CITY OF BELMONT

Sewer System Management Plan

City Council Recertified: October 13, 2015

Resolution No. 2015-098

City WDID #2SSO10094

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Table of Contents

Introduction **1**
Sewer System Management Plan 1
Sanitary Sewer System Facilities 1
Definitions, Acronyms, and Abbreviations 5
References 11
Element I: Goals **12**
I-1. SSMP Goals 12
Element II: Organization **13**
II-1. Organizational Structure 13
II-2. Authorized Representatives 15
II-3. Responsibility for SSMP Implementation and Maintenance 17
II-4. SSO Reporting Chain of Communication 18
Element III: Legal Authority **20**
III-1. Municipal Code 20
III-2. Agreements with Satellite Agencies 21
Element IV: Operations and Maintenance Program **22**
IV-1. Collection System Mapping 23
IV-2. Operations and Preventive Maintenance 23
IV-2.1. Gravity Sewers 25
IV-2.2. Pump Stations 28
IV-2.3. Force Mains 29
IV-2.4. Sewer Laterals (Private) 32
IV-2.5. Root Foaming 33
IV-2.6. Rehabilitation and Replacement Program 34
IV-2.7. Training 34
IV-2.8. Equipment and Replacement Parts 35
IV-3. Element IV Appendices 35
Appendix IV-A: Standard Operating Procedures 35
Appendix IV-B: Capital Improvement Program Budget 36
Appendix IV-C: Major Sewer System Equipment and Replacement Parts Inventory 37

Appendix IV-D: Pump Station Condition Assessment Checklist 39
Element V: Design and Performance Provisions 45
V-1. Design Criteria for Installation, Rehabilitation and Repair 45
V-1.1. General 45
V-1.2. Pump Stations 45
V-1.3. Private Sewer Systems and Private Laterals 45
V-2. Inspection and Testing Criteria 46
V-2.1. New and Rehabilitated Gravity Sewers, Manholes, and Pump Stations 46
Element VI: Overflow Emergency Response Plan 47
VI-1. Purpose 47
VI-2. Policy 48
VI-3. Definitions As Used In This OERP 48
VI-4. SSO Detection and Notification 51
VI-4.1. Public Observation 51
VI-4.2. Normal Work Hours 52
VI-4.3. After Hours 52
VI-4.4. City Staff Observation 54
VI-4.5. Contractor Observation 54
VI-4.6. SSO Response Procedures 54
VI-4.7. Sewer Overflow/Backup Response Summary 54
VI-4.8. First Responder Priorities 56
VI-4.9. Safety 56
VI-4.10. Initial Response 56
VI-4.11. Initiate Spill Containment Measures 57
VI-4.12. Restore Flow 57
VI-4.13. Equipment 57
VI-5. Recovery and Cleanup 58
VI-5.1. Estimate the Volume of Spilled Sewage 58
VI-5.2. Recovery of Spilled Sewage 58
VI-5.3. Clean-up and Disinfection 59
VI-5.4. Public Notification 60
VI-6. Water Quality 60

VI-6.1. Waters of the State 60
VI-6.2. Water Quality Sampling and Testing 61
VI-6.3. Water Quality Monitoring Plan 61
VI-6.4. SSO Technical Report 61
VI-7. Sewer Backup Into/Onto Private Property Claims Handling Procedure 62
VI-8. Notification, Reporting, Monitoring and Recordkeeping Requirements 63
VI-8.1. Regulator Required Notifications 63
VI-8.2. Complaint Records 65
VI-9. Post SSO Event Debriefing 66
VI-10. Failure Analysis Investigation 67
VI-11. SSO Response Training 67
VI-11.1. Initial and Annual Refresher Training 68
VI-11.2. SSO Response Drills 69
VI-11.3. SSO Training Record Keeping 69
VI-11.4. Contractors Working On City Sewer Facilities 69
VI-12. Authority 70
VI-13. References 70
Element VII: Fats, Oils, and Grease (FOG) Control Program 71
VII-1. Nature and Extent of FOG Problem 71
VII-2. FOG Source Control Program & Inspections 72
VII-3. Response to GWDR Requirements 73
Element VIII: System Evaluation and Capacity Assurance Plan 76
VIII-1. System Evaluation - Collection System Master Plan 76
VIII-2. Design Criteria 77
VIII-3. Capacity Enhancement Measures - Capital Improvement Program 77
VIII-4. Schedule 78
Element IX: Monitoring, Measurement, and Program Modifications 79
IX-1. Performance Measures 79
IX-2. Baseline Performance 79
IX-2.1. Mains, Pump Stations, and Force Mains 79
IX-3. Performance Monitoring and Program Changes 83
IX-4. References 83

Element X: SSMP Program Audits 84
X-1. SSMP Updates 85
Element XI: Communication Program 92
XI-1. Communication Program 92
XI-2. Communicating Sanitary Sewer System Performance 93
Appendices 94
Appendix A: Sewer System Management Plan Audit Reports 94
Appendix B: Log of Sewer System Management Plan Changes 100
Appendix C: Sewer System Management Plan Council Adoption Documents 101

Table of Tables

Intro Table 1: Gravity Sewer and Force Main System Size Distribution 3
Intro Table 2: Sewer System Materials of Construction 3
Intro Table 3: Inventory of Sewer Lines by Pipe Age 4
Table II - 1: Responsible Officials in Chain of Communication 18
Table III - 1: Summary of Legal Authorities in the Belmont Municipal Code and Other Sources 20
Table IV - 1: High Frequency Lines 25
Table IV - 2: Historical Line Cleaning Results 25
Table IV - 3: Historical Results of Closed Circuit Television 27
Table IV - 4: Pump Station Locations and Descriptions 30
Table IV - 5: Force Main Locations and Descriptions 31
Table IV - 6: Capital Improvement Program Budget (in $1000's) 36
Table VI - 1: Regulator Required Notifications 63
Table VII - 1: Historical FOG-Related SSOs 72
Table IX - 1: Gravity Sewer, Pump Station, and Force Main SSOs by Fiscal Year 80
Table IX - 2: FY Totals for SSOs by Cause 81
Table IX - 3: FY Totals for Sewer Mains (Volume Spilled, Portion Contained, and Volume to Surface Waters) 82
Table X - 1: SSMP Audit Checklist 86

Table of Figures

Intro Figure 1: Belmont Sewer System Map 2
Figure IV - 1: Belmont Public Works Department Organization Chart 24
Figure IV - 2: CCTV Return Frequency based upon PACP Ratings..... 27
Figure IV - 3: Pump Station Location Map 29
Figure VI - 1: Overview of Receiving a Sewage Overflow or Backup Report Procedure 53
Figure VI - 2: Overview of SSO response activities..... 55
Figure IX - 1: Trend in Gravity Sewer, Lift Station, and Force Main SSOs 80
Figure IX - 2: Trend in Gravity Sewer, Lift Station and Force Main SSOs by Cause 81
Figure IX - 3: SSO Volume Recovered or Reaching Surface Waters, Percentage..... 82

Introduction

Sewer System Management Plan

This Sewer System Management Plan (SSMP) has been prepared by the Public Works Department of the City of Belmont 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 existing SSMP, in continued compliance with the GWDR.

The structure (section numbering and nomenclature) of this SSMP follows the above referenced GWDR and MRP. This SSMP is organized by the SWRCB outline of elements; and contains language taken from the GWDR as at that beginning of each element. The GWDR uses the term "Enrollee" to mean each individual municipal wastewater agency that has completed and submitted the required application for coverage under the WDR (in this case, the Enrollee is the City of Belmont). The City's waste discharger identification number (WDID) in the California Integrated Water Quality System (CIWQS) is 2SSO10094.

Sanitary Sewer System Facilities

The City operates a sanitary sewer system that serves a population of approximately 26,000 in an 8.7 square mile service area. The sewer system serves 7,688 residential connections and 355 commercial, industrial and institutional customers as of 2015. The sewer system consists of 85 miles of gravity sewers (approximately 2,937 line segments), 2,674 manholes, 5 miles of force mains, and 11 pump stations. The sewers range in size from two (2) inches to twenty-seven (27) inches in diameter. There are no siphons. The property owner is fully responsible for installation, maintenance and repair of the parcel private sewer lateral(s).

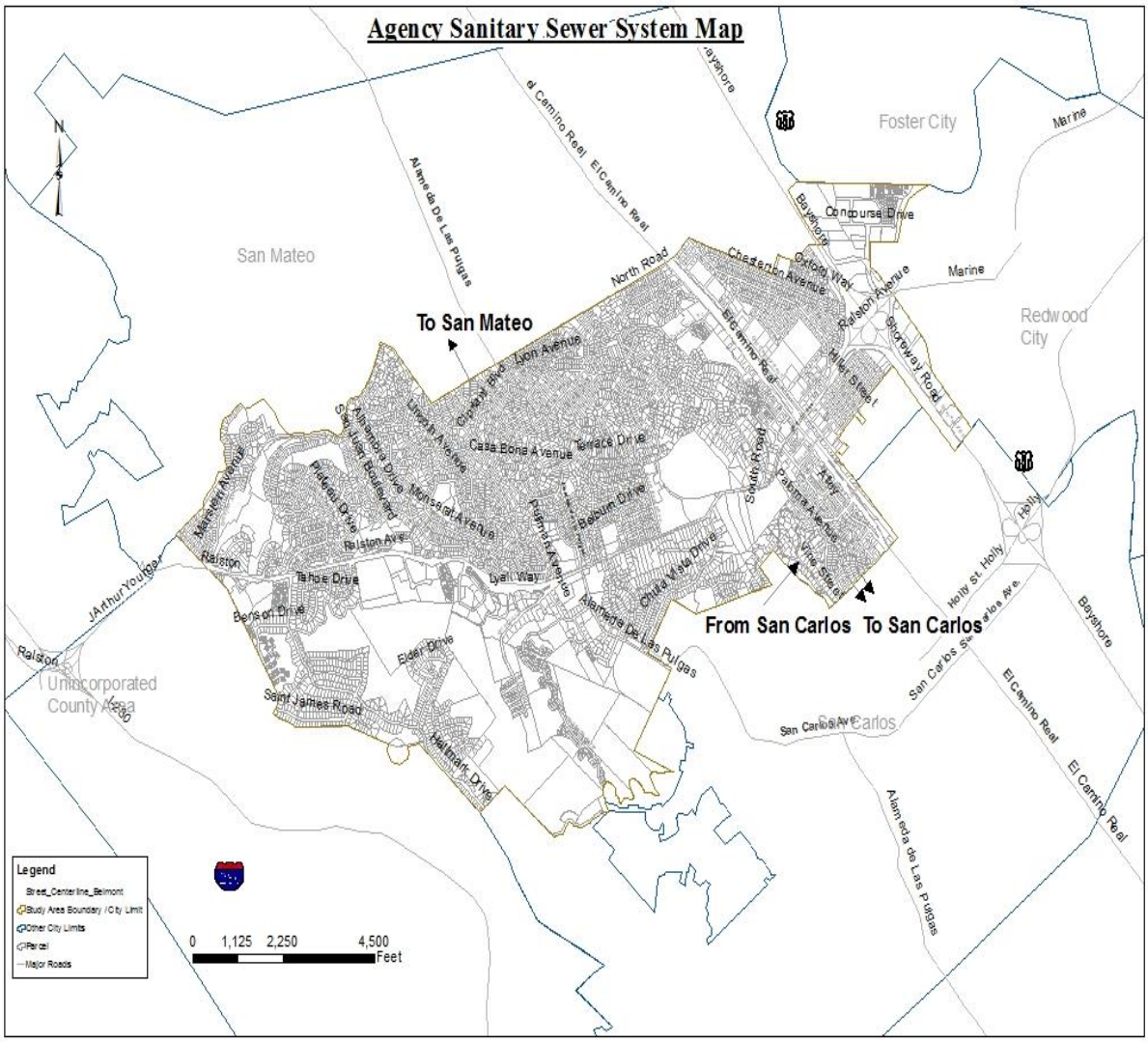
Intro Figure 1 contains an overview map of the City's sanitary sewer system.

Intro Table 1 provides the composition of the piping system by size.

Intro Table 2 provide the composition of the sewer piping material of construction.

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

Intro Figure 1: Belmont Sewer System Map



Intro Table 1: Gravity Sewer and Force Main System Size Distribution

Diameter, inches	Pipe Length, linear feet	Portion of Sewer System, %
2	253	0.1
4	962	0.2
6	340,555	80.7
8	45,852	10.9
10	10,087	2.4
12	8,423	2.0
15	1,685	0.4
16	1,711	0.4
18	4,611	1.1
21	3,781	0.9
24	2,382	0.6
27	1,605	0.4
68	144	0.03
Total	422,051	100.0

Intro Table 2: Sewer System Materials of Construction

Material	Pipe Length, LF	Percent of Sewer System, %
CIP	1452	0.3
ACP	210	0.05
DIP	1,085	0.3
HDPE	23,595	5.6
PVC	27,726	6.6
RCP	1,605	0.4
VCP	366,378	86.85
Total	422,051	100.0

Intro Table 3: Inventory of Sewer Lines by Pipe Age

Age in Years	Construction Period	Percent of System	Footage of Main Sewer
0-15	2000 - current	42	177,070
16 – 35	1980 – 1999	21	90,401
36 – 55	1960 – 1979	15	63,496
56 – 75	1940 – 1959	16	66,422
76 – 95	1920 – 1939	6	24,662
95 – 115	1900 – 1919	0	0
>115	Before 1900	0	0
Total, feet:			475,756

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.

