

SEWER SYSTEM MANAGEMENT PLAN

INTERNAL AUDIT

AUDIT PERIOD: 2018 THROUGH 2020

WDID: 2SSO10167

Reviewed and certified by:

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Prepared in Consultation with:
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Legally Responsible Official Certification:

I/We certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Kathleen Yurchak, Director of Operations and Water Utilities

Legally Responsible Official



Daniel Repp, Managing Director of Utilities and Environmental Services

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Acronyms

CC	Causey Consulting
CCTV	Closed Circuit Television
CIP	Capital Improvement Program
City	City of Pleasanton
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
CSA	County Service Area R-1967-1 Castlewood
DS	Data Submitter
DSRSD	Dublin San Ramon Services District
DWQ	Department of Water Quality of the State Water Resources Control Board
ESD	Environmental Services Division
FOG	Fats, Oils and Grease
FSE	Food Services Establishment
FTE	Full Time Employee
GIS	Geographic Information System
JPA	Joint Powers Agreement
LAVWMA	Livermore-Amador Valley Water Management Agency
LRO	Legally Responsible Official
MRP	Monitoring and Reporting Program
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OERP	Overflow Emergency Response Plan
PLSD	Private Sewer Lateral Discharge
PSERP	Pump Station Emergency Response Plan
PS/FM	Pump Station/Force Main
RWQCB	Regional Water Quality Control Board – San Francisco
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow

SSORP	Sanitary Sewer Overflow Response Plan
SWRCB	State Water Resources Control Board
UPC	Uniform Plumbing Code
WDID	Waste Discharge Identification Number - 2SSO10167
WDR	Sanitary Sewer Waste Discharge Requirements
WQMP	Water Quality Monitoring Plan

1.0 Executive Summary

The City of Pleasanton (City) is an enrolled agency under the State Water Resources Control Board (SWRCB) Waste Discharge Requirements (WDR or Order herein) for Sanitary Sewer Systems (Order No. 2006-0003-DWQ) Section D13 (x) and SWRCB Order No. WQ-2013-0058-EXEC the Monitoring and Reporting Program (MRP). Agencies that own or operate more than one mile of a sanitary sewer collection system discharging to a publicly owned treatment plant must be enrolled in the WDR. As a requirement of the WDR, each agency must have a Sanitary Sewer Management Plan (SSMP) that is updated a maximum of every 5 years. Additionally, each agency must also perform an Internal Audit (Audit) of the SSMP every 2 years. These dates are from the City's original SSMP adoption date of August 2008. The Audit assesses the current state of compliance with WDR provisions (including effectiveness of implementation) and identifies needed corrections and/or improvements.

This City Audit covers the calendar years of 2019 and 2020. It also includes the calendar year of 2018 since the previous audit was performed in July of 2018 and thus did not cover the entire year. The Audit is based on the most recent SSMP update prepared in December 2019; documentation provided by City staff; publicly available data sources such as the City website and California Integrated Water Quality System (CIWQS); and meetings, conversations, and interviews with City staff involved in the implementation of the sewer program.

This City Audit found that the current sanitary sewer program has considerable risk and liability for possible enforcement or litigation from a poorly designed and implemented sanitary sewer program even though system overflows are generally few and of small volumes. The program does not fully comply with the WDR or the State Enforcement Office's stated expectations; is substandard when compared to other medium sized sewer programs across California; does not include reasonable performance in terms of operations and maintenance, FOG control, and renewal and replacement of sewer assets; and is secondary to the City's water utility which is more visible to customers and City management. Recent penalties and settlements assessed to other agencies for the economic benefit gained due to lack of a program have ranged from approximately \$50,000 to as high as \$8 million dollars. For a mid-sized agency, the penalties for a lack of a five-year general cleaning program and no formal condition assessment program alone could range from \$500,000 to \$1,000,000. All penalties would be cumulative unless the city could provide evidence of positive reasons why these programs were not being conducted. Additional penalties could be assessed for a lack of a FOG program, lack of a long-term renewal and replacement program, and other deficiencies further discussed in this report.

A summary of the major Audit findings is presented in Section 3. More detailed findings by SSMP Element are presented in Section 4. A complete replacement of the SSMP is recommended to address the findings of this Audit. The City should consider establishing a Work Plan that includes recommended actions to replace the SSMP to achieve compliance with the WDR and improve its implementation. The Work Plan should also include an evaluation of changes to the WDR requirements expected to be adopted by the SWRCB in 2022 and provide recommended

actions for compliance with these changes. The Work Plan should prioritize recommended actions and develop an implementation schedule.

2.0 Background

The City's Audit Team was comprised of the Director of Operations and Water Utilities, the Managing Director of Utilities and Environmental Services, the Utilities Planning Manager, and the Utilities Division Manager in consultation with Causey Consulting pursuant to a Professional Services Agreement dated April 15, 2021.

