

**SSMP
ELEMENT 10 – SSMP AUDITS
APPENDIX 10.3**

**Biennial Sewer System
Management Plan Audit Reports**

City of San Mateo
Biennial Sewer System Management Plan Audit Report

Date: December 2014

Prepared by: Sarah Scheidt, Regulatory Compliance Manager

Reviewed by: Ray Jackson, Field Maintenance Manager

The purpose of the Sewer System Management Plan (SSMP) Audit is to evaluate the effectiveness of the City of San Mateo's SSMP and to identify whether updates are needed. This document was designed to meet the requirements of State Water Resources Control Board Order No. 2006-0003-DWQ as revised by Order No. WQ 2013-0058-EXEC. Documentation of SSMP audits are kept on file at the City of San Mateo Corporation Yard, and this report becomes part of Section 10 – Program Audits and is uploaded as an updated section to the SSMP in CIWQS.

Directions: *Please update the following items in the SSMP:*

Update Element 2 – Organization and Element 2 Appendix including sewer staffing, budget, and CIP. Note any other updates as needed per the directions below.

Directions: *Please indicate YES or NO for each question. To answer the following questions, refer to the text of the SSMP Element, any referenced material in the text, all corresponding attachments, and any data collected to assist in assessing SSMP effectiveness. For any NO responses describe the updates or changes needed and the timeline to completion in “Description of Scheduled Updates/Changes to the SSMP” on the last page of this form.*

ELEMENT 1. GOALS

1. Are the goals stated in the SSMP still appropriate and accurate? **YES** / ~~NO~~

ELEMENT 2. ORGANIZATION

2. Is the SSMP up-to-date with organization and staffing contact information? **YES** / ~~NO~~

ELEMENT 3. LEGAL AUTHORITY

3. Does the SSMP reference up-to-date information about legal authority? ~~YES~~ / **NO**
4. Does City of San Mateo have sufficient legal authority to control sewer use and maintenance? ~~YES~~ / **NO**

ELEMENT 4. OPERATIONS AND MAINTENANCE PROGRAM

4.a Map of the Sanitary Sewer System

5. Does the SSMP reference up-to-date information about maps? YES / ~~NO~~
6. Are collection system maps complete, up-to-date, and sufficiently detailed? ~~YES~~ / NO

4.b Preventative Maintenance Program

7. Does the SSMP contain up-to-date information about preventive operations and maintenance activities? ~~YES~~ / NO
8. Are the City of San Mateo's preventive maintenance activities sufficient and effective in reducing and preventing SSOs and blockages? ~~YES~~ / NO

4.c Rehabilitation and Replacement Plan

9. Does the SSMP contain up-to-date information about the rehabilitation and replacement program? YES / ~~NO~~
10. Does the SSMP contain up-to-date information about Closed Circuit Television (CCTV) inspections? ~~YES~~ / NO
11. Are scheduled inspections and the condition assessment system effective in identifying, prioritizing, and addressing deficiencies? ~~YES~~ / NO
12. Does the Capital Improvement Plan (CIP) address prioritized projects for collection system assets? ~~YES~~ / NO

4.d Training

13. Does the SSMP contain up-to-date information about existing training programs? YES / ~~NO~~
14. Do supervisors believe their staff are sufficiently trained? ~~YES~~ / NO
15. Are staff satisfied with the training opportunities and support offered to them? ~~YES~~ / NO

4.e Equipment and Replacement Part Inventories

16. Does the SSMP reference up-to-date information about equipment and replacement part inventories? ~~YES~~ / NO

ELEMENT 5. DESIGN AND PERFORMANCE PROVISIONS

17. Does the SSMP contain up-to-date information about design and construction standards? YES / ~~NO~~

ELEMENT 6. SSO & BACKUP RESPONSE PLAN

18. Does the SSMP contain an up-to-date version of SSO Response Plan? YES / ~~NO~~
19. Is the Response Plan effective in handling SSOs? (if YES, indicate specific information under the "Evaluation of the Effectiveness of the
- ~~YES~~ / NO

SSMP” section below)

ELEMENT 7. FATS, OILS, AND GREASE (FOG) CONTROL PROGRAM

20. Does the SSMP reference or contain up-to-date information about the City of San Mateo’s FOG control program? **YES / NO**
21. Is the current FOG program effective in documenting and controlling FOG sources? **YES / NO**
22. Are all public outreach materials for the FOG program current? **YES / NO**

ELEMENT 8. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

23. Does the SSMP reference or contain up-to-date information about the City’s capacity assessment activities and documentation? **YES / NO**
24. Is the City sufficiently addressing hydraulic deficiencies? **YES / NO**

ELEMENT 9. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

25. Does the SSMP reference up-to-date information about the City’s data collection and organization (e.g. use of CMMS, performance indicators, etc.)? **YES / NO**
26. Is the City’s data collection and organization sufficient to evaluate the effectiveness of the SSMP? **YES / NO**

ELEMENT 10. SSMP PROGRAM AUDITS

27. Will this SSMP Audit be completed by every two years starting in 2014? **YES / NO**

ELEMENT 11. COMMUNICATION PROGRAM

28. Is the City’s website up-to-date, including information related to providing an opportunity for public input on the SSMP? **YES / NO**

Evaluation of the Effectiveness of the SSMP:

In general, the City of San Mateo’s preventive maintenance activities are sufficient and effective in reducing and preventing SSOs and blockages, at least in dry weather. Section 9 of the SSMP includes metrics reported in the Annual CDO Report, which show decreasing trends in SSOs and blockages during dry months. However, in high rain months/years, inflow and infiltration continue to be the most significant source of SSOs. Reductions caused by debris and FOG are declining slightly, while infrastructure failures are on the rise.