Building Lateral – see Private Sewer lateral

Calendar Year (CY)

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

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

Cast Iron Pipe (CIP)

City
Refers to the City of Belmont

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. Hansen is the propriety software the City uses for CMMS.

Ductile Iron Pipe (DIP)

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.

Feet per sec (fps)

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

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

Food Service Establishment (FSE)
Refers to commercial or industrial facilities where food is handled/prepared/served that discharge to the sanitary sewer system.

Full-time Equivalent (FTE)
Refers to the equivalent of 2,080 paid labor hours per year by a regular, temporary, or contract employee.

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

Geographical Information System (GIS)
Refers to the City's system that it uses to capture, store, analyze, and manage geospatial data associated with the City's sanitary sewer system assets.

Global Positioning System (GPS)
Refers to a field device it that is recommended to determine the longitude and latitude of sanitary sewer overflows for use in meeting CIWQS reporting requirements.

Gallons per Day (GPD)

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

Green Book
Standard Specifications for Public Works Construction (2015 or most current version).

Hansen Software
The software used by the City for computerized maintenance management. (CMMS)

High Density Polyethylene (HDPE)

Mercury (HG)

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).

Lateral – See Private Sewer Lateral

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

Lift Station (LS) or Pump Station (PS)
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 wastewater collection system piping that is not a private lateral connection to a user.

Monitoring, Measurement, and Plan Modifications (MMPM)

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

Municipal Separate Storm Sewer System (MS4)

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:

- 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.
- 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.
- 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)
That portion of a private property's building sewer as defined by the plumbing code, and is further defined as the piping of a drainage system that extends from the end of the building drain to the public sewer which includes the connection to the public sewer.

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

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

Public Works (PW)

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

Reinforced Concrete Pipe (RCP)

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

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

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

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

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

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

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

SSO Categories:

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

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

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

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

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

Sanitary Sewer System or Sewer System
Refers to the sanitary sewer facilities that are owned and operated by the City.

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

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

Sewer System Management Plan (SSMP)

Silicon Valley Clean Water (SVCW)

Standard Dimension Ratio (SDR)
Refers to the ratio of pipe diameter to pipe wall thickness in plastic pipes.

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

Standard Specifications
Refers to the latest edition of Standard Specifications published by the California Department of Transportation, Caltrans.

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

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

Supervisory Control and Data Acquisition (SCADA)
Refers to the system that is employed by the City to monitor the performance of its lift stations and to notify the operating staff when there is an alarm condition that requires attention.

System Evaluation and Capacity Assurance Plan (SECAP)

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)

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

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

Water Quality Monitoring Plan (WQMP)

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

References

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

State 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.

Element I: Goals

SWRCB Waste Discharge Requirement:

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

I-1. SSMP Goals

The goals of the City of Belmont SSMP are:

1. Properly manage, operate, and maintain the sewer collection system.
2. Demonstrate legal authority of the sewer system through the use of ordinances for enforcement of violations and to effectively manage the system.
3. Minimize the frequency and severity of sanitary sewer overflows.
4. Protect public health.
5. To respond quickly and respectfully to public notifications of SSOs or other collection.
6. To provide adequate capacity to convey peak flows to the wastewater treatment plant.
7. Perform system inspections to effectively maintain and to identify problem areas of the sewer system to be addressed through the Capital Improvement Plan (CIP) for scheduling and funding of proposed rehabilitations.
8. Provide regular cleaning on sewer main lines. Provide more frequent cycles of cleaning on sewer main lines experiencing problems until permanent repairs can be made.
9. Perform all operations in a safe manner to avoid personal injury and property damage.

Element II: Organization

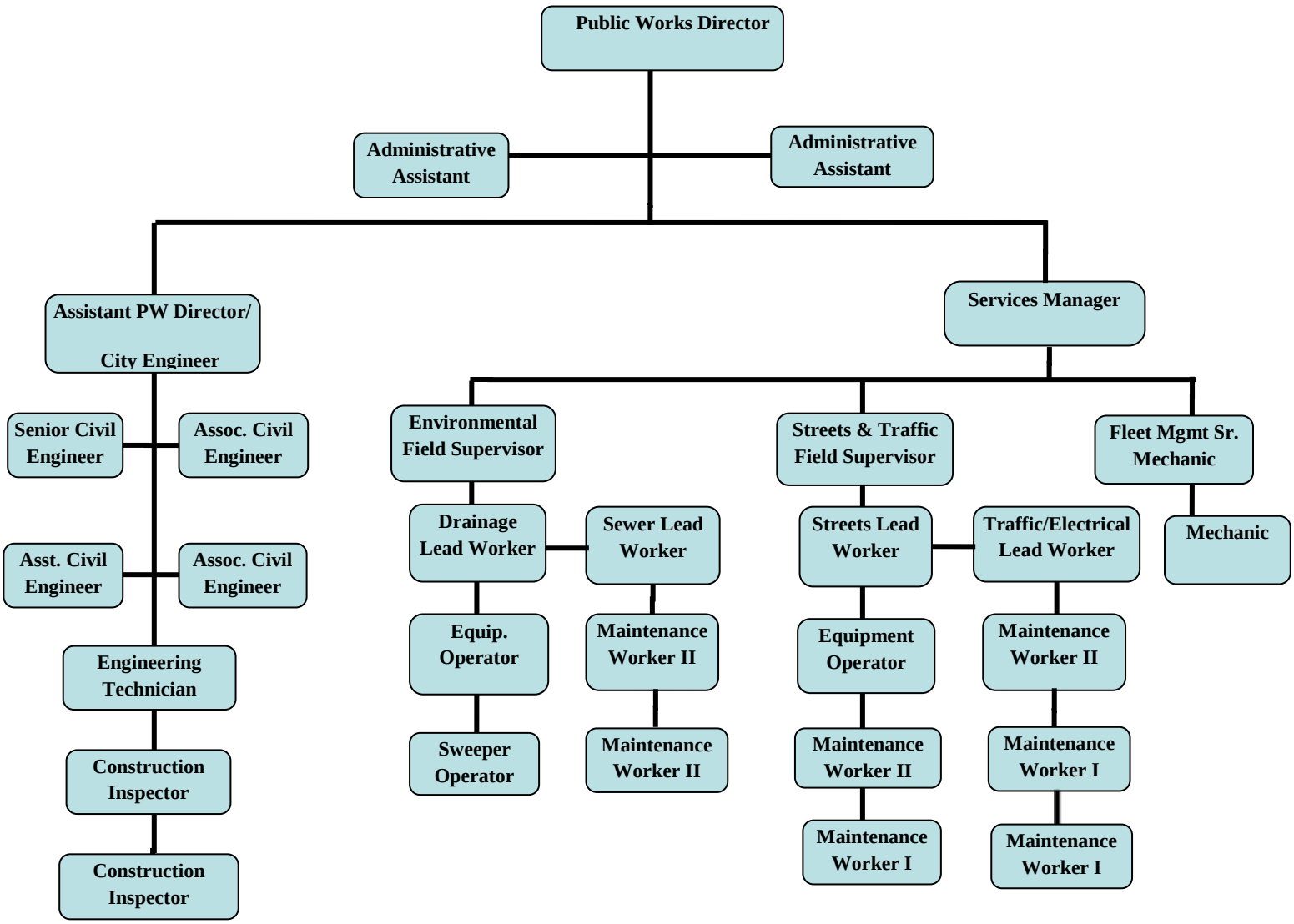
SWRCB Waste Discharge Requirement:

The Sewer System Management Plan (SSMP) must identify:

- The name of the responsible or authorized representative as described in Section J of this Order.
- 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
- The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).

II-1. Organizational Structure

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


Public Works Director
Administrative Assistant
Administrative Assistant
Assistant PW Director/ City Engineer
Services Manager
Senior Civil Engineer
Assoc. Civil Engineer
Asst. Civil Engineer
Assoc. Civil Engineer
Engineering Technician
Construction Inspector
Construction Inspector
Environmental Field Supervisor
Drainage Lead Worker
Sewer Lead Worker
Equip. Operator
Maintenance Worker II
Sweeper Operator
Maintenance Worker II
Streets & Traffic Field Supervisor
Streets Lead Worker
Traffic/Electrical Lead Worker
Equipment Operator
Maintenance Worker II
Maintenance Worker II
Maintenance Worker I
Maintenance Worker I
Maintenance Worker I
Fleet Mgmt Sr. Mechanic
Mechanic

II-2. Authorized Representatives

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

Public Works Director - Plans, organizes, directs, and supervises the public works activities of the City. Advises the City Council and Planning Commission on engineering and public works matters, including those related to the collection system. Prepares and controls department budget. Reviews project plans and specifications for public works projects and performs technical engineering planning studies. Confers with engineering consultants and officials of other public works departments

Assistant Public Works Director Legally Responsible Official (LRO) - Works under the broad policy guidance and direction of the Public Works Director. Works to improve efficiency and effectiveness of operations. Assists the Public Works Director in development of department plans and programs, including sewer operations and the Capital Improvement Program. Supervises the review of private project development plans for compliance with codes, regulations, and standards, adequacy of applications for permits and compliance with approved plans.

Associate Civil Engineer Data Submitter (DS) - Acts as project manager on public works sewer projects. Prepares plans, specifications, and preliminary cost estimates. Coordinates and confers with maintenance department on sanitary sewer system issues. Confers with contractors, consultants, and the public on engineering and construction matters. Prepares reports on sewer and other public works projects.

Public Works Services Manager Legally Responsible Official **(**LRO) - Plans, organizes, and supervises the maintenance and repair of City public works infrastructure, including sewers. Manages the Municipal Service Center. Reviews plans and specifications for sewer and other projects, and makes recommendations regarding maintenance, construction, and operations aspects. Controls budget expenditures within the Maintenance Division. Confers with contractors, engineers, and members of the general public on construction and maintenance problems and procedures.

Field Supervisor Data Submitter (DS) **-** Supervises sewer maintenance workers. Schedules work assignments. Maintains records of projects assigned and completed, supplies and equipment used, and costs incurred. Investigates sewer-related complaints from the general public. Estimates needed equipment and equipment maintenance. Reports SSOs to Regional and State Water Boards.

Lead Worker. Supervises sewer maintenance workers under direction of the Field Supervisor. Leads work assignments, keeps records, and investigates sewer-related complaints from the general public.

Maintenance Workers I/II. Cleaning, unplugging, and repairing of the sewer lines. Operating of power equipment. Conducting routine preventive maintenance of the sewer lines and sewer pump stations. Responding to emergency calls. Maintenance workers rotate between street, sewer, storm and traffic maintenance divisions, which provides training and hands-on practice to respond to an emergency.

CCTV Operator. One person provides on-going CCTV inspection of sewer mains for sewer system condition assessment.

Construction Inspector. Coordinates, documents and inspects capital improvement projects work to ensure compliance with plans and specifications; communicates with contractors to ensure compliance with applicable codes and regulations. This person is also responsible for I/I investigations and enforcement.

Contract Engineer. Provides assistance in design of sewer capital improvement projects, assures compliance with regulatory codes and standards.

Engineering Technician, Provides technical support and responsible for updating asset maps and GIS.

Authorized Representatives:

The City's authorized representative in all wastewater collection system matters is the Public Works Director. The Assistant Public Works Director and Public Works Services Manager are authorized to certify electronic spill reports submitted to the SWRCB.

The Assistant Public Works Director/City Engineer is authorized to act in the Director's absence.

The Assistant Public Works Director and Public Works Services Manager are authorized to submit and certify electronic spill reports to the appropriate government agencies.

The Field Supervisors and Associate Civil Engineer are the designated Data Submitters in CIWQS and are authorized to submit SSO electronic reports to the appropriate government agencies.

II-3. Responsibility for SSMP Implementation and Maintenance

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

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

Table II - 1: Responsible Officials in Chain of Communication

Element	Element Name	Responsible City Official	Phone	Email
	Introduction	Director of Public Works	650-595-7459	aoskoui@belmont.gov
1	Goals	Director of Public Works	650-595-7459	aoskoui@belmont.gov
2	Organization	Director of Public Works	650-595-7459	aoskoui@belmont.gov
3	Legal Authority	Director of Public Works	650-595-7459	aoskoui@belmont.gov
4	Operations and Maintenance Program	Public Works Services Manager (currently filled by Field Supervisor)	650-637-2932	tmurray@belmont.gov
5	Design and Performance Provisions	Assistant Public Works Director	650-595-7469	lalvarez@belmont.gov
6	Overflow Emergency Response Plan	Public Works Services Manager (currently filled by Field Supervisor)	650-637-2932	tmurray@belmont.gov
7	Fats, Oils and Grease (FOG) Control Program	Assistant Public Works Director	650-595-7469	lalvarez@belmont.gov
8	System Evaluation and Capacity Assurance Plan	Assistant Public Works Director	650-595-7469	lalvarez@belmont.gov
9	Monitoring, Measurement and Program Modifications	Public Works Services Manager (currently filled by Field Supervisor)	650-637-2932	tmurray@belmont.gov
10	Program Audits	Associate Civil Engineer	650-595-7463	bpalatnik@belmont.gov
11	Communications Program	Director of Public Works	650-595-7459	aoskoui@belmont.gov

II-4. SSO Reporting Chain of Communication

The SSO Reporting Chain of Command follows the flowchart shown above in

The Belmont Public Works Department Organization Chart and the **OERP Sewer Backup Response Flowchart (B-1)**. Reporting process and responsibilities are described in detail in the Overflow Emergency Response Plan. Important contact numbers for the reporting of SSOs are listed below according to the chain of command.