The Audit was initiated with a Zoom kick-off meeting with the City and Causey Consulting in early June 2021. The meeting discussed the process and requirements for the Audit, a history of City sewage overflow performance results from the CIWQS system, an outline of necessary staff interviews, and a schedule for the completion of the Audit. Prior to the kick-off meeting, Causey Consulting submitted a detailed document request for background information required to support the Audit. In addition to a review of these documents provided by the City, Causey Consulting extensively reviewed the City website, the CIWQS database, and 5 SSO events (see Appendix C) during the Audit period. The Audit Program Checklist (see Appendix B) was used to guide the Audit process including interviews of staff.

In June and July, interviews were conducted of City staff who have roles in implementation of the SSMP and overall sewer program. Table 1 provides a summary of staff interviewed during the Audit and their roles (see Appendix A for a listing of the interview sessions).

Table 1: Audit Participants Interviewed

Participant	Title	SSMP Role
Kathleen Yurchak	Director of Operations and Water Utilities	Audit Team Member. Legally Responsible Official.
Daniel Repp	Managing Director of Utilities & Environmental Services	Audit Team Member. Legally Responsible Official.
Todd Yamello	Utilities Planning Manager	Audit Team Member. Audit Project Manager. Utility Planning.
David Bruzzone	Utilities Planning Manager	Utility Planning.
Danny Ward	Utilities Division Manager	Audit Team Member. Sewer System O&M Manager. CIWQS Data Submitter.
Ryan Ravalin	Chief Utilities Systems Operator	Sewer System O&M Supervisor. CIWQS Data Submitter.
Dan McVey	Utilities Systems Maintenance Supervisor	Sewer System O&M Backup Supervisor. Recently added as CIWQS Data Submitter.

Participant	Title	SSMP Role
William Wang	GIS Coordinator	Manage GIS.
Rita Di Candi	Environmental Services Manager	Manager FOG Program.
Scott Walker	Environmental Compliance Supervisor	FOG Program Supervisor. Recently deleted as CIWQS Data Submitter.
Eric Pristia	Lead Utilities Systems Operator	Sewer System Lead Operator. Recently added as CIWQS Data Submitter.
David Peterson	Lead Utilities Systems Operator	Previous Sewer System Lead Operator. Recently deleted as CIWQS Data Submitter.
Robert Patterson	Lead Utilities Systems Operator	Backup Sewer System Lead Operator. Recently added as CIWQS Data Submitter.
Deston Swift	Utilities System Operator I	Sewer System Field Operator.
Jeremey Venegas	Utilities System Operator I	Sewer System Field Operator.
Thomas McCoy	Utilities System Operator I	Sewer System Field Operator.
Adam Nelkie	Senior Civil Engineer	Manage CIP Program.
Leo Lopez	Training and Emergency Services Manager	Manage Training Program.

Each interview session lasted forty-five minutes to two hours and included prepared questions relative to each group's role and responsibilities under the SSMP. The final question for each group included a request for a list of the strengths, weaknesses and improvements desired for the sewer program. Finally, the field staff were asked to complete a Sanitary Sewer Overflow Response Questionnaire (see Appendix E) to evaluate their understanding of WDR requirements and the City's SSMP. Fourteen completed questionnaires were returned and reviewed by the Audit team.

Following completion of the interview sessions, a meeting of the Audit Team was conducted to discuss the preliminary findings and next steps for completion of the Audit Report. Causey Consulting then completed the working draft of the Audit report that was circulated to the Audit Team for comments and changes along with development of the final conclusions for the report.

Upon final acceptance by the Audit Team, the Audit report was certified by the LROs and sealed by Causey Consulting.

3.0 Major Findings

The purpose of this Audit is to evaluate the current state of compliance of the SSMP and the sewer program with WDR provisions (including effectiveness of implementation) and identify needed corrections and/or improvements. The following are major findings.

Goals

1. The City's sewer program is not implementing some of the goals stated in the SSMP. The City should consider redeveloping the SSMP to reflect actual goals, policies, and procedures that will be actively implemented and not items the City hopes to accomplish in the future.
2. The City should consider redeveloping performance metrics (from SSMP Element 10) that align to specific goals and can be graphically tracked for staff, management, City Council and City customers.

Organization

3. The SSMP needs to be updated with recent organizational changes made including:
 - a. New management and supervisor structure within the Utilities and Environmental Services Divisions.
 - b. Transfer of most SSMP roles from the Environmental Services Division to the Utilities Division.
 - c. Ongoing update of classification titles and job descriptions of the Utilities Division's operators and maintenance workers.
4. The SSMP needs to better define the SSMP roles and responsibilities of supporting staff including the Utility Planning Managers, Engineering Department, Environmental Services Division, GIS Division, Business Services Divisions, Training and Emergency Services Manager, Public Information Officer, Attorney's Office, and Finance Department.
5. Staffing levels are not adequate for a properly managed sewer program complying with the WDR requirements. The City should consider conducting a resource evaluation (internal staffing and/or contract services) for the Utilities Division and Environmental Services Division that includes addressing the following sewer program related items:
 - a. Sewer O&M: The staffing budget in the sewer fund is not adequate to support sewer O&M. In addition, because the water system is also understaffed and more visible to customers and City management, sewer staffing resources (who are cross trained for all utilities) are frequently pulled to perform water system responsibilities and emergencies.
 - b. Castlewood Service Area (CSA): The agreement with Alameda County for the City to provide water and sewer O&M services for the CSA is not sufficiently staffed. As a result, staffing for the City sewer program is frequently pulled to help fulfill the CSA obligations.
 - c. Standby: The Utilities Division currently struggles with after hour callout responses and/or staffing shortages the following workday. Additionally, since one utility operator

is always scheduled on Saturday and Sunday, field staff is down one crew member during Thursday and Friday of each work week.

