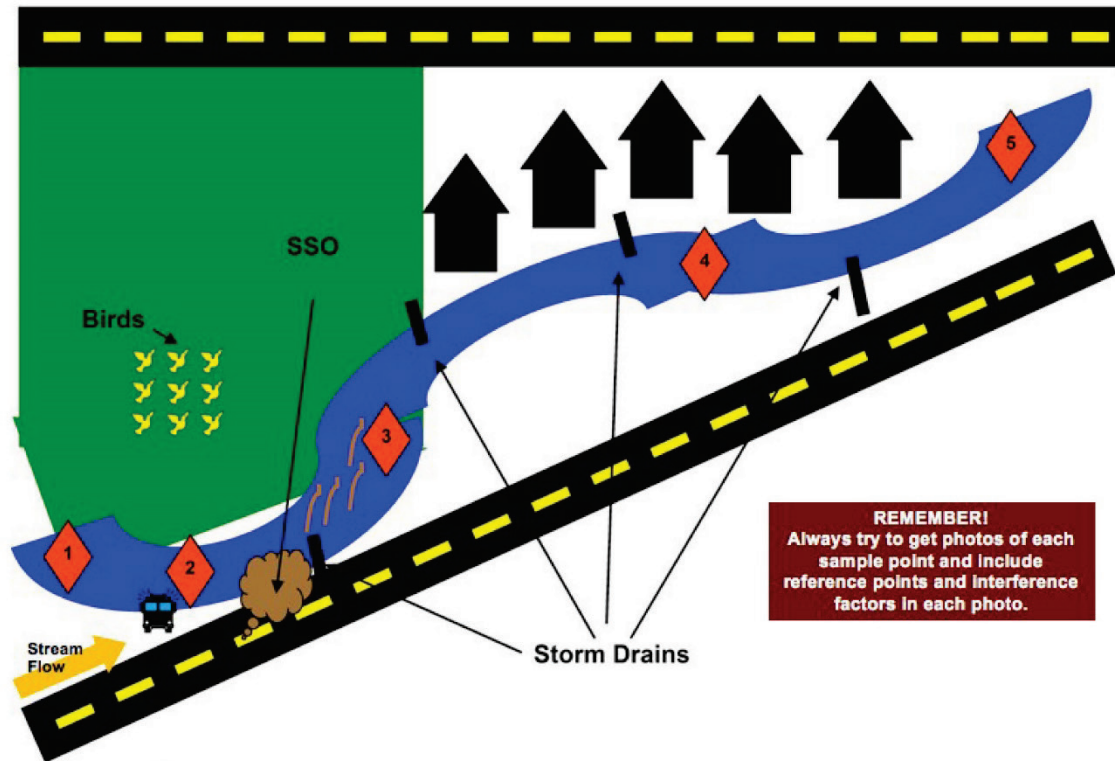
G-2 Page 1



City of Morgan Hill Overflow Emergency Response Plan

Procedures for Sampling Receiving Waters and Posting Warnings After a Sewage Spill

G-2 Page 2



- 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

**NOTE:** 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.

## City of Morgan Hill Overflow Emergency Response Plan

## Sample Collection Chain of Custody Record

G-3

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		Sample Location	Field pH	Field Temp			Ammonia	Enterococcus				☑☑☑ Lab Standard	☐ Special (see attached)
			Composite	Grab												
			☑	☑☑☑	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 courier	Date: By:	☐ Lab Admin File ☐ Prog/proj Mgr. ☐ Lab Prog. Coord.	☐ Delivery courier ☐ Pick-up

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INSERT TAB:  
Failure Analysis

City of Morgan Hill Overflow Emergency Response Plan  
**Collection System Failure Analysis**

**H-1: Page 1**

**OFFICE USE ONLY**

Incident Report #		Prepared By	
<b>SSO/Backup Information</b>			
Cause			
<b>Summary of Historical SSOs/Backups/Service Calls/Other Problems</b>			
Date	Cause	Date Last Cleaned	Crew
Records Reviewed By:		Record Review Date:	
<b>Summary of CCTV Information</b>			
CCTV Inspection Date		Tape Name/Number	
CCTV Tape Reviewed By		CCTV Review Date	
Observations			

Go to Side B

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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:					
Reviewed by (name and title):				Review Date:	

APPENDIX G:  
Water Quality Monitoring Plan

## Appendix E: Water Quality Monitoring Plan

**City of Morgan Hill**  
**Water Quality Monitoring Plan**  
**8/24/22**

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City of Morgan Hill  
**Water Quality Monitoring Program Plan**

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City of Morgan Hill  
**Water Quality Monitoring Program Plan**

## 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	Prokaryotic 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

City of Morgan Hill  
**Water Quality Monitoring Program Plan**

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

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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:

<b><u>Roles and Responsibility</u></b>	<b><u>Responsible Classification</u></b>
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

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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	Supervisor or designee
Coordination of field sampling	Supervisor or designee
Conduct field sampling per City protocols	Supervisor or designee
Authorization and direction for placement of public notifications and signage	Supervisor or designee
Photographs of sampling and signage placed to protect public health and safety	Supervisor or designee
Preparation of Chain of Custody for all samples taken including proper labeling	Supervisor or designee
Determination of spill travel time, if applicable.	Supervisor 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:

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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, 22<sup>nd</sup> 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

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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
- Llagas Creek
- Little Llagas 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

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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.