Table II - 2: Contact Numbers for SSO Chain of Communication

Call Location	**Contact Telephone Number**
City Hall Public Works	(650) 595-7425
Police Department Dispatch Center – (AFTER HOURS)	(650) 595-7400
On-Call Personnel (24/7) – (AFTER HOURS)	(650) 846-9498 (p) or (650) 846-0231 (p)
On-call Sewer Service Truck	(650) 222-4925
Field Supervisor	(650) 637-2932 or (650) 222-6460
Public Works Services Manager	(650) 595-7464 or (650) 222-6457
Public Works Director	(650) 595-7459 or (619) 980-3892

Element III: Legal Authority

SWRCB Waste Discharge Requirement:

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

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

III-1. Municipal Code

The Belmont Municipal Code describes the City's current legal authority required for compliance with the GWDR. That authority is specifically contained within Title 17 of the Municipal Code and generally within other Municipal Code Titles that are summarized in **Table III - 1**.

Table III - 1: Summary of Legal Authorities in the Belmont Municipal Code and Other Sources

Requirement	**Legal Authority Reference Belmont Municipal Code Chapter 21 Sewage and Sewage Disposal**
Prevent illicit discharges into the wastewater collection system	21-178-21-167 21-178-21-190
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	21-159 7.61 et seq.
Require that sewers and connections be properly designed and constructed	21-20 through 21-37
Require proper installation, testing, and inspection of new and rehabilitated sewers	21-6

Requirement	Legal Authority Reference Belmont Municipal Code Chapter 21 Sewage and Sewage Disposal
Establishes the property owner's responsibility for the sewer laterals, which is privately owned up to and including the connection to the City's sewer system	Sewer Lateral Ordinance 1070 21-210 to 21.217 or Chapter 7
Control infiltration and inflow (I/I) from private service laterals	7-218, 21-1, 21-210
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	Division 6 – Plumbing Code
Authority to inspect grease producing facilities	21-122
Enforce any violation of its sewer ordinances	21-133 through 21-150 21-152 through 21-159

III-2. Agreements with Satellite Agencies

There is an existing agreement between the City of San Mateo and City of Belmont for sanitary sewer main connections and charges entered into on October 20, 1981 (Resolution 5496 of the City of Belmont and Resolution 159 of the City of San Mateo.)

Element IV: Operations and Maintenance Program

SWRCB Waste Discharge Requirement:

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

a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;

b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventive Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;

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

d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and provide equipment and replacement part inventories, including identification of critical replacement parts.

IV-1. Collection System Mapping

The City has a Geographic Information System (GIS) that includes the information for its wastewater collection system assets. The GIS (ArcGIS) is managed by the City's Engineering division who is responsible for all appropriate updates, including adding any new system infrastructure constructed or accepted for maintenance by the City. The City also has information in its GIS for its storm drainage system, and all storm drains are included on hard copies of system maps that are used by staff. The GIS information is not currently available in City maintenance vehicles other than in the service truck and CCTV van, but system maps are available in all field vehicles as well as in the office. GIS information is available on Lead Workers and Field Supervisors smart phones.

Currently the field crews use hard copy maps that are produced from the GIS. The hard copy maps are updated as changes are identified or upon acceptance of new facilities. Corrections that are identified by the field crews are given verbally and by form to City Engineering, who in turn transmits the corrected maps to the field crews when the corrections are completed. New facilities are incorporated into the maps during these updates.

The maps contain information about size, type, slope, condition, depth, age, and recent rehabilitation of the public sewer system. The City also has a database of the older maps in hard copy, Microfiche and digitized format of the wastewater collection system assets. The GIS is managed through an agreement with a GIS contractor who is responsible for all appropriate updates, including adding any new system infrastructure constructed or accepted for maintenance by the City. The City also has information in its GIS for its storm drainage system. City staff is evaluating the need for and costs and benefits of using tablet type equipment in all collection system vehicles to provide instant access to all maps of both the sanitary and storm water sewer systems.

IV-2. Operations and Preventive Maintenance

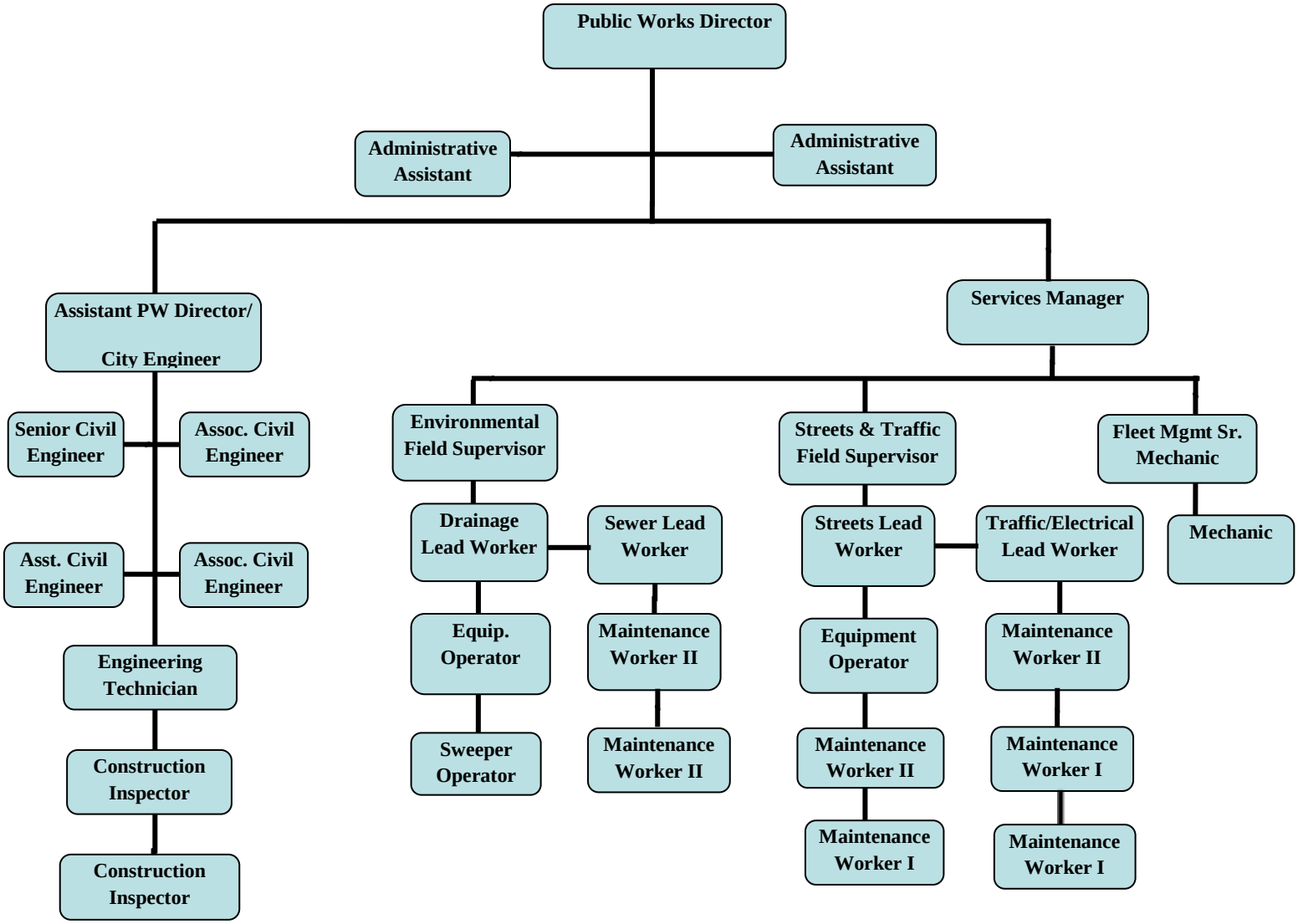
The elements of the City’s sewer system O&M program include:

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

The collection system organization chart for implementing the City's O&M program is shown below in **Figure VI - 1:**

The details of the program are explained following the chart.

Figure IV - 1: Belmont Public Works Department Organization Chart



IV-2.1. Gravity Sewers

The City of Belmont maintains its collection system with a Field Supervisor, a Lead Worker and a crew of 2, as well as the CCTV Operator who operates a video truck each working day. The crews typically work 4 shifts each week. The crew also provides 24/7 emergency standby operation and is supervised by the Field Supervisor and the Public Works Field Services Manager.

The City proactively cleans its entire gravity Sanitary Sewer System at least once every 3 to 4 years, and it preventively cleans sewers with a history of problems every three (3) and six (6) months.

The line cleaning crew evaluates cleaning results and places line segments on these higher frequency schedules based upon past cleaning results, history of SSO events, history of cleaning results, video inspections and professional judgment. Cleaning crews operate hydro jetting cleaning units and less frequently, hand rodding to accomplish cleaning of lines.

Summary statistics for the high frequency lines are shown in **Table IV - 1: High Frequency Lines .**

The historical line cleaning results are shown in

Frequency	Number of Segments	Linear Feet	Annual Cleaning, Linear Feet
1 month	2	135	1,620
3 months	29	5,117	20,468
6 months	95	17,336	34,672
9 months	4	573	573
12 months	6	1,735	1,735
TOTAL:	**136**	**24,896**	**59,068**

Table IV - 2: Historical Line Cleaning Results. All pipes are cleaned by City staff. City collection system staff maintains the sewer system and other Public Works infrastructure, but the Field Supervisor and Public Works Services Manager also manage some other public works assets in the City Public Works operations, such as storm drains.

Table IV - 1: High Frequency Lines

Frequency	Number of Segments	Linear Feet	Annual Cleaning, Linear Feet
1 month	2	135	1,620
3 months	29	5,117	20,468
6 months	95	17,336	34,672
9 months	4	573	573
12 months	6	1,735	1,735
TOTAL:	**136**	**24,896**	**59,068**

Table IV - 2: Historical Line Cleaning Results

Calendar Year	Line Cleaning Results, linear feet	Line Cleaning Results, miles	Percent of System
2017 as of 9-20-2017	272,229	51	63
2016	288,890	54.7	67
2015	250,093	47.3	58

The City is initiating the inspections of manholes as part of the cleaning operations. The City will be developing a full manhole inspection and assessment program including return frequency for repeat inspections in the next 18 months. The City has trained four

(4) employees in the PACP condition rating system for pipes developed by NASSCO and manholes are rated using MACP as part of the inspections performed Defects in manholes and lines, which could result in a stoppage or overflow (PACP rating 5) are immediately reported and scheduled for repair in no more than 90 days. The four employees are also trained in lateral condition assessment (LACP).

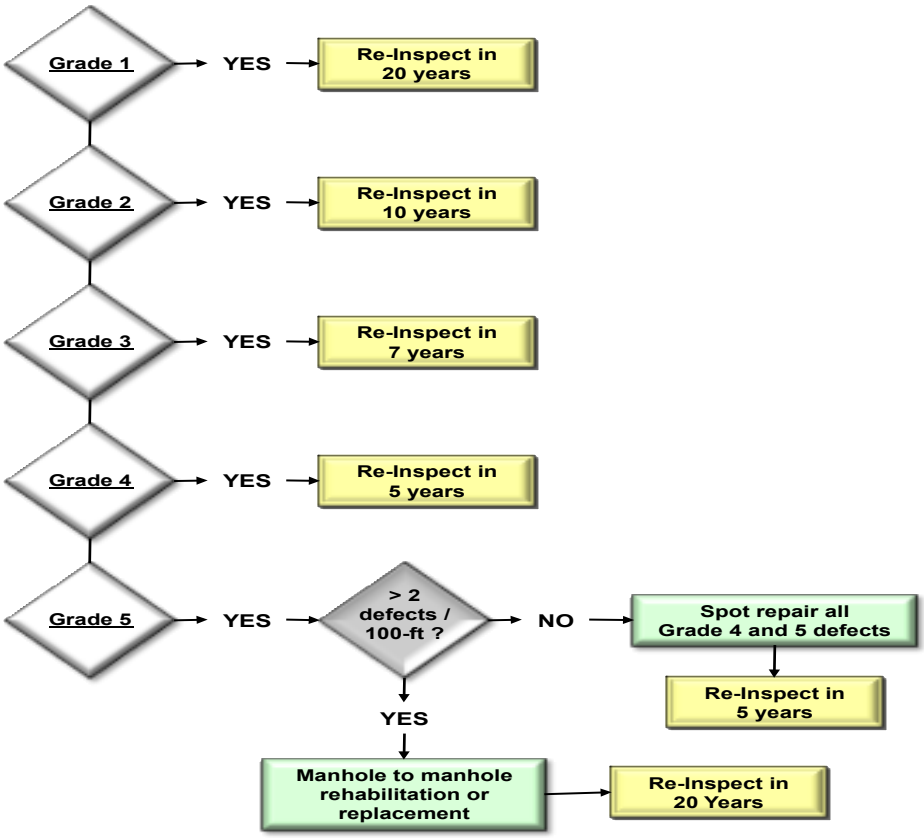
The City has videoed the entire gravity sanitary sewer system. Major point repairs, sewer main lining, and sewer main line repairs and replacements have been scheduled based on the results of video work and all major defects were corrected.

The City's entire system is routinely video inspected basin by basin (City is divided into 15 sewer basins). The current CCTV frequency is approximately 3 to 4 years for the condition assessment of all pipes in the collection system. The historical results of the City CCTV efforts are shown in **Table IV - 3: Historical Results of Closed Circuit Television.**

Table IV - 3: Historical Results of Closed Circuit Television

2017 As of 9-20-20017	38,518	9
2016	61,818	14
2015	48,021	11
2014	96,911	23

Figure IV - 2: CCTV Return Frequency based upon PACP Ratings



The wastewater collection system staff maintains a list of known structural deficiencies determined from the CCTV results conducted during pipeline assessments. This list is maintained in priority order by structural rating.