- d. FOG Program: The program is non-existent at the staff level due to staffing shortages and lack of funding for the program.
6. Utility job classifications require only a Grade 1 CWEA certification at all levels up to the Utilities Division Manager. The City should consider requiring varying levels of collection system certification based on responsibilities within the sewer program.

Operations and Maintenance Program

7. The current sewer system O&M program is not properly described or performed as stated in the SSMP and needs to be updated to include basic information or program descriptions for the O&M of gravity piping, siphons, force mains, manholes, and pump stations.
8. The pipe cleaning program is inadequate and requires updating in the areas listed below:
 - a. Bad-Spot List: Scheduled pipe cleaning only occurs for the bad spot list which makes up 3% of all gravity piping and siphons. The bad spot list adds lines and seldomly removes lines. Development of a defined standard procedure or criteria to add and remove lines from the list is needed. It is necessary to reduce the number of bad spots and/or frequency of required cleaning so resources can be shifted to system wide cleaning.
 - b. System Wide Cleaning: There is no scheduled system wide cleaning for the 97% of gravity piping not on the bad-spot list and for force mains. Cleaning that does occur is usually reactionary and for corrective measures only. This results in no real cleaning frequency for most of the sewer system piping. A formal system wide cleaning and force main cleaning program based upon need must be established.
9. The pipe condition assessment program is inadequate as summarized below:
 - a. CCTV Program: The CCTV inspection program is functionally non-existent and is only used for trouble shooting of system problems. There is no regularly scheduled condition assessment of gravity piping (including manholes), siphons, or force mains to assist with proper cleaning schedules and prioritization of renewal and replacement requirements. To date, the gravity and pressure piping systems have yet to be assessed in their entirety. A formal CCTV program with return frequencies for assessment needs to be established.
 - b. Pipe Condition Rating System: There is no regular use of a formal sewer piping condition rating system such as the Pipeline Assessment Certification Program (PACP) by NASSCO. A formal pipe rating program needs to be established for both structural and O&M (see additional comments on assessment in Element 8, SECAP).
10. The City should consider enhancing the pump station maintenance program as listed below:
 - a. Preventive Maintenance: Enhance pump station maintenance from the current checklist driven program to a formal preventive maintenance program that is at an asset level and driven by CMMS.

- b. Condition Assessment: Establish a formal condition assessment program for pump station facilities and major assets to support prioritization of renewal and replacement.
11. The City should consider evaluating the following items to improve maintenance management:
- a. Workflow: Evaluate existing workflow based upon need for sewer maintenance activities and identify/ implement recommended improvements to establish frequencies for all asset maintenance a renewal.
 - b. Software: Evaluate effectiveness of existing software to support desired workflow (i.e., CMMS, GIS, CCTV) and identify upgrades, replacement and/or additional needed software.
 - c. Planner/Scheduler: Evaluate creation of a position (or assign duties to an existing position) that plans and schedules sewer maintenance activities, upkeeps/improves sewer asset information / databases, and manages vehicles/equipment and materials inventory.
 - d. Vehicle/Equipment Database: Sewer vehicles and equipment, although funded in a designated sewer R&R account, is managed as part of a City-wide database. Sewer information in this database is outdated. The City needs to update sewer information and should consider tracking sewer vehicle/equipment assets in a separate database that is managed by the Utilities Division.
12. Standard Operating Procedures (SOPs) need to be improved in the following areas:
- a. Manual: Establish a formal manual with a table of contents for all approved SOPs. The manual should include a standard SOP format and a procedure for issuing new SOPs and for regular reviewing/updating including a management approval process.
 - b. Redevelopment: Many sewer related SOPs are old, not utilized and have not been updated in many years or are missing for major operating tasks. A redevelopment of sewer SOPs is needed.
13. The sewer training program is functionally non-existent. The City needs to develop a comprehensive and documented training program for sewer employees that is integrated with the overall Operation Services Department training program and includes a matrix of training requirements (i.e., regulatory, SSMP, SOPs, overflow emergency response and documentation, safety, IIPP, etc.), methods (i.e., tailgates, field exercises, core competency evaluations, etc.), and frequency by position classification.
14. City staff does not actively participate in regional and state professional sewer related organizations like BACWA Collection Committee and CASA Collections Workgroup. The City should consider increasing its participation, particularly as current replacement of the WDR is being proposed and considered by the SWRCB.