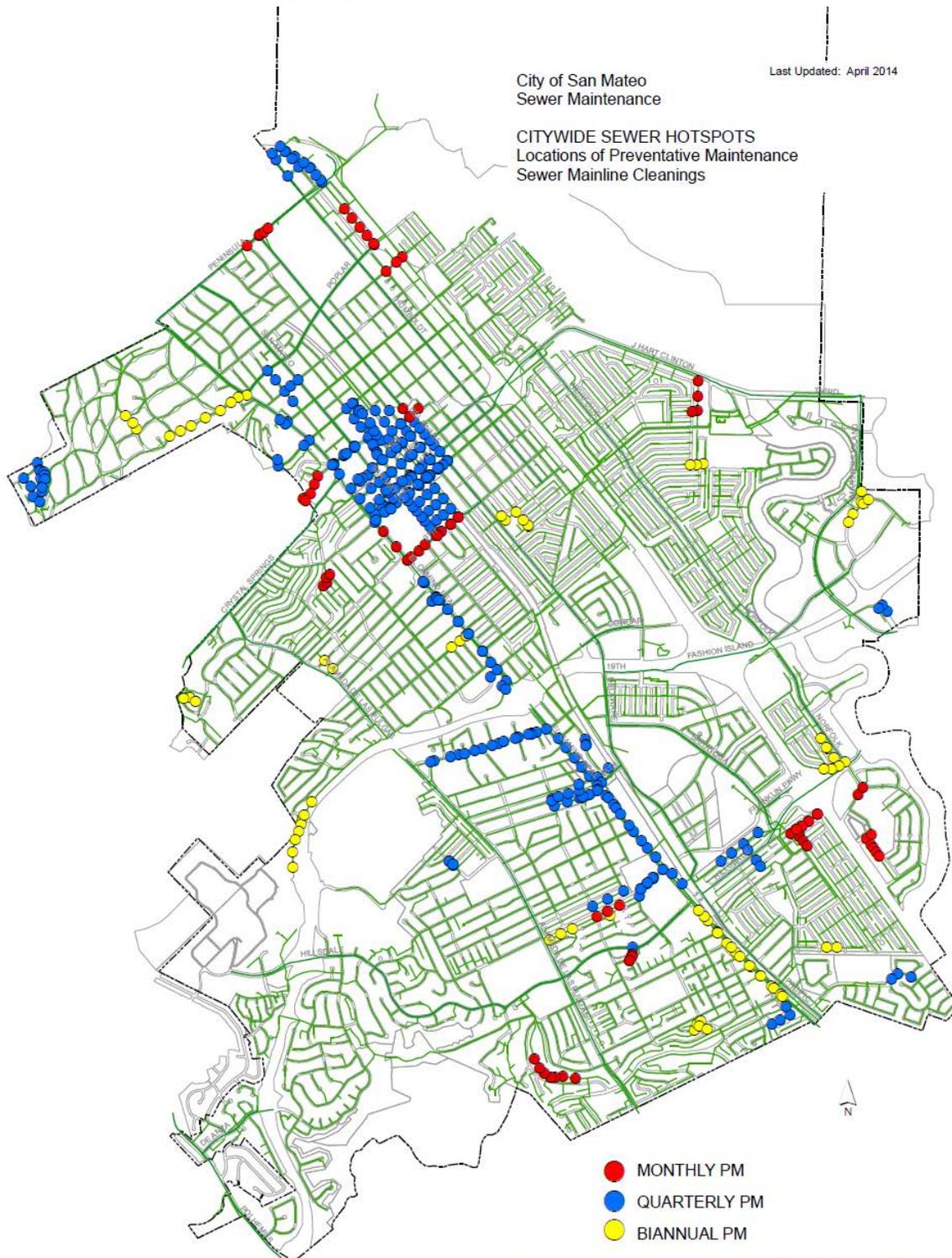
The Environmental Services Division Sewer Operations and Maintenance Section (Sewer Maintenance) has several approaches for maintenance and cleaning of the sewer collection system. The “Hot-Spot” Sewer Cleaning Program targets problematic pipes for monthly, quarterly, and biannual preventative maintenance cleaning. The Citywide Sewer District Cleaning Program directs methodical cleaning of every sewer pipe citywide on a scheduled

basis. These activities are coordinated with contracted annual root-foaming and contracted annual condition assessment projects (sewer pipe cleaning followed by closed-circuit television inspection -“CCTV”).

Objectives of these preventative maintenance programs include the reduction in the number and impacts of sanitary sewer overflows (SSOs).

SEWER PREVENTATIVE MAINTENANCE CLEANING

“HOT-SPOT” Sewer Cleaning Program



The majority of “hot-spot” cleanings target fats, oil and grease (FOG) buildup in pipes near restaurant/commercial areas and multi-family residences. Other areas require repetitive cleanings because of poor grade, sags in pipes, consistent build-up of paper, or multiple problems creating re-occurring blockages.

Hot-Spot locations were developed and updated over the years through historical knowledge, analysis of data captured in the computerized maintenance management system (CMMS)/asset management program and analysis of CCTV data (2007 Hot-Spot Condition Assessment CCTV Project). More recently, with the purchase of 35 manhole Smart-Covers, staff can use alarm records to identify locations requiring more frequent cleaning. Since 2009, the City has responded to 138 alarms which generated responses from City crews ranging from inspection and monitoring to jetting and removing blockages. Since 2009, 48 responses included jetting line to remove obstructions and relieve surcharging and potential overflows. The City had 6 alarms in 2013 that resulted in jetting and relieving surcharging conditions.

The list of hot-spots (attached as Exhibit A) is maintained on an on-going basis to add or remove locations as necessary, or modify cleaning methods or frequency. Sewer Maintenance staff review the Hot-Spots list and make updates as necessary. Locations are also CCTV'd every five years. These records are reviewed and discussed with the Engineering Division to determine if rehabilitation is required and may alleviate the need for more frequent cleanings than once a year.

During 2013, evaluation of cleaning frequencies and effectiveness resulted in the following modifications to the hot-spot cleaning program:

Locations added during 2013:

- Kingridge – FOG, Solids
- 111 E Santa Inez - Solids
- McLellan and Curtiss - Solids
- 177 N El Camino Real – Solids
- 145 Sylan - FOG

Locations Removed during 2013:

None - Problem areas are reported to Engineering as they arise, and repairs/replacements are prioritized and conducted. However, the need for maintenance has not diminished. This is partly because of other factors such as solids and grease impacts from high density restaurants and residential areas where outreach and enforcement may not be as effective. Coordination with Engineering to prioritize hot-spots will continue.