Gravity sewer maintenance is currently scheduled using work orders in Group projects by sewer basins generated by the City's Computerized Maintenance Management System (CMMS). The City currently uses a Hansen CMMS. Completed gravity sewer maintenance is recorded using work orders.

The City responds to customer complaints about sewer service. Complaints are generally related to sewer stoppages, overflows, or odors. Response is performed by the collection system staff during work hours and the standby worker during after-hours. Response includes assessing the complaint and resolving the problem. The majority of the complaints are related to stoppages. During work hours, a cleaning crew is directed to remove stoppages. Most of the stoppages occur in laterals. Although crews respond to all stoppage complaints, they are not responsible for clearing stoppages in private laterals. See Section IV-2.4 for the responsibilities for private sewer laterals.

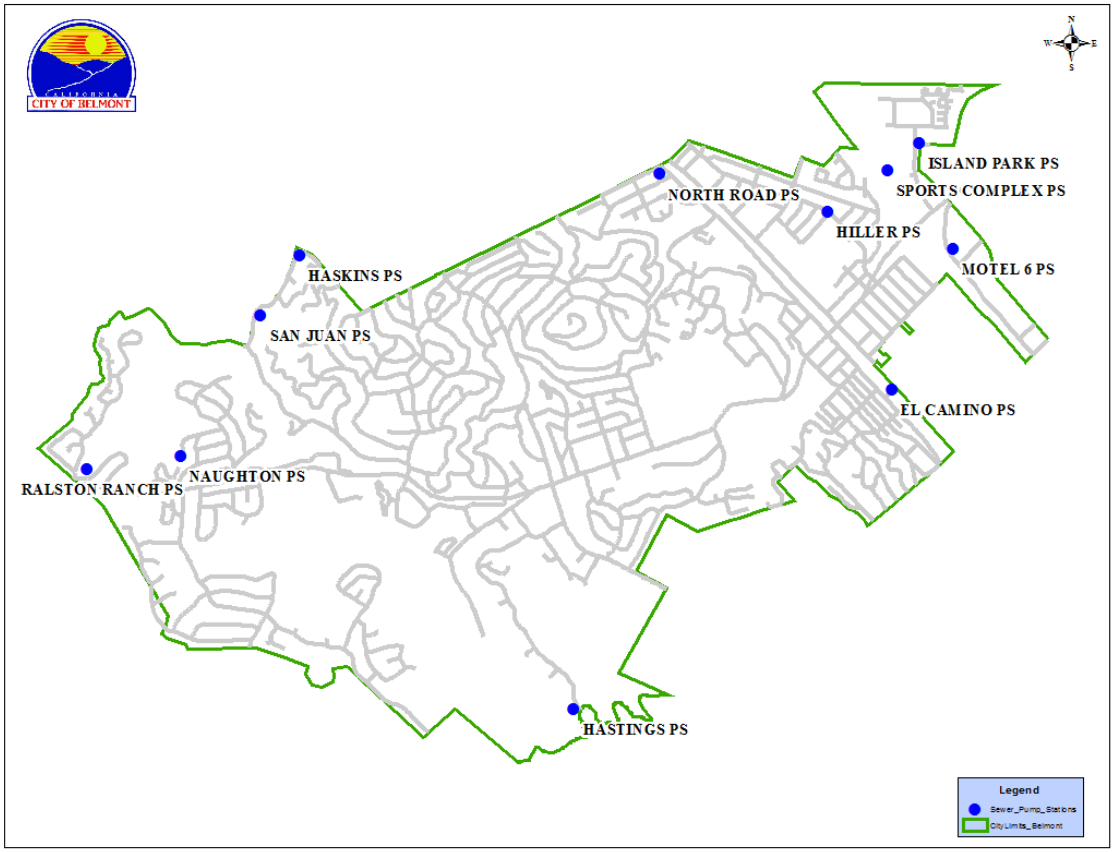
IV-2.2. Pump Stations

The City of Belmont has 11 sewage pump stations as shown below in **Figure IV - 3: Pump Station Location Map** (not including SVCW maintained sewer pump station that takes all Belmont flows to the treatment plant) with pump horsepower ratings ranging from 0.75hp to 139hp. All stations have redundant pumps, 6 stations have on-site backup generators and 1 station has a portable backup generator. The other pump stations have quick connect systems to accommodate portable generators stored at the corporation yard. Personnel from every division of maintenance have also been cross-trained to deliver and connect emergency power to the pump stations. All 11 pump stations are connected to a Mission Communications SCADA System. Maintenance workers carry pagers that receive pump station messages sent through the SCADA system. All pump stations are inspected on a weekly basis to insure uninterrupted service. Such inspections include testing pumps, checking batteries and battery chargers, exercising valves and standby generators, cleaning wet well, clearing bar screens, lubricating locks and hardware, visual evaluation of the pump station elements.

The City has two (2) portable generators, one Kohler 80 kW and one 33 kW, that are tested on a monthly basis to ensure their operability in an emergency situation.

The City will conduct annual comprehensive pump station condition assessments utilizing the document shown in **Appendix IV-E Pump Station Condition Assessment Checklist**.

Figure IV - 3: Pump Station Location Map



Source: City of Belmont Staff

Each of the 11 pump stations discharge to force mains and they are identified and described in the **Table IV - 4: Pump Station Locations and Descriptions** shown below.

IV-2.3. Force Mains

Force mains were inspected thoroughly and a full report on these inspection was prepared in October 2014. This inspection project included pressure monitoring, a hydraulic evaluation, soil corrosion surveys, hydrogen sulfide monitoring, and a Smart Ball leak detection survey. Further investigation was recommended for certain locations, but no immediate, serious defects or concerns were found. City will start Cathodic Protection project for force mains in late Fall of 2017.

Table IV - 4: Pump Station Locations and Descriptions

Pump Station Name	Location	No. Pumps	Pump (gpm)	Pump Manufacturer	Pump (hp)	Standby Generation-(kw)
Ralston Ranch	85 Ralston Ranch Rd.	2	250	Paco	10	None
Naughton	E. Naughton Ave.	2 +1 spare	230	Flygt	5	None
Hastings	2600 block, Hastings Ave.	2	550	Homa	29	100
Hiller	600 block, Hiller Ave.	2	850	Flygt	20	None
Island Park	550 Island Parkway	2+ 1 spare	300	Homa	10.4	33
Sports Complex	301 Island Parkway	2	55	Flygt	2	None
San Juan	3118 E. Laurel Creek Rd.	2 + 1 spare	1000	ABS Sulzer	139.4	400
North Road	North Rd. & El Camino	2 + 1 spare	850	Homa	34.5	100
Haskins	Haskins Dr. & E. Laurel Creek Rd.	2	600	Homa	20	50
Motel 6	1101 Shoreway Rd.	2	230	Flygt	5	None
El Camino Real	SE corner of El Camino & Harbor	2 + 1 spare	105	Myers	0.5	100

Table IV - 5: Force Main Locations and Descriptions

Name of Pump Station Associated with Force Main	Force Main Asset Information			
	Year Built	**Length (linear feet)**	**Size (inches)**	**Material Type**
Ralston Ranch	1996	650	6	PVC
Naughton	1994	450	6	PVC
Hastings	1970	1200	6	ACP
Hiller	1953	1,4100	10	ACP
	1998	530	10	HDPE
Island Park #1	1989	3,484	6	PVC/CIP
Sports Complex	1988	150	2	PVC
San Juan	1977	5,000	12	DIP
North Road	2002	704	8	DIP
	1960	3,040	8	ACP
Haskins	1982	1,600	6	DIP/ACP
Motel 6	1970	355	4	PVC
El Camino Real at Harbor Blvd	1985	120	4	CIP
Total:		18,693		

IV-2.4. Sewer Laterals (Private)

Belmont Municipal Code Section 21-210 and Sewer Lateral Ordinance 1070 establish the owner's responsibility for the sewer laterals, which are privately owned up to and including the connection to the City's sewer system. The City has no responsibility for the installation, maintenance, operation, repair or replacement of private sewer laterals connected to the City mains.

Ordinance No. 1070, adopted April 9, 2013 requires a seller of property to provide prospective buyers with a Notice that homeowners are responsible for the repair and maintenance of private sewer laterals. Additionally, a sewer lateral certificate is required if a property owner is making improvements the property in excess of $200,000, or if a change in water service such as adding a meter or changing meter size is made. The of Public Works Director is also empowered to direct the testing of a lateral if there is a reasonable belief the lateral may not be in good condition.

Department of Public Works
650-595-7425 (Regular Business Hours)
650-595-7400 (Emergency After Hours)

MAINTENANCE POLICY FOR HOUSE SEWER LATERAL SERVICE

Dear Resident or Property Owner:

Your plumbing fixtures discharge from your house or business to the City's sewer main through a pipe known as a house connection sewer and sewer lateral. This pipe belongs to the property owner who is responsible for its repair and maintenance.

As a courtesy to property owners, the Belmont Department of Public Works will attempt to clear blockages in the sewer lateral section of the pipe (the section of pipe within the public right-of-way running from your property line to the sewer main) twice within a twelve-month period, if there is an accessible property line cleanout. (A City Standard Detail for a property line cleanout is on the back of this notice). Call us at 595-7425 or after hours at 595-7400 (police dispatch) and our emergency sewer crew will respond.

If you are experiencing repeated sewer backups in your house connection or sewer lateral, your pipe may be blocked with tree roots or may be broken. If you continue to experience these problems, we recommend you have a licensed plumber investigate your house connection and sewer lateral to determine the cause and propose a remedy. We recommend you repair these pipes if they have reached the end of their life, due to a bad connection, break, or root blockages occurring more than twice a year. If you have questions about how to hire a plumber, please contact the California Contractor's State License Board at 1/800-321-2752 or visit their web site at www.cslb.ca.gov.

Your plumber should check with Public Works at 595-7425 to determine if the proposed repair requires a building or encroachment permit. Ask to see a copy of the permit before your plumber starts work. Permitting the work ensures that the City will check records for your property and will send a City Inspector to verify that the repair is completed in accordance with City standards.

Property owners are ultimately responsible for clearing and maintaining their sewer lateral and house connections and for damages that result from blockages. This policy derives from Belmont's City Code, Section 21 (Sewers and Sewage Disposal). To review our municipal code, please visit our website at www.belmont.gov; for additional comments or questions, you may contact us directly at 595-7425.

IV-2.5. Root Foaming

The City utilizes chemical root control to address root control issues. If roots are determined to be an issue during the annual sewer CCTV project, cleaning, or response to complaints, the City's maintenance staff performs root cutting and areas with a history of significant roots are placed into the root foaming program. The City currently spends about $80,000 annually on root foaming, treating these lines on a cycle of about once

every three years. This program involves approximately 60,000 linear feet of the City's sewer system.

IV-2.6. Rehabilitation and Replacement Program

After the sewer lines are foamed, cleaned and televised, the video logs are reviewed by the City's engineering staff that maintains an in-house 5-year rehabilitation plan for sewer system repair, replacement and rehabilitation. The engineering staff evaluates the conditions of the sewer lines based on the video inspection reports and previous maintenance and rehabilitation history and determines the priority and type of rehabilitation of the defects using a proactive approach. In 2007 the City in conjunction with a consultant prepared a Sanitary Sewer Rehabilitation Master Plan which prioritizes projects in the sewer infrastructure inventory for the short term (5 years) and long term (25 years). The rehabilitation plan includes pipelining, pipe bursting, and point repair, open trench replacement, pump station rehabilitation and force main evaluation projects. These projects are in the City's Capital Improvement Program and listed in **Appendix IV-B**. The rehabilitation plan is updated annually based on the sewer infrastructure condition and budget availability.

In 2010 the City in conjunction with a consultant prepared a Sanitary Sewer System Capacity Analysis that summarized projects that would improve system capacity and identify sources of I&I. To date 3 out of 5 projects summarized in this Analysis have been completed. The Flow Monitoring Project is starting in the fall of 2015.

IV-2.7. Training

The City uses a combination of in-house classes and field exercises; on the job training; conferences, seminars, outside programs other training opportunities that are provided in the San Francisco Bay area. The City highly recommends its wastewater collection system employees be certified in Collection System Maintenance by the California Water Environment Association (CWEA) and provides training opportunities to enable all sewer maintenance staff to become and remain certified. The City assists with certification by paying for the preparation course, certification exams, and required continuing education. Training programs that the City uses are listed below:

- CWEA
- APWA
- NASSCO PACP
- Vendor sponsored training
- In-house training by supervisor and lead workers

- Cross training exercises related to emergency response during power outages and overflows
- Neighboring cities training exercises

The City Public Works Operations conducts departmental training for its employees on both the SSMP and OERP annually including volume estimation and SSO start time determinations. This training includes field exercises in the estimation of SSO volume and SSO containment.

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

The City's standard service and construction contract language requires all contractors working in the wastewater collection system to submit the Contractors OERP for City review prior to starting work on or near the wastewater collection system. The City is considering changes to its standard specifications to assure these requirements are followed and fully in place prior to commencing construction.

IV-2.8. Equipment and Replacement Parts

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

IV-3. Element IV Appendices

Appendix IV-A: Standard Operating Procedures

The City has completed developing Standard Operating Procedures and the hyperlink to the SOPs to this SSMP. See hyperlink below.