Overflow Emergency Response Plan (OERP)

15. The current sewer OERP is not fully compliant with the WDR and MRP requirements and requires updating. Major areas to focus on are:
 - a. The OERP needs to establish procedures to assure proper documentation of overflow cause, start times, spilled volumes, recovered volumes, interview information, calculations, and assumptions.
 - b. The OERP, and particularly the Water Quality Monitoring Program, needs to be updated to be consistent with actual City operating procedures and assignment of duties.
 - c. Consider developing two documents for the OERP: 1) a document that describes the policies and procedures of the plan; 2) a workbook that is carried in response vehicles, used for individual overflow events, and contains all flow charts, checklists, forms to assist in proper response and documentation.
 - d. Consider having the OERP require procedures for a debrief/failure analysis after each SSO.
 - e. Consider obtaining opinion from legal counsel on the current procedure of loading “all” individual overflow event files to CIWQS which remains in the database indefinitely versus the WDR 5-year retention requirement for local storage.
16. Consider the development of individual pump station / force main emergency response and resiliency plans.
17. Consider making updated sanitary and storm plat books available in City emergency response vehicles or implement mobile access to GIS mapping.
18. Consider evaluating actions and procedures to reduce the predominance of Category 1 overflows.

FOG Program

19. The City needs to evaluate all pipe on the Bad-Spot List to determine which are impacted by FOG. Evaluation should include field inspections of applicable FSEs, pipe condition assessments, and pipe cleaning. Enforcements on FSEs and adjustments to maintenance procedures should occur based on findings.
20. The current FOG program is nonexistent and not supported as stated in Municipal Code Section 15.44 nor as described in Element 7 of the SSMP due to a lack of staffing resources. The City needs to perform an evaluation that includes the following:
 - a. Determine if FOG is a problem and thus requires implementation of a FOG program. If not, remove requirements from the Municipal Code.
 - b. Determine resources (internal staffing or contract services) required to fully support the FOG program including staffing, public outreach, permitting, inspection, record keeping, reporting, enforcement, etc.
 - c. Determine funding required to operate program and establish annual permitting including fees. Revise the Municipal Code to eliminate the “no permit fee” provisions for regular inspections.

System Evaluation and Capacity Assurance

21. A hydraulic assessment of sewer capacity was last performed in 2007 and is outdated. The City needs to prepare a new sewer capacity study (including development of a new hydraulic model) to identify any capacity related issues and determine recommended improvements.
22. The City does not have a formal sewer system renewal and replacement program supported by condition assessment. The City needs to establish a program with the following major areas of focus:
 - a. Asset Inventory: Update inventory of all sewer assets including gravity piping, siphons, force mains, manholes, and major pump station equipment. Document formal procedures for field staff and Engineering Department to update asset information after field work and construction projects.
 - b. Condition Assessment: Refer to the Operations and Maintenance Program section for major findings related to condition assessment. Consider utilizing contracting methods for condition assessment of the complete system (at least initially and at least for critical assets) to accelerate the process of obtaining an initial set of data and to provide guidance for future condition assessment frequencies by internal staff.
 - c. Prioritization: Establish formal policy and procedures for how to prioritize renewal and replacement of assets that is consistent with industry standards (i.e., risk-based approach).
23. The City's current Capital Improvement Program (CIP) is not developed from formal planning documents and mostly based on staff knowledge/concerns. The City needs to update its CIP to include the following:
 - a. Formal Planning – The CIP should recommend prioritized projects based on updated capacity evaluations, a renewal and replacement program, and regular operational and regulatory reviews.
 - b. Planning Horizon – The City should consider developing a long-range plan (10 years).
 - c. Funding Sources - The City currently funds the sewer CIP from 421 Sewer Rep (CIP enhancement projects funded via sewer rates) and 422 Sewer Exp (CIP expansion projects funded from connection fees). The City recently established a renewal and replacement fund called 434 Sewer E Repl, but the fund lacks policy. The City needs to establish formal policies for funding and administering this fund in combination with existing CIP funds.
24. The City's last sewer rate study was in 2015. The City has not performed a sewer connection fee study in 30+ years. The City needs to perform both a sewer rate study and sewer connection fee study to establish rates and fees to properly support the sewer operational program, R&R program and CIP. There is concern that financial support from current sewer rates and connection fees may not be adequate once condition assessment and capacity evaluations are performed and prioritized improvements recommended.

SSMP Audits, Updating, and Communication

25. The City has not consistently met the WDR requirements for auditing, updating, and communicating the SSMP. The City needs to implement policy and procedures for the following:
- a. Audits of the SSMP need to be completed every 2 years (even years) from the City's original SSMP adoption date in 2008. Previously used audit report forms are not adequate and should be replaced with an Audit Report similar to this report. The City should consider making the Audit Reports available to the City Council as a formal agenda item. Anticipate that future Audit Reports will likely require LRO certification and submittal to the CIWQS system by SWRCB.
 - b. An SSMP Change Log has not been continuously utilized nor with sufficient detail in-between formal SSMP updates. The log should document all changes since the last SSMP certification by subsection.
 - c. Formal SSMP updates shall be prepared at least every 5 years (next update due in 2023). Consider having all SSMP updates certified and adopted by City Council and not just those with significant changes.
 - d. Have the City SSMP webpage include critical SSMP supporting documents such as Audit Reports, Change Logs, and supporting planning documents.
26. The City should consider the development of a City Council Utility Committee to review and make recommendations on utility programs including the sewer program. This committee can help to elevate the sanitary sewer program and develop an understanding of its needs.