2013 Hot-Spot Cleaning Linear Feet

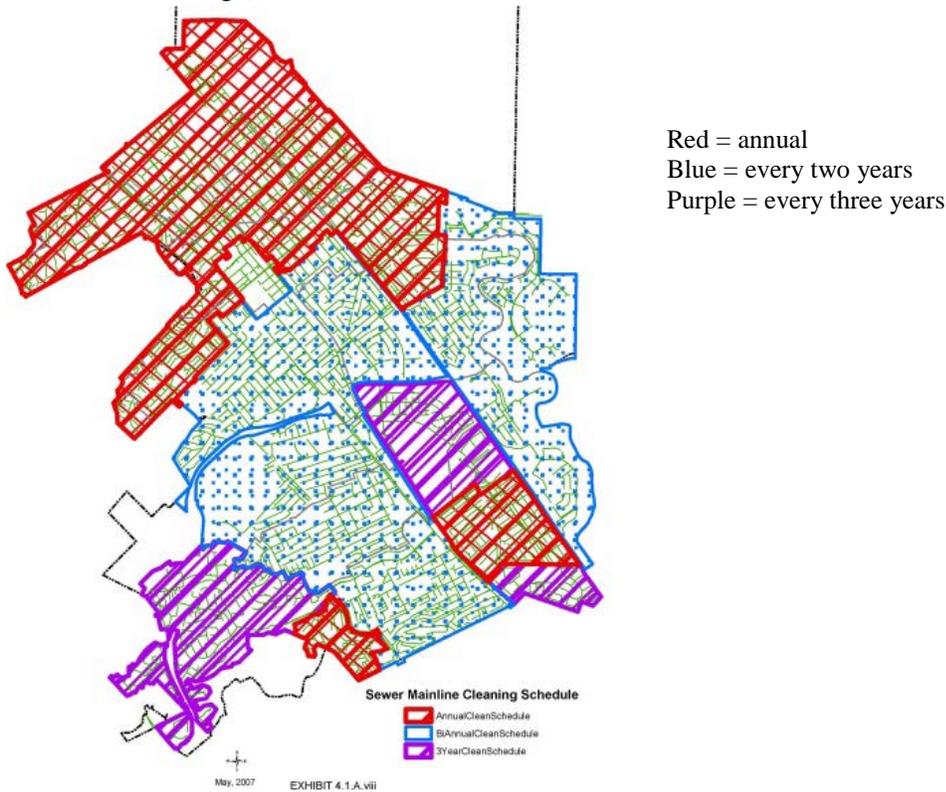
Frequency	Linear Feet	Annual LF Cleaned
Monthly	11,467	137,604
Quarterly	60,301	241,204
Bi-Annual	16,664	33,328
Total Linear Feet:		412,136 (78.1 miles)

Citywide Sewer District Cleaning Program

Sewer Maintenance implemented a citywide district cleaning program in early 2008 and fine-tuned the program in 2009. The citywide district cleaning program provides sewer crews with map-based work

orders that cover small sewer networks (districts). Work is scheduled for crews to move from one district to the next and follow the flow from outlying pipes down to the larger interceptors and trunk lines.

In 2007, sewer maintenance staff identified areas of San Mateo where sewer pipes require a minimum of annual cleaning, a minimum cleaning of every two years, and pipes that could be cleaned on a three-year rotation (map below). This rotation schedule was initially helpful in generating annual work schedules for district cleanings.



Since 2008, a citywide cleaning schedule has been developed for the upcoming calendar year. This schedule takes into account which sewer basin is due for a clean and CCTV project, and where root-foaming will occur. With these projects mapped, the crew district cleaning schedule is then developed to ensure crews will not overlap cleaning with contractors, and to ensure crew cleaning can be scheduled three to four months before and three to four months after pipes are root foamed. Since annual contracted clean and CCTV projects cover one-fifth of the City per year, and the root-foaming program covers 2 large sections of San Mateo on an annual rotating basis, it turns out that most of San Mateo sewer mainlines are cleaned on an annual basis rather than following the rotation schedule of the above map.

Linear Feet Cleaned in 2013

CLEANING CATEGORY	Linear Feet	Miles
Hot Spots	412,136	78.1
Citywide District Cleaning	655,936	124.2
Emergency Response	72,058	13.6
Supervisor Request	63,638	12.1
A-Basin Contract Cleaned Hydraulically	220,115	41.7
Total	1,423,883	270

PERFORMANCE INDICATORS

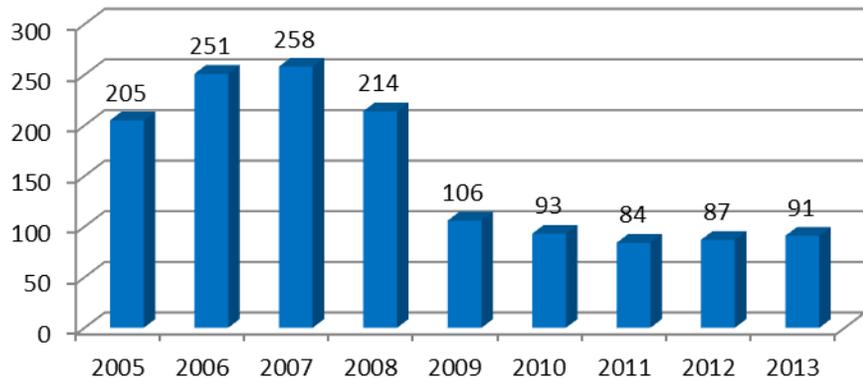
Miles Cleaned By Year

Calendar Year	# Miles Cleaned (Crews only)
2005	138
2006	147
2007	150
2008	158
2009	179
2010	192
2011	200
2012	268
2013	228