N:\Department Folders\Public Works\PWD Files\SOPs and OERP\Belmont OERP Final 11-23-15.pdf

Table IV - 6: Capital Improvement Program Budget (in $1000's)

Project	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22
Sewer Rehabilitation - Annual	715,000	715,000	715,000	715,000	715,000
Pump Station Rehabilitation	1,430,000	1,930,000	1,105,000	800,000	800,000
Basin Rehabilitation Projects	3,300,000	3,300,000	3,300,000	3,000,000	3,000,000
Force Main Evaluation & Rehabilitation	290,000	340,000	2,100,000	800,000	2100000
Sewer System Flow Monitoring	90,000				
Ralston Avenue Sewer Main Improvements	2,000,000	40,000			
Pump Station Electrical and Mechanical System Repair and Replacement	160,000	160,000	160,000	200,000	200,000
San Juan Sewer Main Capacity Improvements		200,000	190,000	900,000	
Total	7,985,000	6,685,000	7,570,000	6,415,000	6,815,000

Appendix IV-C: Major Sewer System Equipment and Replacement Parts Inventory

Contingency Equipment and Replacement Inventories

Revised June 2015

The City of Belmont sewer department contains the following equipment:

- 12-yard combination sewer cleaner truck with spill response kit
- 9-yard combination sewer cleaner truck with spill response kit
- Service truck equipped for sewer call/spill response
- CCTV camera van – 4" to 36" inch pipe diameter capability
- Backhoe
- Excavator
- Skid steer
- Truck with 6,000 pound crane
- Pipe locator
- One lateral line camera
- Portable sewer jetting machine
- 500 feet of hand rods
- Various size cutting augers for hand rods
- Various size and style cleaning/cutting nozzles for combination sewer cleaner trucks
- Various size pipe plugs 6"- 30"
- Portable bypass pumps ranging from 2" to 6" including one trailer mounted bypass pump.
- Bypass pump suction and discharge hose of various diameter and length
- Portable Emergency generators, one Kohler 80 kw and one Kohler 33 kw
- Emergency response trailer equipped with spill response kits, pumps, maps, pipe plugs, lights
- Confined space equipment
- Shoring equipment
- Spill containment kits
- Water sampling test kit
- Supply of pipe, fittings and bands
- Pipe patch kits (cure in place)
- Manholes lids and rings

- Various small hand and power tools
- Gantry crane for pumps
- Spare pumps for 5 sewer pump stations and pump repair kits for all sewer stations
- Spare soft starts, fuses, circuit breakers, relays, check valves, Milltronics controller, transducer, floats and power supplies for pump stations
- 6-yard dump truck
- 9-yard dump truck
- Smoke testing equipment

All sewer maintenance equipment and spare replacement parts are stored at the City's Municipal Corporation Yard. Equipment and parts are periodically replaced based on condition and remaining life. The City maintains an inventory of spare/replacement parts to minimize system downtime in the event of an unplanned failure. Pump stations and the City's trunk main are considered as "critical" parts of the system.

Appendix IV-E: Pump Station Condition Assessment Checklist

Inspection Information	
Inspection date	
Inspection participants	
Facility name	
Facility address	
Comments	

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

Security Features	
Fence and gate	
External lighting	
Visibility from street	

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

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

External Appearance	
Fence	

Landscaping	
Building	
Control panels	
Other external features	
Comments	

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

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

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

Motors	
Lubrication	
Insulation	
Operating current	
Vibration and alignment	
Other	
Comments	

Pumps	
Lubrication	

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

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

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

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

Element V: Design and Performance Provisions

SWRCB Waste Discharge Requirement:

a) Design and construction standards and specifications for the installation of new sanitary sewer systems, lift 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 Department of Public Works of the City.

V-1.1. General

The City has established standards for both new construction and renewal and replacement work associated with the collection system. These standards are commonly referred to in the industry as the "Green Book" and are referenced on the City's website at http://www.belmont.gov/how-do-i-/apply-/permits

The standards apply to both new construction and rehabilitation and repair of all main lines sewers, trunk sewers, manholes, pump stations and other collection system appurtenances. The Green Book standards are revised every three years and the most recent edition currently in effect is the 2015 edition.

V-1.2. Pump Stations

The City requires that all new or rehabilitated lift stations be designed by a registered engineer and in accordance with the above referenced Green Book standards.

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, the Department of Public Works and the appropriate Municipal code requirements therein. Designs must be prepared by a registered engineer or architect for approval by the Building Division and the Public

Works Department. Private sewer laterals must conform to the requirements of the California Plumbing Code.

V-2. Inspection and Testing Criteria

The City's Wastewater Collection System Inspection and Testing Criteria are based on the Green Book standards.

V-2.1. New and Rehabilitated Gravity Sewers, Manholes, and Pump Stations

All new gravity sewers will be periodically inspected during construction to ensure that the sewer is constructed using the specified materials and methods, and in accordance with Green Book standards, Parts 1, 2, 3 and 5 in particular. Inspection during construction, leakage, deflection, CCTV inspection, functional and performance testing are all covered.

Element VI: Overflow Emergency Response Plan

SWRCB Waste Discharge Requirement:

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

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

VI-1. Purpose

The purpose of the City of Belmont'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.

VI-2. Policy

The City's employees are required to report all wastewater overflows resulting from the City-owned/maintained sanitary sewer system 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)* and the California State Water Resources Control Board (*SWRCB)***.**

VI-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.

FROG – Fats, Roots, 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. Tree root invasion (R) presents an additional problem. If a mat of root hair forms in the sewer line it slows the flow of wastewater and exacerbates the rate of accumulation of FOG materials.

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.

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

PRIVATE LATERAL SEWAGE DISCHARGES (PLSD) – Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

SANITARY SEWER BACKUP (BACKUP) – When blockages or flow conditions cause wastewater to backup into buildings and on private property.

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.

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

SSO Categories:

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

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

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

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

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

SANITARY SEWER SYSTEM: Any publicly-owned system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

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

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.

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. SSO Detection and Notification

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

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

The City operates wastewater pump stations. In the event of any pump failure, the high level sensor activates the SCADA alarm system and the City is contacted. To prevent overflow, wastewater from the wet well can either be pumped into a vacuum truck for disposal to a nearby sanitary sewer manhole, or bypassed around the station into the sanitary sewer system. Each pump station will have an emergency response plan that can be followed in the event of a pump failure.

VI-4.1. Public Observation

Public observation is the most common way that the City is notified of blockages and spills. Contact numbers and information for reporting sewer spills and backups are in the phone book and on the City's website: http://belmont.gov. Customers can report sewer problems by telephone at (650) 595-7425 during business hours or (650) 595-7400 (Police Dispatch) after hours.

VI-4.2. Normal Work Hours

When a report of a sewer spill or backup is made during normal work hours, the office staff takes the call and creates a Hansen Service Request and notifies an available Field Crew. If office staff is not available to take the call, a voice message instructs the caller to call the sewer truck directly at (650) 222-4925.

VI-4.3. After Hours

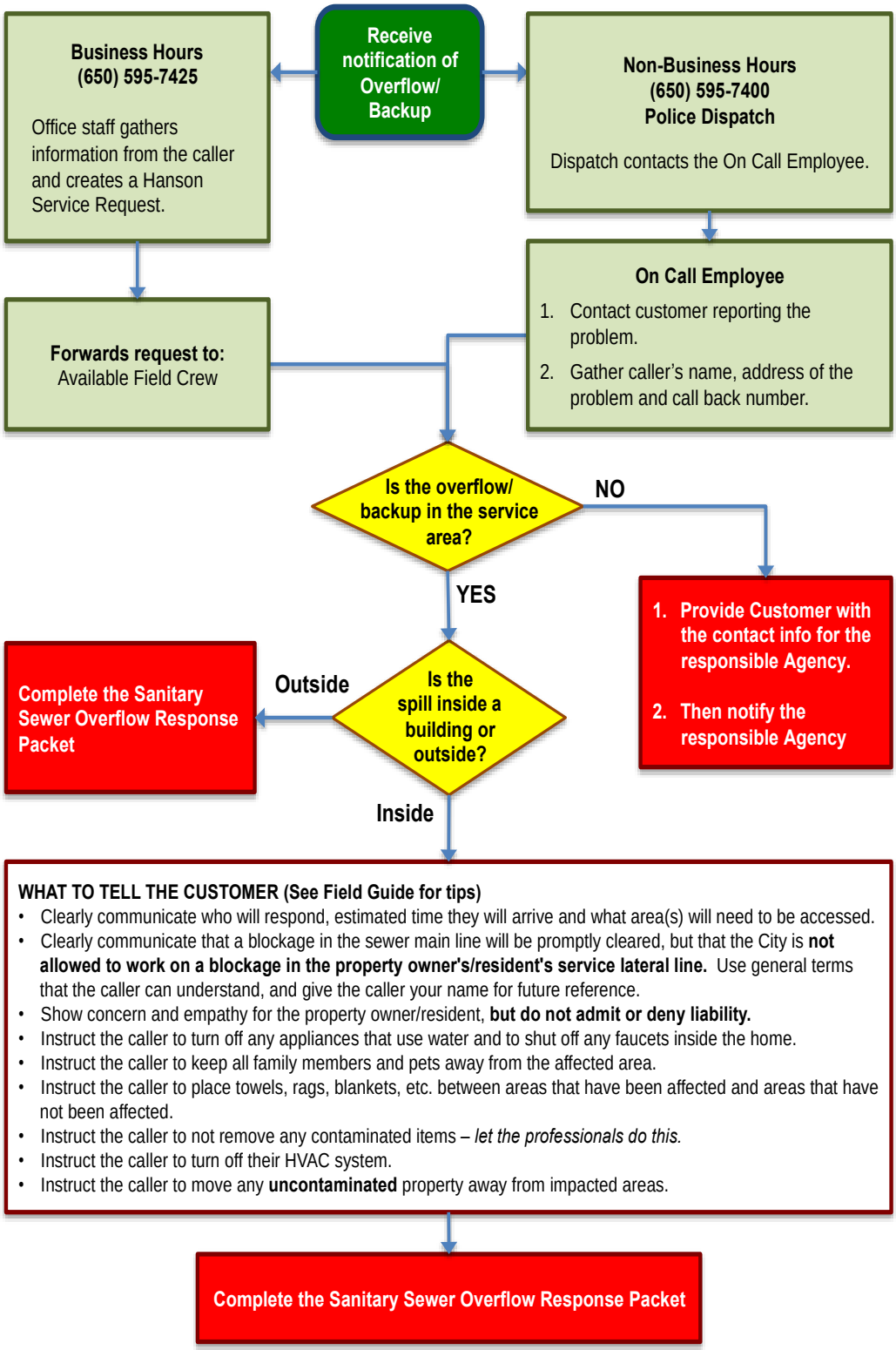
After hours callers will receive a voice message instructing them to call Police Dispatch at (650) 595-7400. Police Dispatch will notify the On Call Employee.

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

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

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

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



VI-4.4. City Staff Observation

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

VI-4.5. 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 storm drains
3. Protect the public
4. Provide Information to the City Field Crew such as start time, appearance point, suspected cause, weather conditions, etc.
5. Direct ALL media and public relations requests to the Public Works Director who will provide the media with all relevant information.

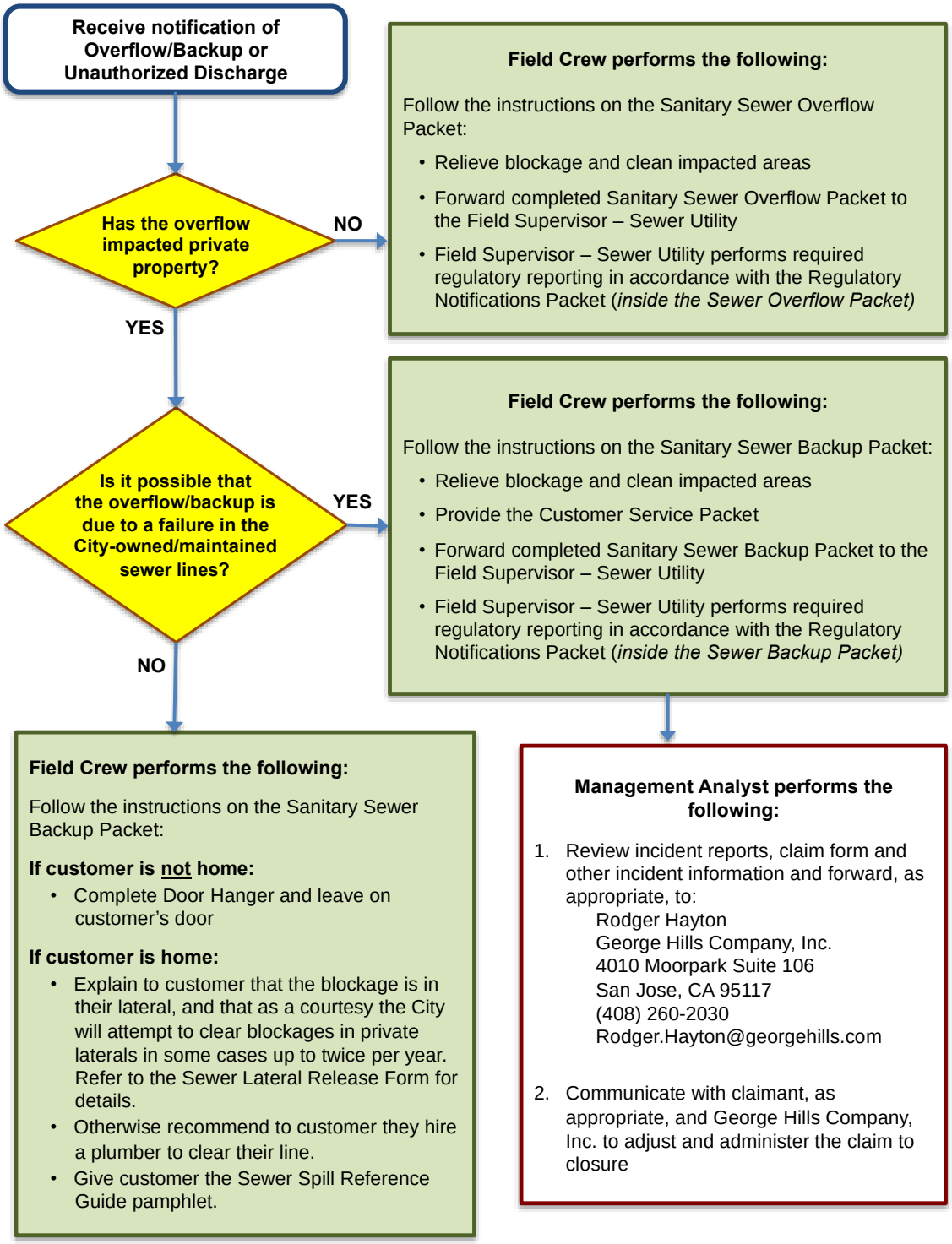
VI-4.6. SSO Response Procedures

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

VI-4.7. Sewer Overflow/Backup Response Summary

The City will respond to SSOs as soon as feasible following notification of an overflow/backup or unauthorized discharge. The following (**Figure VI - 2**) is an overview of the response activities.