4.0 Specific SSMP Element Findings and Recommendations

Audit Conduct

As specified in the WDR, the SSMP is to include eleven (11) Elements and an SSMP Change Log. The requirements are stated in Section D.13 of the WDR as follows:

Table 2: WDR Reference Section and Element Headings

Element No.	WDR Reference Section	Element Heading
		Introduction
1	D.13.i	Goals
2	D.13.ii	Organization
3	D.13.iii	Legal Authority
4	D.13.iv	Operation and Maintenance Program
5	D.13.v	Design and Performance Provisions
6	D.13.vi	Overflow Emergency Response Plan
7	D.13.vii	FOG Control Plan
8	D.13.viii	System Evaluation and Capacity Assurance Plan
9	D.13.ix	Monitoring, Measurement and Program Modifications
10	D.13.x	SSMP Program Audits
11	D.13.xi	Communication Program
	MRP E3	SSMP Change Log

The Audit focuses on the eleven Elements and the SSMP Change Log as well as the City’s implementation of the sanitary sewer program required by the Order during the three-year audit period. The evaluation of each element below includes a sufficiency rating, findings, and recommendations based on interviews with City staff and review of the SSMP and reference documents. Recommendation(s) have been provided for each of the eleven elements and the Change Log. Findings and recommendations that open with “consider” are provided to enhance the program, while any other recommendations are required or indicate a deficiency in the program in complying with the WDR.

The format for each of the required Element evaluations is as follows:

- Element Title
- Sufficiency Ranking
 - Complies – complies with all objectives
 - Partial Compliance – complies with basic objectives

- Not in Compliance
 - Findings
 - Recommendation(s)

The internal audit must review the SSMP to determine if the activities and programs are consistent with the prohibitions included in California Water Code Section 13050 (m) for nuisances and the provisions in Division 7 of the California Water Code Section and the Statewide General Waste Discharge Requirements for the Sanitary Sewer System.

Audit of the Introduction

Sufficiency: Not Applicable (No WDR requirements)

Findings:

- No cover page noting original SSMP adoption on August 22, 2008, subsequent SSMP adoption dates, and WDID.
- References to San Francisco RWQCB requirements no longer applicable.
- WDR title is not correct on page 2.
- No Pipe Material table (was included in previous SSMP versions) or Pipe Age table included.
- No description of WDID for Castlewood County service area (CSA) (R-1967-1 CSA) (2SSO18112) included.
- No discussion of the City of Livermore Water Reclamation Plant for treatment of Ruby Hills service area sewage.
- No service area map identifying discharge locations or satellite areas served.
- Asset information requires updating for additions during the audit period.
- No definition of the WDID acronym.
- SSMP Audit Report Form no longer acceptable.
- No list of the SSMP Change Log on page 1.
- No list of the attachments, figures or tables.
- The City is NOT “maintaining and improving the conditions of the collection system” during the audit period as stated.

Recommendations:

- Regularly update the SSMP Change Log at least annually with sufficient Element subsection and descriptions to assure understanding of the change.
- The CIWQS asset information should be updated by the LRO regularly with any new pipe information by the LRO.
- Update all Definitions, Acronyms, and Abbreviations used in the SSMP.
- Consider adding a cover page with basic SSMP information, WDID number and adoption information of all SSMP governing board approvals.
- Consider adding the SSMP change log to the Table of Contents along with appendices for adoption documents, audit reports and change log or OERP and WQMP documents.

- Consider completing all sewer asset information in the two tables in the Introduction and add a third Pipe Age table along with a date for the information presented.
- Consider adding additional tables for pump stations, force mains and siphon basic asset information in the Introduction.
- Consider adding information regarding the Castlewood contract service provision.
- Consider adding a service area map identifying all treatment service areas and the Castlewood service area.
- Consider tracking annual new pipe additions and pipe replacements and include in all Audit Reports.

Element I: Audit of Goals – Order D.13.i

Review the SSMP to determine if it complies with the Order by having goals to provide plans to manage, operate, and maintain all parts of the City Sanitary Sewer System.

Sufficiency: Complies

Findings:

- No reference of the Ruby Hills sewer area and its discharge to the City of Livermore Water Reclamation Plant.
- Maintain and repair goal not currently being met.
- The goal to comply with State regulations is not met as the current sanitary sewer program is not effective and implemented according to stated Goals in the SSMP.
- All parts of the sanitary sewer system are not managed to minimum industry standards or properly funded with a prioritized program for maintenance and renewal and replacement.
- According to staff interviews, most SSOs are due to FOG problems but there have been no evaluations of why or what can be done to prevent these FOG related SSOs.
- The sewer program is not equally prioritized to the needs of the water program.
- Goal 3 of the City General Plan not being met with the current program – “responsible financing and construction to preserve and enhance public facilities”.

Recommendations:

- I.1: Assure goals are well supported by performance metrics in Element 10.
- I.2: Revise goals to include reference to both City of Livermore Water Reclamation Plant and Castlewood responsibilities.
- I.3: Revise maintenance goals to that of a typical maintenance level of effort for a median sized sewer program.
- I.4: Raise the level of sewer program to that of the water program or higher.
- I.5: Consider removing future goals.
- I.6: Consider reviewing and modifying goals so that they reflect what the City can realistically accomplish.