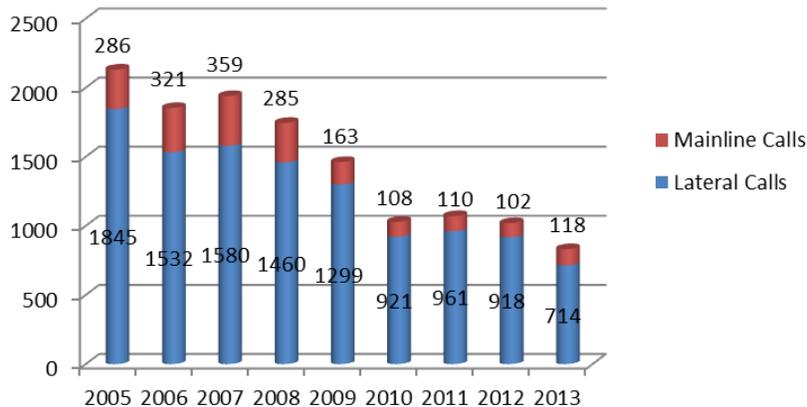
Blockages and Emergency Calls

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total # Sewer Mainline Blockages (wet and dry weather)	248	259	260	249	117	111	103	102	118
# Sewer emergency calls	2131	1853	1939	1745	1462	1029	1071	1020	832

Total # Dry Weather Sewer Main Blockages



Emergency Sewer Call-Outs



CCTV/PIPE CONDITION ASSESSMENT PROGRAM

The Environmental Services Division conducts video condition assessment of each sewer mainline every five years. A five year period was selected to provide sufficient information to trend the condition of the lines and schedule repairs prior to failure.

The CCTV inspection is performed by contracted services. Information from the CCTV inspection is utilized in prioritizing annual mainline repair projects.

Clean and CCTV in 2013

Activity	Linear Feet	Miles
2013 Contract Cleaned	220,115	41.7
2013 CCTV	217,662	41.2

ROOT CONTROL PROGRAM

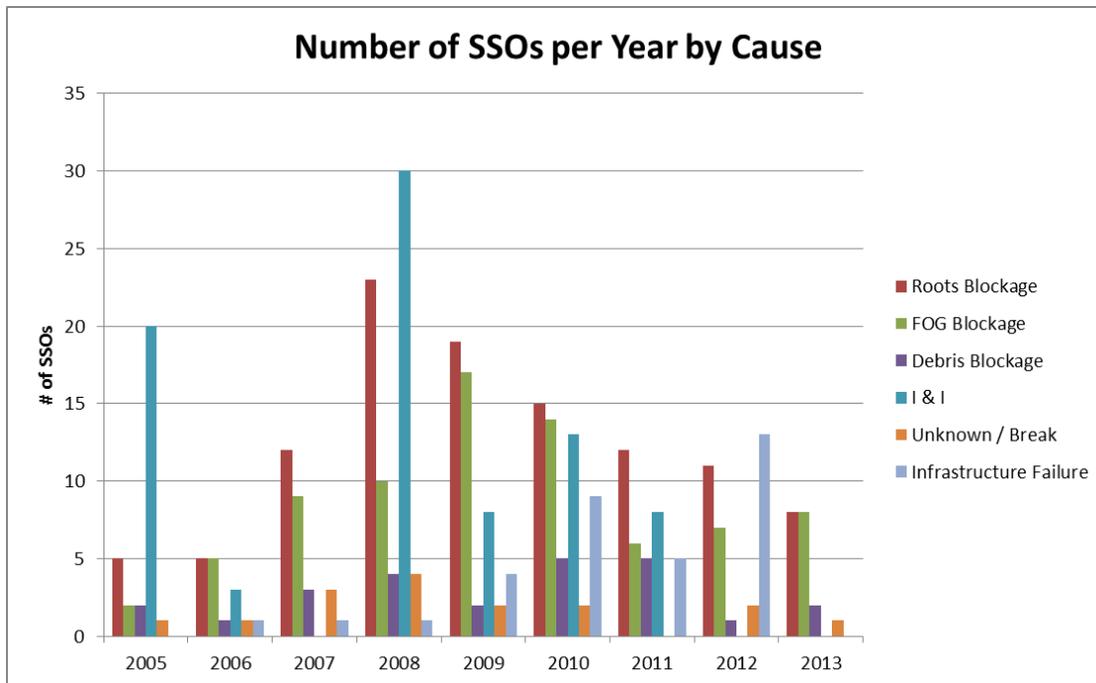
The City's Root Control Program treats areas with significant root intrusion. The City divided the areas into two sections to be treated in alternate years. The area west of El Camino Real and north of Highway 92 is treated in odd years and the area west of El Camino Real and south of Highway 92 is treated in even years.

In 2013 the City treated area west of El Camino Real and north of Highway 92 in accordance with this schedule, and treated a total of 207,020 linear feet.

The City has seen a reduction in SSOs caused by roots since 2008 (see chart below). Staff anticipates seeing even further reductions in the future after a few more cycles of root treatments.

Proposed activities for 2014 include:

- Sewer Main Cleaning: 284,000 LF
- Sewer Main CCTV Inspection: 284,000 LF
- Sewer Main Root Foaming: 350,000 LF



A few recommendations (as referenced in the December 2014 Master Plan) are provided to better assess the overall collection system including:

- **Flow Monitoring Program** – The City has implemented a flow monitoring program as required by the CDO Reports IV.B.2 and submits an annual report summarizing the results of its program including average dry weather flow and peak wet weather flow from its collection system. The City has conducted temporary flow monitoring on the trunk lines in strategic locations as part of their hydraulic model update, and also has a permanent flow meter at the headworks at the WWTP. Flow monitoring by basin and sub-basin is recommended to better define the areas with the highest infiltration and inflow in the collection system. Pinpointing the problem areas will allow the City to rehabilitate those specific areas thereby reducing inflow and infiltration (I/I) in a cost effective manner. It is recommended that the flow monitoring program include monitoring of key sewer lines, pump stations, and at the influent junction box at the WWTP.
- **Manhole and Pipeline Inspection** – The City routinely inspects manholes. The City targets closed circuit TV (CCTV) inspection of approximately 1/5 of the collection system each year. Based on the CCTV inspection results, recommendations are made for the rehabilitation of the collection system pipes. A onetime inspection of all manholes by a certified NASSCO MACP inspector is recommended to set a baseline condition of the system, determine the life expectancy of manholes in the City, and to aid in setting up a manhole rehabilitation and/or replacement program.
- **More specific recommendations on developing a comprehensive condition assessment and rehabilitation program** are included in Chapter 4 of the Integrated Wastewater and Collection System Master Plan, December 2014 – Collection System Overview and Condition Assessment.