<b>Table 7.1: SFRWQCB Water Quality Objectives for Coliform Bacteria<sup>a</sup></b>		
<b>Beneficial Use</b>	<b>Fecal Coliform (MPN/100ml)</b>	<b>Total Coliform (MPN/100ml)</b>
Water Contact Recreation	Geometric mean < 200 90 <sup>th</sup> percentile < 400	Median < 240 No sample > 10,000
Non-contact Water Recreation <sup>d</sup>	Mean < 2000 90 <sup>th</sup> percentile < 4000	
Municipal Supply: • Surface Water <sup>c</sup> • Groundwater	Geometric Mean < 20	Geometric Mean < 100 < 1.1 <sup>e</sup>

**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

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<b>Table 7.2: Central Coast RWQCB Water Quality Objectives for Coliform Bacteria<sup>a</sup></b>		
<b>Beneficial Use</b>	<b>Fecal Coliform (MPN/100ml)</b>	<b>Total Coliform (MPN/100ml)</b>
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 <sup>d</sup>	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, 21<sup>st</sup> 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, 21<sup>st</sup> Edition

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## **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

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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

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## 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)

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- 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 on site 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

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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.

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**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 Supervisor 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 unionized 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.

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**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.

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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: <ul style="list-style-type: none"> <li>• The City of Morgan Hill Water Quality Monitoring Plan</li> <li>• Sampling technique, including hands on practice</li> <li>• Sampling equipment calibration, use and decontamination procedures, including hands on practice</li> <li>• Sampling safety</li> <li>• Completion of the Sampling Equipment Calibration/Maintenance Log, Surface Water Sampling Report and Chain of Custody</li> </ul>
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	Regularly
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 or 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.

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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**

**City of Morgan Hill  
Water Quality Monitoring Program Plan**

**Water Quality Monitoring Plan Change Log**

Date	Section(s) Changed	Summary of Change	Approved (signature)
7/24/22	Section 3, Section 5, Section 13, Attachment C	Removal of references to Water Quality Specialist; Replace Sr. Utility Worker with Supervisor, correct misspelling of Llagas creek;	

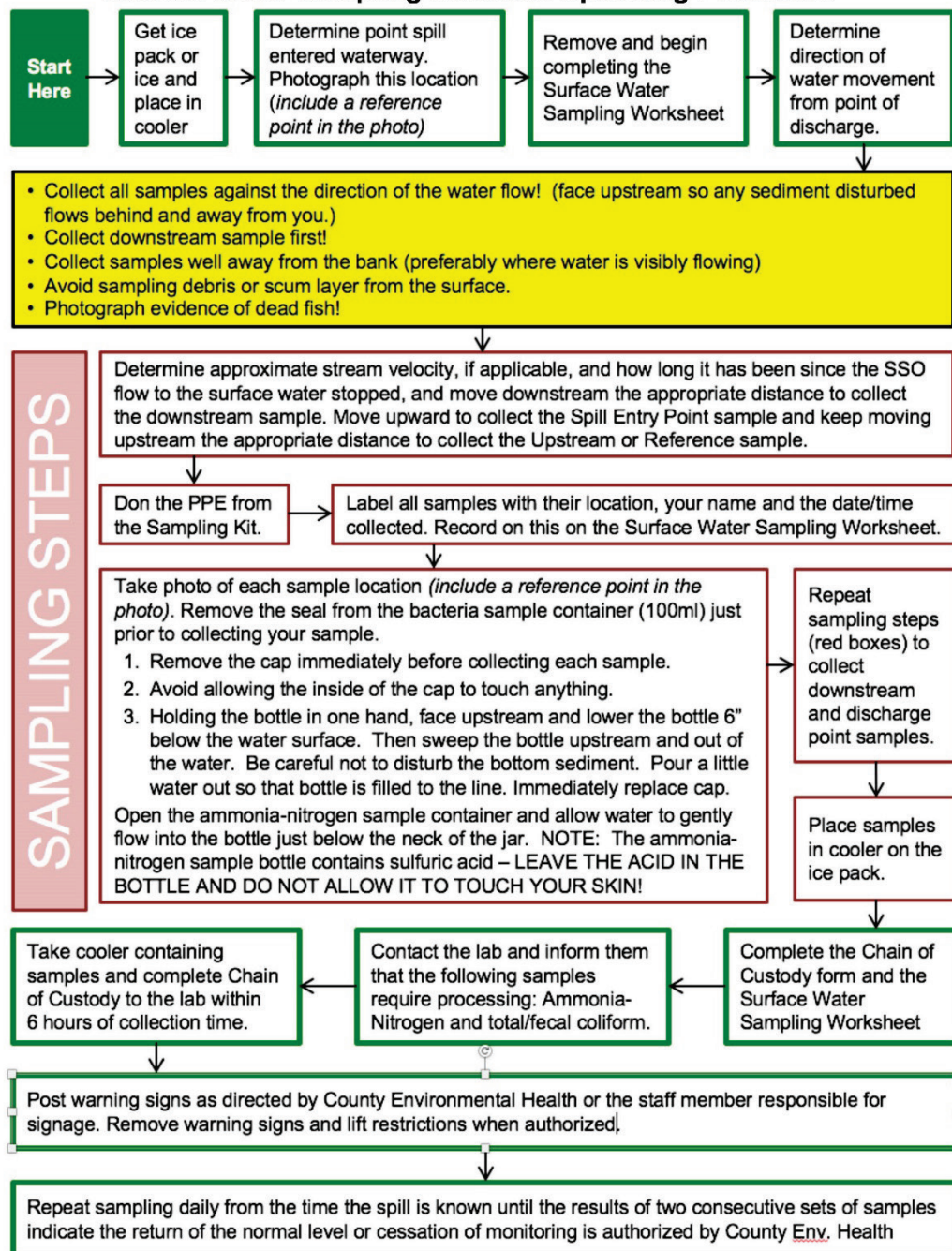
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**ATTACHMENT B**  
**Surface Water Sampling SOP**