Element II: Audit of Organization – Order D.13.ii

Review the SSMP to determine if it complies with the Order by having the names of authorized representatives published and updated in the SSMP.

Sufficiency: Partial Compliance

Findings:

- Information in this Element does not conform to the WDR Requirements listings.
- Table 2.1 does not reflect new position classifications or the WDR designated officials.
- Table 2.1. does not include the SSMP Change Log as required by MRP Section E3.
- Figure 2-1 does not contain current classification titles.
- Table 2.2 information outdated and requires new classification titles.
- The roles and responsibilities of the Environmental Services Division are not as currently stated in this Element.
- No complete list of service contractors used in the sewer system program.
- No flow chart for the chain of communications for emergency response or reference to specific information in the OERP (SSORP).

Recommendations:

- II.1: Revise / rewrite Element 2 to follow the three required Sub elements from the WDR.
- II.2: Revise Figure 2-1 and Table 2-1 with correct classification titles and with designated officials and include all departments, divisions and service contractors that support the sewer program.
- II.3: Revise the Description of General Responsibilities section for current classification titles.
- II.4: Add a new emergency response flow chart to the last section of this Element.
- II.5: Define clear rolls and responsibilities as it related to the SSMP for the Utility Planning Managers, Environmental Services Division, Business Services Division, Training and Emergency Services Manager, Engineering Department, GIS Division, Public Information Officer, Attorney’s Office, and Finance Department.
- II.6: Consider requiring varying levels of CWEA collection system certification based on responsibilities in the sewer program.
- II.7: Consider adding a description of service contractors used by the City in the sewer program.
- II.8: Consider conducting a sewer program resources evaluation to determine proper staffing levels at least for the Utilities Division O&M staff and Environmental

Services Division as it is apparent that there are significant staffing limitations currently.

- II.9: Consider adopting an organizational structure with specific crew assignments for only sewer maintenance to assure completion of maintenance goals and activities.

Element III: Audit of Legal Authority – Order D.13.iii

Review the SSMP to determine if it complies with the WDR by having ordinances and agreements in place and updated to prevent illicit discharges, provide for proper design of upstream facilities, provide right of way and access to the Collection Systems, and a mechanism to enforce Ordinances.

Sufficiency: Complies

Findings:

- No discussion of the DSRSD and Livermore source control program requirements on commercial and industrial dischargers in the City.
- No discussion of Ruby Hills service area tributary to the City of Livermore Water Reclamation Plant.
- No statements of the County of Alameda requirements for the operation of the Castlewood CSA.
- No listing of the Uniform Building Code (UPC) requirements in Table 3-1 for FOG Program.
- FOG program properly defined in the municipal code but not being implemented or used as stated especially for FSEs due to lack of proper staffing levels – See Element 7 for addition findings and recommendations.
- Several references to City ordinances which are already included in the Municipal Code.
- No Municipal Code changes for Title 15 were completed during the Audit period.
- Paragraph on I/I, following Table 3-1 is not required.
- No discussion of the agreements with the County of Alameda for the Castlewood service area or the LAVWMA Joint Powers Agreement (JPA) for treated wastewater disposal.

Recommendations:

- III.1: Revise and add more specific information on the various wastewater treatment and disposal agreements with other agencies.
- III.2: Revise Table 3-1 to include the Uniform Plumbing Code (UPC) authorities and treatment agency source control program authorities.
- III.3: Implement the FOG Control program as currently defined and properly staff the program or remove requirements from the Municipal Code.
- III.4: Consider adding information on the Castlewood Service Area satellite services agreement with the County of Alameda.
- III.5: Consider removing description of the I/I to the sewer system and from private laterals.

Element IV: Audit of Operation and Maintenance Program – Order D.13.iv

Review the SSMP and activities of staff, consultants and contractors to determine compliance with the Order by having (a) an up to date map of the City sanitary sewer collection system that shows all pipe reaches, manholes, siphons, diversion structures, and laterals, (b) a routine preventative maintenance program and operations program, rehabilitation and replacement program, (c) operations and maintenance training program, and (e) part inventory program including identification of critical replacement parts.

Sufficiency: Not in Compliance

Findings:

- Recent personnel additions and job classification changes of the Managing Director of Operations and Environmental Services, Utilities Division Manager, Utilities Planning Managers, Chief Utilities Systems Operator and Utilities Systems Maintenance Supervisor are a positive addition.
- Hard copy maps of City linear assets are available in the office and if needed in the field can be provided or made available by being delivered to the crews.
- Some mapping information is available on phones carried by the field crews, but connectivity is spotty and frequently unavailable.
- The sewer GIS mapping system supports a broad range of important asset information but is incomplete. All necessary sewer asset information is not currently available in the GIS or CMMS systems – estimated to be 50% plus.
- Regular updates to the GIS system occur monthly based on information provided by the Engineering Department or Utilities Division.
- 3% of gravity sewers are on the bad spot list and have cleaning frequencies that vary from monthly, quarterly, and annually. The bad spot list also includes regular siphon and wet well cleaning.
- The bad spot list seldomly removes lines from the list and only adds new lines when system issues are found or when an SSO occurs.
- The bad spot lines have not been evaluated for either structural or O&M purposes to determine why these lines require such frequent maintenance, especially the monthly segments.
- The current FOG program does not support the bad spots list cleaning program as it should be designed to do.
- There is no well-defined or timely sewer cleaning program for sewer assets not designated on the bad spot list (i.e., no System Wide Cleaning program). Any cleaning that does occur is more corrective or reactive to a problem (referred to as such in the SSMP) and

seldomly occurs. City staff states they generally only clean lines 10 inches and smaller. The entire sanitary sewer system has never been completely cleaned.