Description of Scheduled and Completed Updates/Changes to the SSMP

Table of Contents: Element 9 – Exhibits was updated to reflect removal of outdated maps.

- Latest revision needs to be uploaded to CIWQS and City Website
- Timeline for completing updates and uploads to CIWQS and website: July 2015

SSMP Overview: The overview had minor updates which were completed between September and December 2014. Table ii.1: SSMP – Required Elements and Dates of Submittal was updated to list the most current revisions per SSMP section. Table iii.1 was updated per the December 2014 Master Plan.

- Sanitary Sewer Collection System Assets section still needs updated to include updated Pump Station information including Bay Meadows and other statistics including pump station flows.
- Revision dated 12-13-14 or latest needs to be added to CIWQS and the City website.
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 1 – Goals: Minor updates occurred in September 2014. City website updated.

- Latest revision needs to be updated to CIWQS.
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 2 – Organization: Minor updates to the description of the ESD occurred including updates to organizational charts, chain of command, and phone numbers and designation of responsible parties.

- Review of descriptions of duties of responsible personnel should occur. In particular, PW Supervisor and Field Maintenance Manager, and Senior Project Manager. These descriptions date back to the Sarah Parrish days.
- Final updates should be uploaded to CIWQS and City Website.
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 3 – Legal Authority: Minor updates made

- Summary of updates made 11-15-14 should be included here
- Goals need to be updated
- Final revisions should be uploaded to CIWQS and City Website
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 4 – O&M: Updates made 11-14-14, although unclear what was updated. A summary of revisions should be included here.

- Program Updates are still needed, latest draft references 2011 Program Updates
- Performance Indicators need to be updated and consistent with Element 9, current version references 2011 as latest.
- Rehabilitation and Replacement Program has not been updated, and should be updated consistent with the Dec 2014 Master Plan
- Sewer Maintenance Staff Training Appendix 4.5 needs to be updated or removed. Appendix 4.5 has not been updated since 2012.
- O&M Program Goals need to be updated and consistent with Master Plan recommendations
- Maps and Appendix need to be updated and consistent with Master Plan
- All updates should be uploaded to CIWQS and Website

- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 5 – Design Standards: Any updates need to be summarized here

- Update if needed
- Latest revision date should be added as a footer, currently it is not clear if this section was updated, or when.
- All updates need to be uploaded to CIWQS and the website
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 6 – ERP: Updated April 2014 with new procedures per WDR regarding spill notification and reporting, contact and chain of command information, graphs, etc. Website updated.

- References to sampling at 10,000 gallons to surface water need to be updated to 50,000 gallons.
- Needs to be uploaded to CIWQS
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 7 – FOG Program: Minor updates made September 2014 including updates to inspection and outreach procedures, coordination between Source Control and Sewer Maintenance Programs, and Exhibits including updated Grease Hot Spots. Website Updated.

- Updated section needs to be uploaded to CIWQS.
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 8 – System Evaluation and Capacity Assurance: Latest revision online is 2009.

- Updates made by Cathi Z in December need to be finalized, including updated reference to 2014 Master Plan and Executive Summary Exhibit
- Consider adding additional details and summary per Master Plan
- Updated section needs to be uploaded to CIWQS and website.
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 9 - COLLECTION SYSTEM MONITORING, MEASUREMENT & PROGRAM MODIFICATIONS: Updates made to metrics and statistics, and CIP Project Update Exhibit. Several maps that could not be updated were removed and updated information included within the text.

- Latest 12-12-13 revision needs uploaded to CIWQS and website.
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 10 – SSMP Audit:

- Previous word document including accomplishments, metrics, etc. should be updated, it is dated 2012.
- A copy of this audit report should be included in final Element 10 section, or replace previous versions.
- A timeline for completing all of the above recommended updates should be included in final audit report.
- Updated section needs to be uploaded to CIWQS and website.
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Element 11 – Communication: Minor edits were made in December 2014.

- Latest revision needs uploaded to CIWQS including any Appendix.
- Timeline for completing updates and uploads to CIWQS and website: July 2015

Summary: All SSMP Updates will be completed by July 2015. In addition, all SSMP Element Revisions will be uploaded to CIWQS as they are completed, and no later than July 2015. SSMP Elements currently in the CIWQS system indicate revision dates of 2006-2009, although more recent updates are on file with the City, they were never uploaded to CIWQS. The SSMP is required to be updated and recertified every five years, and these both need to be completed by July 2015. Updates should be complete by May 31, 2015 to allow for time needed to present to City Council for recertification sometime in July 2015. This audit will be uploaded as Element 10 to the SSMP section of CIWQs in December 2014, and satisfies the requirement for a biennial audit.

City of San Mateo SSMP Audit Report Form

Audit Completed by: V. W. Housen & Associates

Period Covered: Calendar Years 2015-2016

Audit Date: June 20, 2017

Introduction		Yes	No
Is the current system description complete and up to date? Are all infrastructure statistics current and complete?		X	
Discussion: The current system description is complete. The number of miles of pipe should be updated to 237 miles to be consistent with currently known information. This number will be changed in the SSMP by August 31, 2017.			
Element 1 – Goals		Yes	No
A	Are the goals stated in the SSMP still appropriate and accurate?	X	
Discussion: The goals for the SSMP remain as stated in the current document.			

Element 2 – Organization		Yes	No
A	Is the Contact Information current?	X	
B	Is the Sanitary Sewer Overflow Responder List current?	X	
C	Is the Organization Chart in Figure 2-1 of the SSMP current?	X	
D	Are the position descriptions an accurate portrayal of staff responsibilities?	X	
E	Is the chain of communication for reporting and responding to SSOs accurate and up-to-date?	X	

Element 2 – Organization		Yes	No
Discussion: Information on the City’s organization related to the sewer collection system is current and accurate.			