Figure VI - 2: Overview of SSO response activities



VI-4.8. 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 Field Supervisor – Sewer Utility 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).

VI-4.9. 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.

VI-4.10. 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 sewer system spill or backup.
- Determine if the overflow or blockage is from a City-owned/maintained or private sewer.
- Identify and assess the affected area and extent of spill.
- Contact caller if time permits.
- If the spill is large or in a sensitive area, document conditions upon arrival with photographs. Decide whether to proceed with clearing the blockage to restore the flow or to initiate containment measures. The guidance for this decision is:

- Small spills (i.e., spills that are easily contained) – proceed with clearing the blockage.
- Moderate or large spill where containment is anticipated to be simple – proceed with the containment measures.
- Moderate or large spills where containment is anticipated to be difficult – proceed with clearing the blockage; however, whenever deemed necessary, call for additional assistance and implement containment measures.

- Take steps to contain the SSO. For detailed procedures refer to **Appendix B: Sanitary Sewer Backup Procedures**, and **Appendix C: Sanitary Sewer Overflow Packet**.

VI-4.11. Initiate Spill Containment Measures

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

- Determine the immediate destination of the overflowing sewage.
- Plug storm drains using air plugs, sandbags, and/or plastic mats to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Pump around the blockage/pipe failure.

For detailed procedures refer to **Appendix C: Sanitary Sewer Overflow Packet**.

VI-4.12. 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 Public Works Maintenance Supervisor. For detailed procedures refer to **Appendix C: Sanitary Sewer Overflow Packet**.

VI-4.13. Equipment

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

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

Standard operating procedures for equipment that may be necessary in the event of a sanitary sewer overflow or backup can be found in the Corporation Yard sewer vehicles.

VI-5. Recovery and Cleanup

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

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

VI-5.1. Estimate the Volume of Spilled Sewage

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

VI-5.2. Recovery of Spilled Sewage

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

VI-5.3. 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 the Field Crew, 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 or dwelling, such as in front, side and backyards, etc. In all other cases, affected property owners can call a water damage restoration contractor to complete the cleanup and restoration. If the overflow into property is the definite cause of City system failure, the property owner can call out a water damage restoration contractor to complete the cleanup and restoration. In both cases, property owners may obtain a City claim form from the Management Analyst.

Hard Surface Areas

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

Landscaped and Unimproved Natural Vegetation

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

Natural Waterways

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

Wet Weather Modifications

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

VI-5.4. Public Notification

In the event a sanitary sewer spill creates a danger to public health, staff will post warning signs in the area and close off the immediate area to the public and all non-emergency vehicular traffic. Staff shall provide crowd and traffic control and may request Police assistance with this task.

Additionally, the supervisor on site will use his/her best judgment regarding supplemental sign placement in order to protect the public and local environment. Staff shall use City storm drain maps to determine appropriate downstream locations to begin cleanup activities.

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

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

When contact with the local media is deemed necessary, the Public Works Director or their designee will provide the media with all relevant information.

VI-6. Water Quality

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

VI-6.1. 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.

VI-6.2. Water Quality Sampling and Testing

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

- The first responders will collect samples as soon as possible after the discovery and mitigation of the SSO event.
- The water quality samples will be collected from upstream of the spill, from the spill area, and downstream of the spill in flowing water (e.g. creeks). The water quality samples will be collected near the point of entry of the spilled sewage.
- The samples shall then be brought to the Silicon Valley Clean Water for analysis.

VI-6.3. Water Quality Monitoring Plan

The City Water Quality Monitoring Plan will be implemented immediately upon discovery of any Category 1 SSO of 50,000 gallons or more in order to assess impacts from SSOs to surface waters. The SSO Water Quality Monitoring Program will:

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

VI-6.4. SSO Technical Report

The City will submit an SSO Technical Report to the CIWQS Online SSO Database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters. The Public Works Services Manager or the Assistant Public Works Director 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.

VI-7. Sewer Backup Into/Onto Private Property Claims Handling Procedure

It is the procedure 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:

- Field Crew will offer a City claim form 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 Field Crew to gather information regarding the incident and notify the Field Supervisor – Sewer Utility or his/her designee.
- It is the responsibility of the Management Analyst or his/her designee to review all claims and to oversee the adjustment and administration of the claim to closure.

VI-8. Notification, Reporting, Monitoring and Recordkeeping Requirements

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

In accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS GWDRs), the City of Belmont 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 Table VI-1** below.

VI-8.1. Regulator Required Notifications

Table VI - 1: Regulator Required Notifications

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION	Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, the City will notify the California	Call Cal OES at: (800) 852-7550

	Office of Emergency Services (CalOES) and obtain a notification control number.	
REPORTING	Category 1 SSO: The City will submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. Category 2 SSO: The City will submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. Category 3 SSO: The City will submit certified report within 30 calendar days of the end of month in which SSO the occurred. SSO Technical Report: The City will submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. "No Spill" Certification: The City will certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred. Collection System Questionnaire: The City will update and certify every 12	Enter data into the CIWQS Online SSO Database[1] (http://ciwqs.waterboards.ca.gov/)certified by the Legally Responsible Official(s)[2]. All information required by CIWQS will be captured in the Sanitary Sewer Overflow Report. Certified SSO reports may be updated by amending the report or adding an attachment to the SSO report within 120 calendar days after the SSO end date. After 120 days, the State SSO Program Manager must be contacted to request to amend an SSO report along with a justification for why the additional information was not available prior to the end of the 120 days.

[1] In the event that the CIWQS online SSO database is not available, the Field Supervisor – Sewer Utility 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.

[2] 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.

	months	
WATER QUALITY MONITORING	The City will conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results will be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD-KEEPING	The City will maintain the following records: SSO event records. Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. Collection system telemetry records if relied upon to document and/or estimate SSO Volume.	Self-maintained records shall be available during inspections or upon request.

For reporting purposes, if one SSO event of whatever category results in multiple appearance points 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.

VI-8.2. 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 sewer service requests are entered into the Hansen Computerized Maintenance Management System (CMMS). If the service request requires work on the sewer or other City infrastructure, a work order is created. Once work is complete the Work Order and the Service Request are closed. If the work does require City action, the Service Request is closed in Hansen.

All sewer service requests are logged on the Sewer SSO Report by the responding field crew. If the service request turns out to not be sewer related, this information is captured on this form and the true nature of the service request identified.

The Field Supervisor – Sewer Utility is responsible for maintaining completed Sewer SSO Reports for five years.

VI-9. Post SSO Event Debriefing

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

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

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

VI-10. Failure Analysis Investigation

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

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

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

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

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

VI-11. SSO Response Training

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

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

VI-11.1. 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 Program 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.

VI-11.2. SSO Response Drills

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

VI-11.3. SSO Training Record Keeping

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

VI-11.4. Contractors Working On City Sewer Facilities

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

discussed at project pre-construction meetings, regular project meetings and after any contractor involved incidents.

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

VI-12. 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-13. References

- Sanitary Sewer Overflow and Backup Response Field Guide, 2015, DKF Solutions Group, LLC
  - Appendix A: Regulatory Notifications Packet
  - Appendix B: Sanitary Sewer Backup Packet
  - Appendix C: Sanitary Sewer Overflow Packet
  - Appendix D: Field Sampling Kit
  - Appendix E: Contractor Orientation

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

SWRCB Waste Discharge Requirement:

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

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

VII-1. Nature and Extent of FOG Problem

It is the City's intent to identify controllable sources of SSO through the implementation of a FOG Program. The overall aim is to reduce the occurrence of FOG-related mainline SSOs in the service area at the low level of FOG related SSOs currently.

The FOG Program includes a combination of public outreach efforts, preventive cleaning and inspection of food service establishments (FSE).

The City proactively cleans its entire Sanitary Sewer System at least once every 3 or 4 years and video inspects the system every 3- 4 years. Data collected though cleaning and video inspection is used by City staff to identify areas or line segments of the sanitary sewer collection system prone to FOG-related stoppages, establish a prioritized or accelerated preventive cleaning, inspection and maintenance schedules for each identified area, to enforce and improve its FOG Program, and make necessary updates to its SSMP.

The City's FOG Source Control Program and its preventive maintenance program are currently focused on problematic grease dischargers and the FOG high frequency areas, and are specifically to deal with FOG related concerns identified by the cleaning and CCTV crews during normal cleaning and inspection.

Table VII - 1: Historical FOG-Related SSOs below lists the total number of FOG-related mainline SSOs in 2009 to 2013.

Table VII - 1: Historical FOG-Related SSOs

Calendar Year	Number
2017	0
2016	0
2015	0
2014	0
2013	0

VII-2. FOG Source Control Program & Inspections

The elements of the City's FOG Source Control Program include:

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

The legal authority to implement, monitor and enforce the elements of the FOG Program in the service area is governed in Title 21.159 of the Municipal Code and in the California Plumbing Code (Section 7.61 et seq.). These code sections provide the legal authority to prohibit FOG discharges to the sanitary sewer collection system.

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

The City progressive enforcement actions for various field violation scenarios include verbal and written notices of violations, cleanup requirements, and administrative and criminal penalties. Each level of corrective action includes a schedule to achieve timely compliance. Enforcement actions are coordinated between Public Works staff and the City's Code Enforcement Officer to ensure timely resolution.

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

VII-3. Response to GWDR Requirements

Requirement (a):

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

Response:

The City is currently managing its FOG with a focused preventive maintenance program (sewer cleaning). City crews provide information on proper FOG disposal to residents that have experienced a FOG-related blockage

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:

There are several disposal sites that are used by the commercial grease haulers working within the City's service area. Many disposal facilities own grease hauler trucks. Smaller grease haulers have contracts for disposal at these larger haul/disposal facilities.

Requirement (c):

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

Response:

The Belmont Municipal Code Section 21-159 and 7.61 et seq. provides the legal basis and authority (see Element 3) for the City's FOG Control Program.

Requirement (d):

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

Response:

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

Requirement (e):

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

Response:

The City has the authority to inspect grease producing facilities under the Belmont Municipal Code section 21-122.

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's FOG Source Control Program and its preventive maintenance program are currently focused on problematic grease dischargers and the FOG high frequency areas, and are specifically to deal with FOG related concerns identified by the cleaning and CCTV crews during normal cleaning and inspection.

Element VIII: System Evaluation and Capacity Assurance Plan

SWRCB Waste Discharge Requirement:

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

a. **Evaluation**: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;
b. **Design Criteria:** Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and
c. **Capacity Enhancement Measures:** The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.
d. **Schedule:** The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the Sewer System Management Plan (SSMP) review and update requirements as described in Section D. 14.

VIII-1. System Evaluation - Collection System Master Plan

The City completed a comprehensive Sanitary Sewer Rehabilitation Master Plan in 2007. This Rehabilitation Master Plan included flow monitoring to be used for the Capacity Study. However, due to budget constraints, the Sewer Capacity Study was postponed till the next Fiscal Year.

In January 2008 the City in conjunction with consultants started a Sewer Capacity Study project. The project has been completed and presented to the City Council as a discussion item in April 2010.

The project included a capacity evaluation and identification of capacity-related improvement projects. The capacity assessment is based on hydraulic modeling of the City's collection system under current and future design flows. The hydraulic model was developed using H2O Map Sewer modeling software to evaluate existing and future system capacity. H2O Map Sewer is a fully dynamic hydraulic model that allows realistic representation of changes in flow over time as well as surcharging and backwater effects due to capacity limitations. Nearly all of the City's sewer pipes, ranging in size from 6 to 27 inches in diameter, were included in the model. Flows were initially estimated based on a combination of parcel land uses and land use flow factors and then adjusted based on comparisons to flow monitoring and water use data. Flow monitoring data were available at twenty-two temporary monitoring sites within the City. The City is largely built out. Population within the City is not expected to grow significantly. The capital improvement projects listed in the Sewer System Capacity Analysis were included in the sewer CIP Program. 3 out of 5 projects have been completed today. One project is ongoing and is expected to end in December 2018. The last project outlined in the Capacity Analysis is scheduled to be completed within 5 years. Currently the City is in the process of updating the existing hydraulic model based on most recent flow data. Any sewer lines that are hydraulically deficient will be included in the Capital Improvement Program for upsizing.