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**Surface Water Sampling Standard Operating Procedure**



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**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		<input type="checkbox"/> Hazardous Waste	PO#	
Customer Address		<input type="checkbox"/> Unknown Material	WO#	
Customer Telephone	Mail Code	<b>CONTRACT LAB INFORMATION</b>		<b>Turnaround Requirement</b>
Program Name		Ship to:		<input type="checkbox"/> Normal (21 days)
Lab Program Coordinator	Phone #	Ship Date:		<input type="checkbox"/> Rush: _____
Sampled By		Courier:		<input type="checkbox"/> Other: _____

LIMS# (Issued by Lab)	SAMPLE COLLECTION INFORMATION						# Containers	Matrix*	Analysis Requested				QA/QC Requirements		Remarks/Notes
	Date	Time	Type		Sample Location	Sample Label ID			Ammonia	Total and Fecal Coliform					
			Composite	Grab											
			<input type="checkbox"/>	<input checked="" type="checkbox"/>	Upstream		2	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Lab Standard	
			<input type="checkbox"/>	<input checked="" type="checkbox"/>	Entry Point		2	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Special (see attached)	
			<input type="checkbox"/>	<input checked="" type="checkbox"/>	Downstream		2	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			<input type="checkbox"/>	<input checked="" type="checkbox"/>	Field Blank		2	O	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Sterile deionized 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	<b>Transport/Shipping Information</b>		
						<input type="checkbox"/> USPS	<input type="checkbox"/> UPS	<input type="checkbox"/> FedEx
						Tracing #:		
						<input type="checkbox"/> Other:		

**Sample Receiving Documentation**

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

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**ATTACHMENT D  
Surface Water Sampling Worksheet**

## Surface Water Sampling Worksheet

City of Morgan Hill  
Water Quality Monitoring Program Plan

Sample Date:	Sample Time: <input type="checkbox"/> AM <input type="checkbox"/> PM	Sample Location:
Sampler(s)' Name(s):		
Sampler(s)' Signature(s):		
What is being sampled? <input type="checkbox"/> Stream <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> River <input type="checkbox"/> Other:	If the SSO was not actively entering the surface water during sampling: A. Stream Velocity: _____ CFS B. How Long Has the SSO <b>NOT</b> 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:	
Weather at time of sampling: <input type="checkbox"/> Sunny <input type="checkbox"/> Overcast <input type="checkbox"/> Sprinkling <input type="checkbox"/> Raining <input type="checkbox"/> Snowing		
Was the SSO actively entering the surface water during Sampling? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, complete A-D in the gray box to the right →		

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
<input type="checkbox"/> <b>All Samples Labeled with:</b> <input type="checkbox"/> Date: a six-digit number indicating the year, month, day of collection <input type="checkbox"/> Time: a four-digit number indicating military time of collection. e.g. 0954 <input type="checkbox"/> Sample Location: Upstream, Source, or Downstream <input type="checkbox"/> Samplers: each sampler is identified <input type="checkbox"/> Parameter/preservative: analysis to be conducted for sample/sample preservation <input type="checkbox"/> <b>Chain of Custody Completed</b> <input type="checkbox"/> <b>Samples on Ice in Cooler</b> <input type="checkbox"/> <b>Pictures Taken of Each Sample Location and the Photo ID# Noted Above</b> <input type="checkbox"/> <b>All Sampling Equipment Collected</b>	

**City of Morgan Hill  
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**ATTACHMENT E  
Technical Report**

**City of Morgan Hill  
Water Quality Monitoring Program Plan**

**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
4. Upload the Technical Report to CIWQS and have the City's Legally Responsible Official (LRO) certify the report.

**City of Morgan Hill  
Water Quality Monitoring Program Plan**

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**ATTACHMENT F  
SURFACE WATER MAPS**

**City of Morgan Hill  
Water Quality Monitoring Program Plan**

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