Element 3 – Legal Authority		Yes	No
Does the SSMP contain current references to the District’s Code documenting the District’s legal authority to:			
A	Prevent illicit discharges?	X	
B	Require proper design and construction of sewers and connections?	X	
C	Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City?	X	
D	Limit discharges of fats, oil and grease?	X	
E	Enforce any violation of its sewer ordinances?	X	
F	Were any changes or modifications made in the past year or since the last SSMP audit to District Ordinances, Regulations, or standards?		X
Discussion: There have been no changes to the Ordinances related to sewer system management.			

Element 4 – Operations and Maintenance		Yes	No
Collection System Maps			
A	Does the SSMP reference the current process and procedures for maintaining the District’s sanitary sewer system maps?	X	
B	Are the District’s wastewater collection system maps complete, current, and sufficiently detailed?	X	
Prioritized Preventive Maintenance			

Element 4 – Operations and Maintenance		Yes	No
C	Does the SSMP describe current preventive maintenance activities and the system for prioritizing the cleaning of sewer lines?	X	
D	Based upon the SSO information in CIWQS and the Annual SSO Report, are the District’s preventive maintenance activities sufficient and effective in minimizing SSOs and blockages?		X
Rehabilitation and Replacement Program			
E	Is there an ongoing condition assessment program sufficient to rank the condition of sewer pipes and schedule rehabilitation? Are the current components of this program documented in the SSMP?	X	
F	Does the rehabilitation and replacement plan include a capital improvement plan that addresses proper management and protection of the infrastructure assets? Does the plan 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?	X	
Contingency Equipment and Replacement Inventory			
G	Does the SSMP list the major equipment currently used in the operation and maintenance of the collection system?	X	
H	Are contingency equipment and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?	X	
Training			
I	Are the training records current?		X
J	Does the SSMP document current training expectations and programs?	X	

Element 4 – Operations and Maintenance		Yes	No
<p>Discussion:</p> <ul style="list-style-type: none"> • Item D - Table 4-3, Sewer Maintenance Performance Indicators, was most recently amended in 2014. This table will be updated to include 2015 and 2016 data by August 31, 2017. Data from 2015 and 2016 show no reduction in dry weather SSOs between 2014 and 2016. However, performance during the 2014-2016 timeframe was an improvement over the 2011-12 timeframe. • Item F - Table 4-4, Total Expenditures on Sewer Rehabilitation and Replacement Projects by FY, will be updated to include 2015 and 2016 data by August 31, 2017. • Item I - Appendix 4.5, Training Record, is not current and will be updated by August 31, 2017. 			

Element 5 – Design and Performance Standards		Yes	No
A	Does the SSMP reference current design and construction standards for the installation of new sanitary sewer systems, pump stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?	X	
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?	X	
<p>Discussion: There were no changes to the City’s Engineering Standards during the audit period.</p>			

Element 6 – Overflow and Emergency Response Plan		Yes	No
A	Does the District’s Overflow Emergency Response Plan (OERP) contain proper notification procedures so that the primary responders and regulatory agencies are informed of all sanitary sewer overflows (SSOs) as required by the WDR and MRP?	X	
B	Does the OERP have a program to ensure an appropriate response to all overflows?	X	

Element 6 – Overflow and Emergency Response Plan		Yes	No
C	Does the OERP contain procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities of all SSOs that potentially affect public health or reach waters of the State in accordance with the MRP? Does the SSMP identify the officials who will receive immediate notification of such SSOs?	X	
D	Are staff and contractor personnel aware of and appropriately trained on the procedures of the OERP?	X	
E	Does the OERP contain procedures to address emergency operations such as traffic and crowd control and other necessary response activities?	X	
F	Does the OERP 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 SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge?	X	
G	Considering SSO performance data, is the OERP effective in handling SSOs in order to safeguard public health and the environment?	X	
H	Is the Water Quality monitoring Plan current and has it been trained on and practiced by staff that would be involved in a SSO of large volume?	X	
I	Was sampling conducted within 48 hours for all SSOs greater than 50,000 gallons and were results entered for these SSOs through the CIWQS website?	X	
J	Has the District prepared a Technical Report for all SSOs larger than 50,000 gallons? Have all Technical Reports been filed on the CIWQS website as required?	X	
<p>Discussion: There were no changes to the OERP during the audit period. The City has followed the SSMP in their SSO response, including conducting water quality testing and submitting SSO Technical Reports for spills over 50,000 gallons.</p>			

Element 7 – Fats, Oils, and Grease (FOG) Control Program		Yes	No
A	Does the Fats, Oils, and Grease (FOG) Control Program include a description of public education outreach efforts that promote proper handling and disposal of FOG?	X	
B	Does the FOG program include a plan for the disposal of FOG generated within the sewer system service area?	X	
C	Does the District have sufficient legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG?	X	
D	Are there requirements to install grease removal devices (such as traps or interceptors), best management practices (BMP) requirements, record keeping, maintenance requirements and reporting requirements established in the City's FOG Control Program?	X	
E	Does the District have authority to inspect grease producing facilities and have sufficient staff to inspect and enforce the FOG ordinance?	X	
F	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?		X
G	Does the FOG control program implement source control measures for all sources of FOG discharged to the collection system?	X	
H	Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system?		X
<p>Discussion:</p> <p>Item H - The SSMP does not include a list of collection system locations subject to FOG blockages. This list will be included by August 31, 2017.</p>			

Element 8 – System Evaluation and Capacity Assurance Plan		Yes	No
A	Does the System Evaluation and Capacity Assurance Plan evaluate hydraulic deficiencies in the system and provide estimates of peak flows associated with conditions similar to those causing overflow events, if applicable?	X	
B	Does the District’s capital improvement program (CIP) establish a schedule of approximate completion dates for both short-term and long-term improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment?	X	
C	Does the District take steps needed to establish a short and long-term CIP to address hydraulic deficiencies, including prioritization, alternatives analysis, and schedules? Are repair and replacement projects developed based upon condition assessment and/or field maintenance results?	X	
<p>Discussion:</p> <ul style="list-style-type: none"> • General - The City is in the process of developing a comprehensive wastewater master plan, which includes an updated collection system component. The updated wastewater master plan will be finalized prior to the 2019 SSMP audit. • Item B - The most current CIP will be included in the Appendix to this section by August 31, 2017. 			