- There is no cleaning of force mains.
- Staff has not had adequate cleaning equipment or staffing for a properly managed maintenance program. Staff has received some new equipment recently including the new CCTV equipment and the imminent purchase of a new flusher unit.
- The City does not have a comprehensive condition assessment program for all gravity pipelines, manholes, siphons, force mains and pump stations.
- System Wide Cleaning and CCTV performance are well outside the norm for sanitary systems the size of the City. No regular performance results are tracked for the maintenance program activities.
- Sewer staff are continually pulled from the sewer maintenance program to support other utility functions and emergencies.
- There is no discussion in the SSMP of the asset information and regular maintenance of the 11 siphons in the sewer system even though they are included in the bad spots monthly procedures.
- The eleven siphons have never been condition assessed or evaluated. General maintenance of these assets is not properly rated or documented using PACP in the CMMS system.
- Table 4-1 is outdated and requires additional data for the audit period.
- The staff completes regular maintenance reports and documentation for the eleven pump stations.
- There is no significant asset information for the 11 pump stations in CMMS or GIS.
- Historical pipe age is questionable as the oldest pipe dates to only 1954 even though the City utility systems have existed since 1894.
- There is no clear responsible position for the management of the MaintStar CMMS system. This system is not currently effective as a maintenance management system for the sewer program.
- The current CMMS system is used only to document work activities. It is not used to schedule cleaning and condition assessment or for pump station preventive maintenance at an asset level.
- There is not a single personnel classification responsible for the scheduling and planning of sewer maintenance programs.
- Element 4 does not list the major service contractors used in the sewer program.
- The sewer utility lacks portable pumps for emergency response and portable engine generators for the sewer pump stations for power outages.

- There was no prioritized renewal and replacement program policy or philosophy utilized during the audit period.
- There is no description of the fund structure for the sewer program other than an enterprise fund.
- The City has recently adopted a four-year capital program to spend approximately \$18 million on the sewer system but has no long-range capital plan based upon system structural ratings and field conditions.
- The latest rate study was completed in 2015 and is outdate and does not support a typical sewer maintenance program of full system cleaning, maintenance and condition assessment of all sewer assets.
- The City Finance Department is evaluating a new sewer rate study that must include Utilities Planning Managers input.
- Field staff are not informed or trained on the WDR, MRP or the SSMP requirements of the SWRCB.
- General line crew training is limited and does not include regulatory requirements on the sewer system.
- The current training and tailgate programs require better coordination between Utilities, Environmental Services and Business Services to improve effectiveness.

Recommendation:

- IV.1: A complete revision of this element is necessary to be compliant with the WDR.
- IV.2: Conduct a time and motion study of the full sewer program to determine needed staffing levels or contractor assistance.
- IV.3: Evaluate adding a sewer system scheduler planner position to work closely with the GIS Coordinator to improve the sewer asset information and to develop a proper system cleaning program based upon condition assessment and cleaning ratings from field crews on a pipe section by pipe section basis.
- IV.4: Establish an emergency response team for all utility emergencies and only involve sewer designated employees when necessary.
- IV.5: Consider providing sewer and storm assets field plat books in vehicles until electronic information can be developed and deployed in City vehicles.
- IV.6: Evaluate the usefulness of the CMMS program (MaintStar) and determine if it can be fully utilized or needs to be replaced with something more user friendly and efficient for all staff.
- IV.7: Immediate sewer system master planning should include at a minimum condition assessment of all bad spot lines if not the entire system for the first time. This will

- inform both an improved cleaning program based upon need and assist with the definition and prioritization of the sewer renewal and replacement program.
- IV.8: Define a pump station and force main operation and maintenance program and condition assessment requirements. Expand the current pump station checklist to include force main evaluations at least annually (see sample form in Appendix F).
- IV.9: Establish a manhole condition assessment and maintenance program including assessment return frequencies.
- IV.10: Assess the condition of the 11 siphons and determine if repairs or improvements can be made to reduce the maintenance frequency from monthly.
- IV.11: Develop a defined asset replacement prioritization procedure for all linear assets and pump stations in the sewer program.
- IV.12: Define an operating procedure for the addition and removal of lines from the “bad spot” program.
- IV.13: Define a program, timeline and staff or consultant costs to complete the asset inventory of all sewer assets in GIS and require field crews to regularly report missing asset information following field work on assets.
- IV.14: Evaluate needs for additional portable pumps and generators in the sewer program.
- IV.15: Establish an SOP Procedures manual for sewer SOPs. Eliminate, add, and/or update existing SOPs and follow a SOP format including date of procedure, approved by and place for updates to assure use of most current SOP.
- IV.16: Develop a comprehensive and well-coordinated training program for sewer program employees including a matrix by position classification and return frequency of the training to include regulatory background, sewer program SSMP and SOP procedures, safety requirements and IIPP necessary training.
- IV.17: Raise the priority of sewer projects during the capital planning processes and prioritization processes.
- IV.18: Consider and evaluate the use of field mounted electronic equipment that allows field staff to have maps (of at least sanitary and storm) and work order information in the field especially for emergency response.
- IV.19: Consider assigning designated staff for regular sewer operations and maintenance and do not allow these positions to be pulled from their work for water system demands or emergencies.
- IV.20: Consider adding a GIS layer for the Ruby Hills service area that discharges to Livermore.
- IV.21: Consider expanding the capital program planning to ten years annually based upon a defined renewal and replacement prioritization procedure.