The City expects to update the Sewer Master Plan prior to the next SSMP recertification process. Actual schedules and timelines will be developed and detailed in future SSMP audits. A copy of both the Master Plan and Capacity Analysis can be found at http://www.belmont.gov/city-hall/public-works/engineering/infrastructure/sewer-system

VIII-2. Design Criteria

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

VIII-3. Capacity Enhancement Measures - Capital Improvement Program

The City prepares an annual list of capital improvement projects that includes projects to address recently identified wastewater collection system issues, including any capacity deficiencies. Engineering Staff prioritize and select the projects to be included on the annual list.

VIII-4. Schedule

Up to date 3 out of 5 projects are completed. The flow monitoring project is scheduled to start in fall of 2015. The last capacity related project is scheduled to be done in FY 2017.

Element IX: Monitoring, Measurement, and Program Modifications

SWRCB Waste Discharge Requirement:

The Enrollee shall:

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

IX-1. Performance Measures

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

- Total number of SSOs;
- Number of SSOs for each cause (roots, grease debris, pipe failure, capacity, lift station failures, and other);
- Portion of sewage recovered compared to total volume spilled: and
- Volume of spilled sewage discharged to Waters of the State.

IX-2. Baseline Performance

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

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

The baseline performance and SSO trends for gravity mains, pump stations, and force mains are shown below.

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

FY	Gravity Sewer SSOs	Pump station SSOs	Force Main SSOs
2010	3	0	0
2011	2	0	0
2012	3	0	0
2013	6	0	0
2014	3	0	0
2015	5	1	0
2016	2	0	0
2017	5	0	0
Total	24	1	0

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

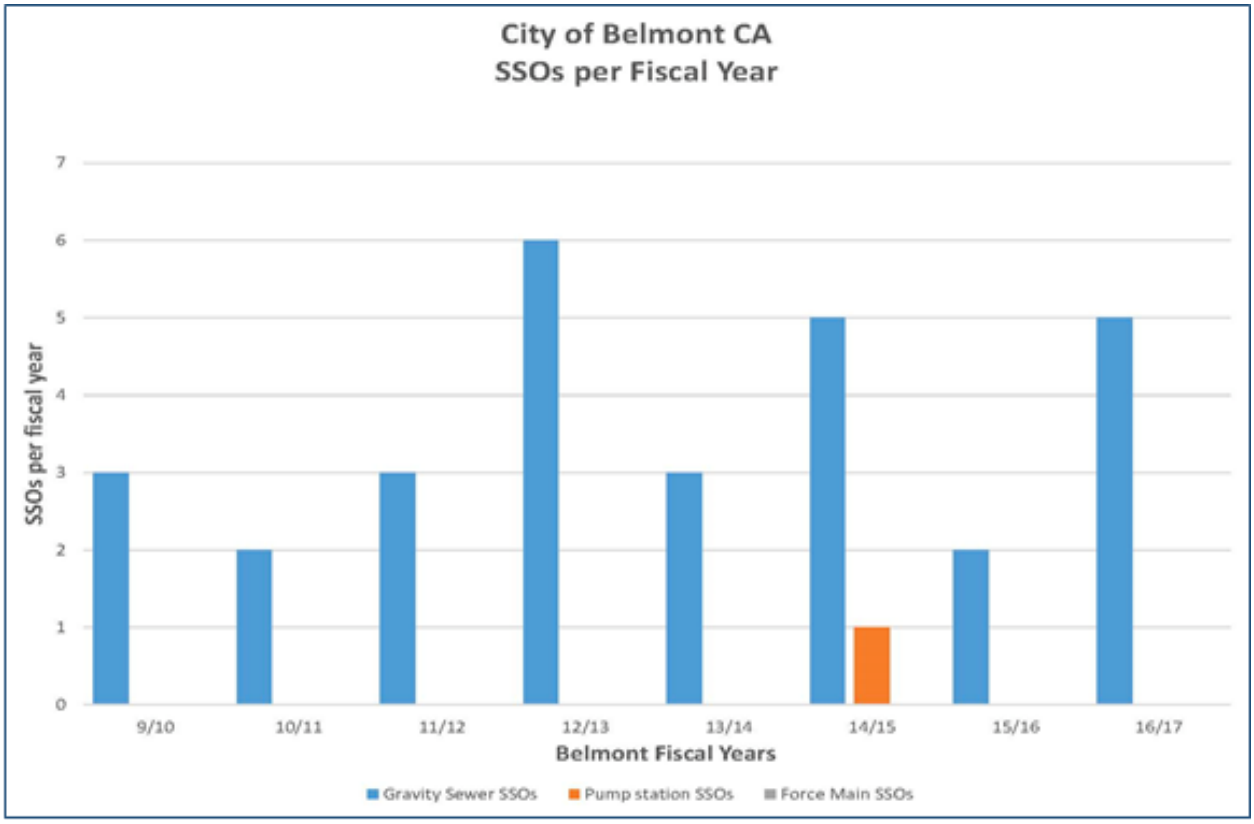


Table IX - 2: FY Totals for SSOs by Cause

FY	Roots	Debris	Grease	Capa city	Vandalism Construction	Pipe Failure	PS Failure	Total
2008	7	1	1	0	0	1	0	10
2009	3	0	1	0	0	0	0	4
2010	1	0	0	0	0	2	0	3
2011	2	0	0	0	0	0	0	2
2012	2	1	0	0	0	0	0	3
2013	2	1	0	2	0	1	0	6
2014	0	1	0	0	1	1	0	3
2015	1	2	0	0	1	2	0	6
2016	1	1	0	0	0	0	0	0
2017	2	3	0	0	0	0	0	0
Total	21	10	2	2	2	7	0	37

Figure IX - 2: Trend in Gravity Sewer, Lift Station and Force Main SSOs by Cause

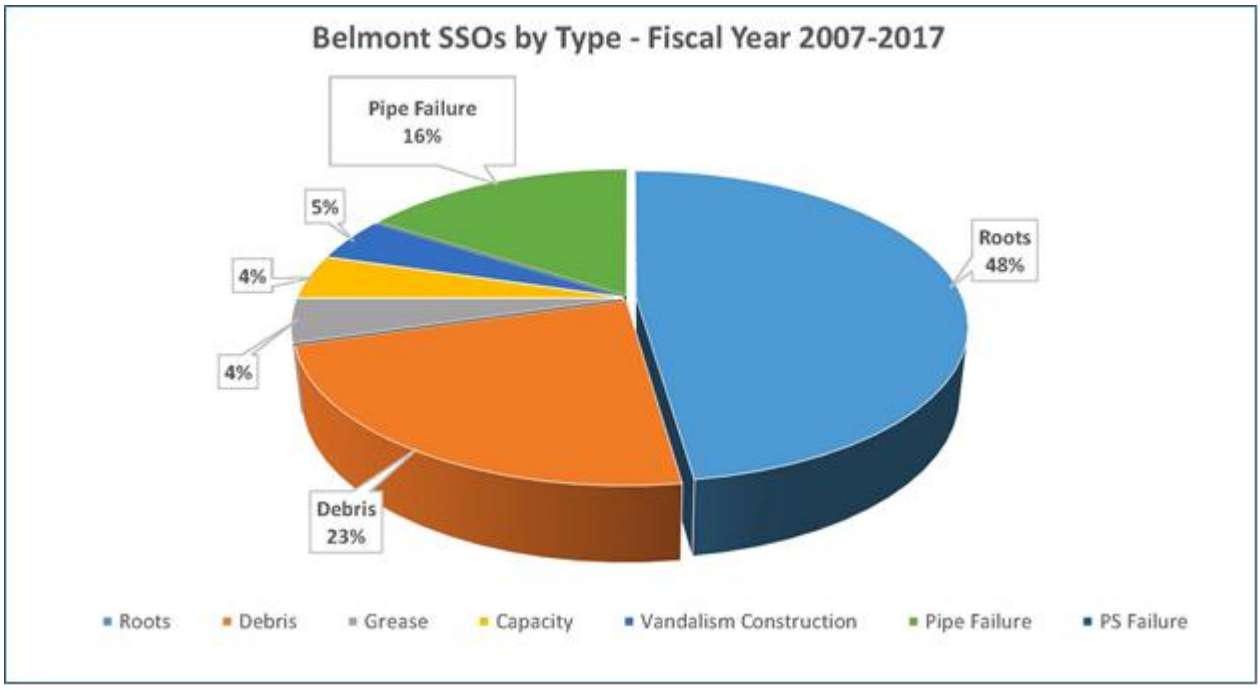
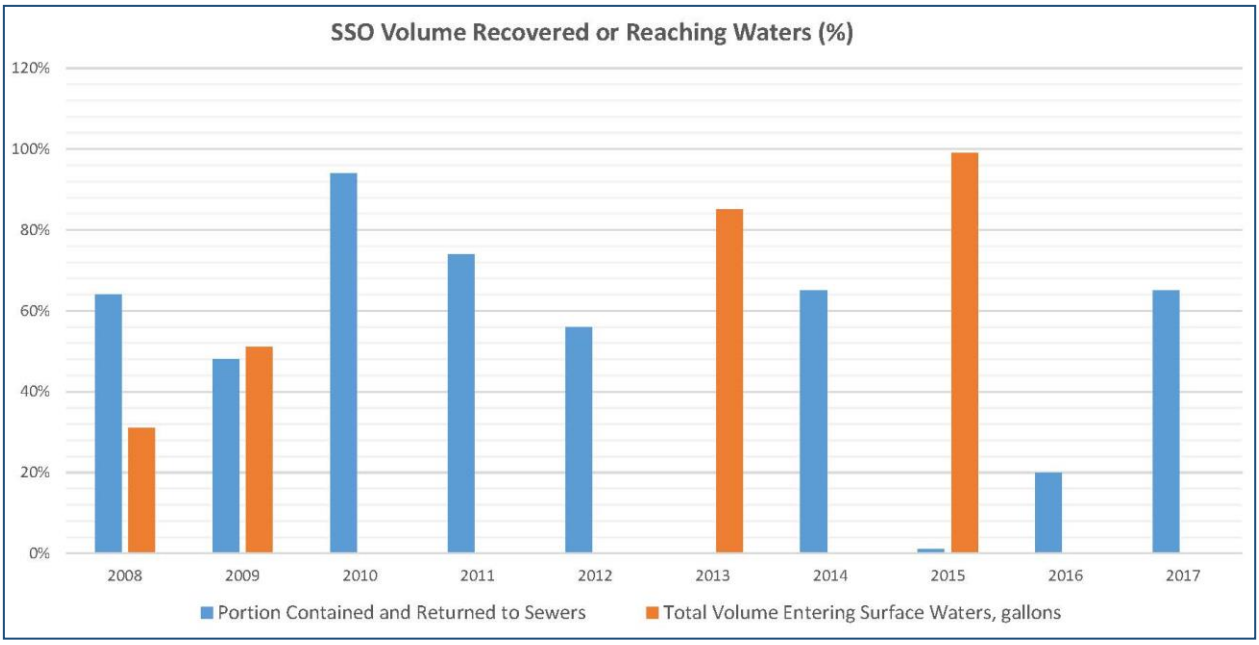


Table IX - 3: FY Totals for Sewer Mains (Volume Spilled, Portion Contained, and Volume to Surface Waters)

FY	Total Volume Spilled, gallons	Portion Contained and Returned to Sewers	Total Volume Entering Surface Waters, gallons
2008	1,469	940	450
2009	345	165	175
2010	270	253	0
2011	210	155	0
2012	215	120	0
2013	48,121	7,105	40,981
2014	1,365	893	0
2015	366,790	2,162	365,551
2016	457	20	0
2017	2,560	1,664	0
Total	421,802	13,477	407,157

Figure IX - 3: SSO Volume Recovered or Reaching Surface Waters, Percentage



IX-3. Performance Monitoring and Program Changes

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

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

IX-4. References

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

- City records
- CIWQS SSO data as of June 30, 2015

Element X: SSMP Program Audits

SWRCB Waste Discharge Requirement:

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

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

The Sewer System Management Plan Audit Report Form (Table 19) is used to guide the audit process and includes the GWDR requirements for each SSMP element. The results of the audit, including the identification of any deficiencies and the steps taken or planned to correct them will be included in an Audit Report. Upon completion of the audit, the City will include a copy of the Audit Report in **Appendix A**, Sewer System Annual Audit Reports of this SSMP. Modifications and changes to the SSMP will be identified and tracked in **Appendix B**, SSMP Change Log.

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

- How the sewer system agency implemented SSMP elements in the past year;

- The effectiveness of implementing SSMP elements;
- 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-1. SSMP Updates

The City will recertify its SSMP at least every five years from the original City Council adoption 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, Measurement and Modification Element IX. In the event that the City decides that an update is warranted, the process to complete the update will be identified. The City will complete the update and take the revisions to the City Council within one year of identifying the need for the update.