Element 9 – Monitoring, Measurement, and Program Modifications		Yes	No
A	Does the District maintain relevant information that can be used to establish and prioritize appropriate SSMP activities?	X	
B	Does the District monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP?	X	
C	Does the District assess the success of the preventive maintenance program?	X	
D	Does the District update program elements, as appropriate, based upon monitoring or performance evaluations?	X	

Element 9 – Monitoring, Measurement, and Program Modifications		Yes	No
E	Does the SSMP identify and illustrate SSO trends, including frequency, location and volume of SSOs?	X	
<p>Discussion:</p> <p>The SSMP monitors specific indicators on an annual basis. The SSMP performance indicators are included through 2014 only. Performance relative to these indicators in 2015 and 2016 will be added by August 31, 2017.</p>			

Element 10 – SSMP Audits		Yes	No
A	Does the audit focus on the effectiveness of the SSMP? If not, what needs to be changed to increase the effectiveness of the overall collection system program?	X	
B	Were the audit results shared with the District Board? And the public, via the District website?	X	
C	Will the SSMP Audit be completed, reviewed, and filed as an Appendix to the SSMP on a biennial basis?	X	
D	Do any proposed changes to the SSMP require Board approval as they have a substantial change in the policies and procedures for collection system operations and maintenance?		X
<p>Discussion:</p> <p>Item B – The results of this audit will be shared with the City Council via verbal staff/manager’s report in summer 2017.</p> <p>Items B, C - The audit will be included as an Appendix to this section, and the updated audit will be posted on the City’s website.</p>			

Element 11 – Communication Program		Yes	No
A	Does the District communicate on a regular basis with the public and other agencies about the development and implementation of the SSMP? Does the communication system provide the public the opportunity to provide input as the program is developed and implemented? Were annual progress reports and metrics of implementation of the SSMP provided to the District Board?	X	
<p>Discussion:</p> <p>Changes to the SSMP are recorded in the change log and posted on the website. Results from this audit will be communicated to the public and Council at a regularly scheduled Council meeting.</p>			

Change Log		Yes	No
A	Is the SSMP Change Log current and up to date?	X	
<p>Discussion: The SSMP Change Log will be updated by August 31, 2017, to reflect the updates that are discussed in this SSMP audit.</p>			

City of San Mateo

2019 SSMP Biennial Audit Report

Date of Audit:	<i>From:2017</i>	<i>Through:2018</i>
Prepared by:	Vivian Housen, V. W. Housen & Associates	
Reviewed by:	Tony Baltodano, City of San Mateo	

Introduction		Yes	No
Is the current system description complete and up to date? Are all infrastructure statistics current and complete?			X (See notes)
Discussion: 1. Update population estimate to 2019 values 2. Confirm that the PWD organization has not changed since 2012			
Element 1 – Goals		Yes	No
A	Are the goals stated in the SSMP still appropriate and accurate?	X	
Discussion:			

Element 2 – Organization		Yes	No
A	Is the Contact Information current?	X	
B	Is the Sanitary Sewer Overflow Responder List current?	X	
C	Is the Organization Chart in Figure 2-1 of the SSMP current?	X (note 1)	
D	Are the position descriptions an accurate portrayal of staff responsibilities?	X	
E	Is the chain of communication for reporting and responding to SSOs accurate and up-to-date?	X	
<p>Discussion:</p> <ol style="list-style-type: none"> 1. The organization chart for the Environmental Services Department is Figure 2-2 of the SSMP. 2. The items listed above were updated in March 2019. 			

Element 3 – Legal Authority		Yes	No
Does the SSMP contain current references to the City’s Code documenting the City’s legal authority to:			
A	Prevent illicit discharges?	X	
B	Require proper design and construction of sewers and connections?	X	
C	Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City?	X	
D	Limit discharges of fats, oil and grease?	X	
E	Enforce any violation of its sewer ordinances?	X	
F	Were any changes or modifications made in the past year or since the last SSMP audit to City Ordinances, Regulations, or standards?		X
<p>Discussion:</p> <p>There have been no changes to the City’s sewer-related ordinances since the prior audit period. The current ordinances provide sufficient authority to enable City staff to properly manage the collection system.</p>			

Element 4 – Operations and Maintenance		Yes	No
Collection System Maps			
A	Does the SSMP reference the current process and procedures for maintaining the City’s sanitary sewer system maps?	X	
B	Are the City’s wastewater collection system maps complete, current, and sufficiently detailed?	X	
Prioritized Preventive Maintenance			
C	Does the SSMP describe current preventive maintenance activities and the system for prioritizing the cleaning of sewer lines?	X	
D	Based upon the SSO information in CIWQS and the Annual SSO Report, are the City’s preventive maintenance activities sufficient and effective in minimizing SSOs and blockages?	X (See Note 1)	
Rehabilitation and Replacement Program			
E	Is there an ongoing condition assessment program sufficient to rank the condition of sewer pipes and schedule rehabilitation? Are the current components of this program documented in the SSMP?	X	
F	Does the rehabilitation and replacement plan include a capital improvement plan that addresses proper management and protection of the infrastructure assets? Does the plan 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?	X	
Contingency Equipment and Replacement Inventory			
G	Does the SSMP list the major equipment currently used in the operation and maintenance of the collection system?	X	
H	Are contingency equipment and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?	X (see Note 2)	
Training			
I	Are the training records current?	X (see Note 3)	
J	Does the SSMP document current training expectations and programs?	X	

Element 4 – Operations and Maintenance		Yes	No
Discussion:			
1. Element 9 discusses how performance metrics demonstrate effectiveness of the City’s sewer management program.			
2. Although the City has sufficient contingency equipment and replacement parts, a list of this equipment and parts is not included in the SSMP. The lists will be added to the Element 4 Appendices by September 2019.			
3. Element 4 is an effective tool for use in summarizing, guiding, and communicating the City’s sewer maintenance approach.			

Element 5 – Design and Performance Standards		Yes	No
A	Does the SSMP reference current design and construction standards for the installation of new sanitary sewer systems, pump stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?	X	
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?	X	
Discussion:			
Design and performance standards are sufficient and have not changed since the prior audit.			

Element 6 – Overflow and Emergency Response Plan		Yes	No
A	Does the City’s Overflow Emergency Response Plan (OERP) contain proper notification procedures so that the primary responders and regulatory agencies are informed of all sanitary sewer overflows (SSOs) as required by the WDR and MRP?	X	
B	Does the OERP have a program to ensure an appropriate response to all overflows?	X	
C	Does the OERP contain procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities of all SSOs that potentially affect public health or reach waters of the State in accordance with the MRP? Does the SSMP identify the officials who will receive immediate notification of such SSOs?	X	

Element 6 – Overflow and Emergency Response Plan		Yes	No
D	Are staff and contractor personnel aware of and appropriately trained on the procedures of the OERP?	X	
E	Does the OERP contain procedures to address emergency operations such as traffic and crowd control and other necessary response activities?	X	
F	Does the OERP 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 SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge?	X	
G	Considering SSO performance data, is the OERP effective in handling SSOs in order to safeguard public health and the environment?	X	
H	Is the Water Quality Monitoring Plan current and has it been trained on and practiced by staff that would be involved in a SSO of large volume?	X	
I	Was sampling conducted within 48 hours for all SSOs greater than 50,000 gallons and were results entered for these SSOs through the CIWQS website?	X	
J	Has the City prepared a Technical Report for all SSOs larger than 50,000 gallons? Have all Technical Reports been filed on the CIWQS website as required?	X	
<p>Discussion:</p> <ol style="list-style-type: none"> The O&M program is a complete and effective tool for documenting, guiding, and communicating emergency response activities, and has not had substantive changes since the prior update. Contact information changes and other minor updates were made in March 2019. 			

Element 7 – Fats, Oils, and Grease (FOG) Control Program		Yes	No
A	Does the Fats, Oils, and Grease (FOG) Control Program include a description of public education outreach efforts that promote proper handling and disposal of FOG?	X	
B	Does the FOG program include a plan for the disposal of FOG generated within the sewer system service area?	X (see Note 1)	
C	Does the City have sufficient legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG?	X	
D	Are there requirements to install grease removal devices (such as traps or interceptors), best management practices (BMP) requirements, record keeping, maintenance requirements and reporting requirements established in the City’s FOG Control Program?	X	
E	Does the City have authority to inspect grease producing facilities and have sufficient staff to inspect and enforce the FOG ordinance?	X	
F	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?	X	
G	Does the FOG control program implement source control measures for all sources of FOG discharged to the collection system?	X	
H	Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system?	X	

Discussion:

1. The FOG program discusses how FSEs dispose of grease via private contractor. However, the program does not list a schedule for grease disposal. The SSMP will be amended by September 2019 to include Table 7.10.I listing FSEs and their inspection/grease disposal schedules.
2. The FOG program is an effective tool for reducing FOG-related SSOs, as indicated by the metrics discussed in Element 9.

Element 8 – System Evaluation and Capacity Assurance Plan		Yes	No
A	Does the System Evaluation and Capacity Assurance Plan evaluate hydraulic deficiencies in the system and provide estimates of peak flows associated with conditions similar to those causing overflow events, if applicable?	X	
B	Does the City’s capital improvement program (CIP) establish a schedule of approximate completion dates for both short-term and long-term improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment?	X	
C	Does the City take steps needed to establish a short and long-term CIP to address hydraulic deficiencies, including prioritization, alternatives analysis, and schedules? Are repair and replacement projects developed based upon condition assessment and/or field maintenance results?	X	
<p>Discussion:</p> <p>The City has and follows a thorough and descriptive Capacity Assurance Plan that is documented in the Wastewater Master Plan. The Capacity Assurance Plan is specifically designed to eliminate SSOs resulting from wet weather events up to and including the designated design storm.</p>			

Element 9 – Monitoring, Measurement, and Program Modifications		Yes	No
A	Does the City maintain relevant information that can be used to establish and prioritize appropriate SSMP activities?	X	
B	Does the City monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP?	X (see Note 1)	
C	Does the City assess the success of the preventive maintenance program?	X (see Note 1)	
D	Does the City update program elements, as appropriate, based upon monitoring or performance evaluations?	X	
E	Does the SSMP identify and illustrate SSO trends, including frequency, location and volume of SSOs?	X	

Element 9 – Monitoring, Measurement, and Program Modifications		Yes	No
Discussion:			
<ol style="list-style-type: none"> 1. The City’s SSMP does not include specific language linking listed metrics to success of the sewer management program. This language will be added by September 2019. 2. In addition, during the 5-year update, this section will be reorganized to include subsections that follow the individual requirements of the WDR requirements. 3. The City’s performance metrics are effective in evaluating the effectiveness of the City’s sewer management program. 			
Element 10 – SSMP Audits		Yes	No
A	Does the audit focus on the effectiveness of the SSMP? If not, what needs to be changed to increase the effectiveness of the overall collection system program?	X	
B	Were the audit results shared with the City Council? And the public, via the City website?	X	
C	Will the SSMP Audit be completed, reviewed, and filed as an Appendix to the SSMP on a biennial basis?	X	
D	Do any proposed changes to the SSMP require Board approval as they have a substantial change in the policies and procedures for collection system operations and maintenance?		X
Discussion:			

Element 11 – Communication Program		Yes	No
A	Does the City communicate on a regular basis with the public and other agencies about the development and implementation of the SSMP? Does the communication system provide the public the opportunity to provide input as the program is developed and implemented? Were annual progress reports and metrics of implementation of the SSMP provided to the City Council?	X	
Discussion:			

Change Log		Yes	No
A	Is the SSMP Change Log current and up to date?	X	
<p>Discussion:</p> <p>The Change Log was updated in March 2019, and will updated again in September 2019 after the changes discussed in this audit are completed.</p>			