Table X - 1: SSMP Audit Checklist

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

Discussion:

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

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

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

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

Discussion:			
ELEMENT VIII- SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN			
A.	Does the Sanitary Sewer Strategic 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 improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment?	☐	☐
Discussion:			

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

ELEMENT XI – COMMUNICATION PROGRAM			
A.	Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and continue to address any feedback?	☐	☐
B.	Did the City Council receive and review the Annual Sewer System Report? Was the annual report uploaded to the City website and added to Appendix A?	☐	☐
C.	Did City staff conduct and document meetings with satellite collection systems? Are all agreements with satellite systems current or are changes necessary to these agreements?	☐	☐
Discussion:			
Change Log			
A.	Is the SSMP Change Log, current and up to date?	☐	☐
Discussion:			

Audit Team: _____ Date: _____

Prepared By: _____ Date: _____

Reviewed By: _____ Date: _____

Element XI: Communication Program

SWRCB Waste Discharge Requirement:

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

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

XI-1. Communication Program

The City maintains a website where the formally adopted Sewer System Management Plan is available along with all references referred to in the SSMP. The SSMP can found on the Sewer System page at http://www.belmont.gov/city-hall/public-works/engineering/infrastructure/sewer-system. The City's website is an effective communications channel for the providing of information to the public. The website also contains information regarding the responsibility of a private property owner for the private sewer lateral which carries sewage from the building on the parcel to the City's main sewer lines. Finally the website provides information and the rates for the operation and maintenance of the City sewer system.

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

Finally, as a discharger of sewage to the Silicon Valley Clean Water (SVCW). SCVW provides additional outreach information and materials on their website regarding the fats, oils and grease program (FOG), food service establishment discharge requirements, pretreatment requirements for dischargers and education opportunities for the public and especially children.

XI-2. Communicating Sanitary Sewer System Performance

The City, at least annually, communicates with the City Council at public meetings that allow for input from the public regarding the implementation and results of the collection system operations. Council annually at a regularly scheduled meeting after the close of the fiscal year receives collection system performance information that is included in the minutes of that public meeting. The performance information will include the performance measures listed in Element IX: Monitoring, Measurement, and Program Modifications and will be compiled in an annual collection system performance report.

Appendices

Appendix A: Sewer System Management Plan Audit Report - 2017

The purpose of the SSMP Audit is to evaluate the effectiveness of the City of Belmont SSMP and to identify any needed for improvement.			
Directions: Please check YES or NO for each question. If NO is answered for any question, describe the updates/changes needed and the timeline to complete those changes.			
		YES	NO
ELEMENT I - GOALS			
A.	Are the goals stated in the SSMP still appropriate and accurate?	☑	☐
Discussion: Goal #8 has been modified to reflect City's Operations and Maintenance strategy.			
ELEMENT II - ORGANIZATION			
A.	Is the List of City Staff Responsible for SSMP current?	☑	☐
B.	Is the Sanitary Sewer Overflow Responder List current?	☑	☐
C.	Is Figure II-1 of the SSMP, the City Organization Chart, current?	☑	☐
D.	Are the position descriptions an accurate portrayal of staff responsibilities?	☑	☐
E.	Is Table II-1 in the Chain of Communication for Reporting and Responding to SSOs section accurate and up-to-date?	☑	☐
F.	Is Table II-2 in the Chain of Communication for Reporting and Responding to SSOs section accurate and up-to-date?	☑	☐
Discussion: Organization Chart (Figure II-1) was updated in 2016. The position of Public Works Services Manager is currently filled by the Field Supervisor. The recruitment for this position is expected to be completed by the end of 2017. As soon as this position is filled, Elements 4, 6, and 9 will be handled by the Public Works Services Manager.			
ELEMENT III – LEGAL AUTHORITY			
Does the SSMP contain current references to the City of Belmont 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: The property owners are responsible for their sewer laterals including the connection to the City's sewer system. As a courtesy, City staff clean the line in case of a sewer lateral back-up.			
ELEMENT IV – OPERATIONS AND MAINTENANCE			
Collection System Maps			
A.	Does the SSMP reference the current process and procedures for maintaining the City's wastewater collection system maps?	☑	☐
B.	Are the City's wastewater collection system maps complete, current and sufficiently detailed?	☑	☐
C.	Are storm drainage facilities identified on the collection system maps? If not, are SSO responders able to determine locations of storm drainage inlets and pipes for possible discharge to waters of the state?	☑	☐
Prioritized Preventive Maintenance			
D.	Does the SSMP describe current preventive maintenance activities and the system for prioritizing the cleaning of sewers?	☑	☐
E.	Based upon information in the Annual SSO Report, are the City's preventive maintenance activities sufficient and effective in minimizing SSOs and blockages?	☑	☐
Scheduled Inspections and Condition Assessments			
F.	Is there an ongoing condition assessment program sufficient to develop a capital improvement plan addressing the proper management and protection of infrastructure assets? Are the current components of this program documented in the SSMP?	☑	☐
Contingency Equipment and Replacement Inventory			
G.	Does the SSMP list the major equipment currently used in the operation and maintenance of the collection system and documents the procedures of inventory management?	☑	☐
H.	Are contingency and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?	☑	☐
Training			

I.	Does the SSMP document current training expectations and programs?	☑	☐
Outreach to Plumbers and Building Contractors			
J.	Does the SSMP document currently outreach efforts to plumbers and building contractors?	☑	
Discussion: J –During permit stage for sewer rehabilitation city provides standard details to plumbers and current standard to avoid cross-connections. During capital improvement project stage, City staff makes sure that the contractor is implementing City's OERP during construction.			
ELEMENT V- DESIGN AND PERFORMANCE STANDARDS			
A.	Does the SSMP reference current design and construction standards for the installation for new sanitary sewer systems, lift stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?	☑	☐
B.	Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines?	☑	☐
Discussion: The City follows design and testing standards described in "Green Book", and California Building/Plumbing/Electrical Codes. City also has standard details for sewer lateral construction.			
ELEMENT VI – OVERFLOW AND EMERGENCY RESPONSE PLAN			
A.	Does the City's Sanitary Sewer Overflow Emergency Response Plan establish procedures for the emergency response, notification, and reporting of SSOs?	☑	☐
B.	Is City staff and contractor personnel appropriately trained on the procedures of the Sanitary Sewer Overflow Emergency Response Plan?	☑	☐
C.	Considering SSO performance data, is the Sanitary Sewer Overflow Emergency Response Plan effective in handling SSOs in order to safeguard public health and the environment?	☑	☐
D.	Are all SSO and claims reporting forms current or do they require revisions or additions?	☑	☐
E.	Does all SSO event recordkeeping meet the SSS GWDR requirements? Are all SSO event files complete and certified in the CIWQS system?	☑	☐

F.	Is all information in the CIWQS system current and correct? Have periodic reviews of the data been made during the year to assure compliance with SSS GWDR? Have all Technical Report and Water Quality Sampling requirements been met and uploaded to the CIWQS data management system?	☑	☐
G.	Was required training on SSMP and OERP completed and documented? Were field exercises with field staff on SSO volume estimation conducted and documented?	☑	☐
H.	Did all public improvement plans and specifications that could impact collection system operations include requirements for OERP training or were contractor OERP programs at least as stringent as the City OERP? Were regular items included in project meeting agendas to discuss emergency response procedures and communications?	☑	☐
Discussion: Items B and H: When City hires a contractor to conduct sewer rehabilitation project, it is stated in the contract documents that the contractor is supposed to use City OERP or contractor's OERP that is as stringent as the City's.			
ELEMENT VII – FATS, OILS AND GREASE (FOG) CONTROL PROGRAM			
A.	Does the FOG Control Program include efforts to educate the public on proper handling and disposal of FOG?	☑	☐
B.	Does the FOG Control Program identify sections of the collection system subject to FOG blockages, establish a cleaning schedule and address source control measures to minimize these blockages?	☑	☐
C.	Are requirements for grease removal devices, best management practices (BMP), record keeping and reporting established in the City's FOG Control Program?	☑	☐
D.	Does the City have sufficient legal authority to implement and enforce the FOG Control Program?	☑	☐
E.	Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system	☑	☐
Discussion: The City does not conduct FOG inspections but businesses that are known to contribute FOG into the sewer system are contacted by City. Sewer lines that have FOG problems are routinely cleaned and inspected.			
ELEMENT VIII- SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN			

A.	Does the Sanitary Sewer Strategic 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 improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment?	☑	☐
Discussion: The City has a list of capacity related projects that are almost completed. Currently the City is in the process of updating the existing hydraulic model based on most recent flow data. Any sewer lines that are hydraulically deficient will be included in the Capital Improvement Program for upsizing.			
ELEMENT IX - MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS			
A.	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?	☑	☐
B.	Is the City able to sufficiently evaluate the effectiveness of the SSMP elements based on relevant information?	☑	☐
Discussion: The implementation of preventive O&M and Capital Improvement Programs reduced the number and severity of SSOs.			
ELEMENT X – SSMP AUDITS			
A.	Will the SSMP Audit be completed, reviewed and filed in Appendix A?	☑	☐
Discussion:			
ELEMENT XI – COMMUNICATION PROGRAM			
A.	Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and continue to address any feedback?	☑	☐
B.	Did the City Council receive and review the Annual Sewer System Report? Was the annual report uploaded to the City website and added to Appendix A?	☑	☐

C.	Did City staff conduct and document meetings with satellite collection systems? Are all agreements with satellite systems current or are changes necessary to these agreements?	☑	☐
Discussion:			
Change Log			
A.	Is the SSMP Change Log, current and up to date?	☑	☐
Discussion: The Change Log is current and up to date. As the new changes come up in the SSMP, the Change Log will be updated.			

Audit Team: Bozhena Palatnik, Tim Murray, John Jacobi Date: 9/27/17

Prepared By: Bozhena Palatnik Date: 10/2/17

Reviewed By: Afshin Oskoui Date: 10/3/17

Approved for Filing on: October 10, 2017

Appendix B: Log of Sewer System Management Plan Changes

Log of SSMP Changes

Date	SSMP Element #	Description of Change/Revision Made	Person Authorizing Change
12/13/16	II	Organization Chart	BP
2/14/17	V	All standard details were updated	LA
08/17/17	I	Goal #8 has been modified to reflect City's Operations and Maintenance strategy.	BP
9/27/17	IV	Sections IV-1 and IV-2 have been updated including all tables containing data, charts, and appendices.	TM, JJ

Appendix C: Sewer System Management Plan Council Adoption Documents

RESOLUTION NO. 10275

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BELMONT ADOPTING THE SEWER SYSTEM MANAGEMENT PLAN (SSMP) PER THE STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENT (GWDR)

WHEREAS, the State Water Resources Control Board (SWRCB) adopted Order 2006-0003-DWQ (Statewide General Waste Discharge Requirements for Sanitary Sewer Systems) in May 2006; and,

WHEREAS, all federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California are required to comply with the terms of this Order; and,

WHEREAS, the General Waste Discharge Requirements (GWDR) of the Order requires the City to develop and adopt a Sewer System Management Plan (SSMP) with the purpose of providing proper and efficient management, operation, and maintenance of the City's sanitary sewer system in order to minimize the number and impact of SSO's throughout the State; and,

WHEREAS, the City has completed all required elements of the SSMP within the State Water Resources Control Board Order 2006-0003-DWQ mandated requirements and the final plan is now ready for adoption and certification.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Belmont approves the adoption and certification of the Sewer System Management Plan (SSMP).

* *

I hereby certify that the foregoing Resolution was duly and regularly passed and adopted by the City Council of the City of Belmont at a regular meeting thereof held on August 10, 2010 by the following vote:

AYES, COUNCILMEMBERS: Lieberman, Feierbach, Braunstein, Warden, Wozniak

NOES, COUNCILMEMBERS: None

ABSTAIN, COUNCILMEMBERS: None

ABSENT, COUNCILMEMBERS: None

CLERK of the City of Belmont

APPROVED:

MAYOR of the City of Belmont

Complete report on file in the City Clerk's office

RESOLUTION NO. 2015-098

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BELMONT ADOPTING THE CITY OF BELMONT 2015 SEWER SYSTEM MANAGEMENT PLAN PER THE STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS

WHEREAS, The City of Belmont owns and operates a sanitary sewer collection system serving a population of approximately 26,000 customers in a 4.6 square miles service area that consists of 85 miles of gravity sewers, 2,674 manholes, 5 miles of force mains, and 11 lift stations; and,

WHEREAS, the State Water Resources Control Board (SWRCB) adopted Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (GWDR), in May 2006; and,

WHEREAS, all federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California and are not otherwise discharging pursuant to their own separate waste discharge requirements or under a National Pollutant Discharge Elimination System ("NPDES") permit, are required to comply with the terms of this Order; and,

WHEREAS, the GWDR Order requires the City to develop and adopt a Sewer System Management Plan (SSMP) with the purpose of providing proper and efficient management, operation, and maintenance of the City's sanitary sewer system in order to minimize the number and impact of sanitary sewer overflows throughout the State; and,

WHEREAS, the SSMP shall be updated every five years, must include any significant program changes and be approved at a public meeting by the City Council; and,

WHEREAS, the current SSMP was adopted by Council in August 2010 and is currently due for re-certification; and,

WHEREAS, the City has updated its SSMP, which updated SSMP remains subject to the City Council's review and approval; and,

WHEREAS, the City's updated SSMP is in compliance with the requirements set forth in the GWDR and is ready for adoption and certification.

Page 1 of 2

NOW, THEREFORE, the City Council of the City of Belmont resolves as follows:

SECTION 1. Approves the adoption and certification of the City of Belmont Sewer System Management Plan dated October 2015.

* * *

ADOPTED October 13, 2015, by the City of Belmont City Council by the following vote:

Ayes: Wright, Reed, Lieberman, Stone, Braunstein

Noes:

Absent:

Abstain:

ATTEST:

City Clerk

Mayor

APPROVED AS TO FORM:

City Attorney

Page 2 of 2