- IV.22: Consider development of a program to build and improve core competencies of all Utilities employees.
- IV.23: Consider the development of individual pump station and force main emergency response plans (PSERP) and standard operating procedures.
- IV.24: Consider expanding the description of service contracts used in the sewer program.
- IV.25: Consider developing annual performance goals based upon staff capabilities and annually track and graph performance results for staff, management, and the City council.

Element V: Audit of Design and Performance Provisions – Order D.13.v

Review the SSMP to determine if it complies with the Order by having design and construction standards and specifications for installation of new facilities, including coverage for testing of new facilities prior to acceptance.

Sufficiency: Complies

Findings:

- City standards and details listed are most current November 2016.
- Caltrans standards do not state which version or “most current” version. Current 2015 version no longer supported by Caltrans. Most current is 2018.
- Section 13 of the City standards only applicable up to 15” diameter pipe.

Recommendation:

- V.1: Include a discussion of standards and details for large diameter pipe in this Element.
- V.2: Revise Caltrans standards to clarify what version is to be utilized – 2018 or most current version - is this the Green Book standard?
- V.3: Add information for the design and construction standards for City sewage pump stations and force mains.

Element VI: Audit of Overflow Emergency Response Plan – Order D.13.vi

Review the SSMP to determine if it complies with the Order by having an overflow emergency response plan that includes (a) proper notification procedures, (b) a program that assures proper response to all overflows, (c) procedures that ensure prompt notification of regulatory agencies and other affected entities, (d) proper procedures and training for staff and contractors named in the response plan, (e) procedures to address traffic control and crowd control, and, (f) implementation of steps to prevent SSOs from reaching waters of the United States.

Sufficiency: Partial Compliance

Findings:

- The Element is titled SSORP not OERP as stated in WDR Section D13(vi).
- The Element is composed of both an SSORP and a WQMP for sampling and monitoring of overflows greater than 50,000 gallons.
- SSO Response Report Form (Attachment B) was updated during the audit period but does not include all necessary information for complete documentation of the overflow event.
- There was consistent documentation prepared for each of the five overflow events reviewed but the documentation was not consistent with the SSORP requirements nor provided complete documentation of the events.
- Many classification titles in this Element have been changed recently and the Element has not been updated to conform to the new titles and responsibilities.
- Notification group not defined in the Element and includes a retired employee on the SSO form.
- Element does not reflect the changes in the role of Environmental Services Division recently.
- Subsections do not have separate numbering.
- Claims processes has recently changed and the Claim Form (Attachment A) and procedures are no longer applicable for field staff.
- Start times and all volume computations not properly documented and do not include any assumptions or calculations made for all final volumes or actual calculations.
- Table 2-2 outdated and does not include current classification titles.
- Table 6-1 outdated and includes retired employees and is missing new employees.
- Emergency response efficiencies can be improved with sanitary and storm plat books available in the field.

- Staff indicates that they did not voluntarily report PLSDs during the audit period and have not since 2013 according to CIWQS database.
- Field staff and supervisors interviewed indicated that they had never read the SSORP.
- Event files do not include copies of the draft and certified CIWQS report nor the certification email from the SWRCB.
- CIWQS reports complied with the reporting deadlines in the MRP.
- The Element's Records Section needs expansion and inclusion of the records to be retained in a properly documented event file (see sample SSO Checklist in Appendix F).
- The LRO has uploaded all City prepared overflow event files and documentation with the CIWQS certified report during the audit period. These files will be available to anyone forever once uploaded not for just the five-year retention period that the WDR requires.
- The Element does not include any description of the required technical report for events greater than 50,000 gallons.
- The SSORP requires notification of the Local Health Department, yet CalOES has been required to handle this notification since 2013.
- Photos and maps of the overflow event were included in the event documentation.
- The sewer system has not experienced large volume overflows due to rapid staff responses.
- The incidences of Category 1 overflows have been the dominate category since 2013 and requires evaluation as to emergency response procedures related to sewage reaching storm drains or water bodies.
- Sewer and Storm system maps are not currently available in the field unless requested from the office and may be one of the reasons for the increases in Category 1 events.
- Staff does not utilize debrief and failure analysis following overflow events for all involved staff to determine if any changes or modifications to response procedures are required.
- General regulatory compliance with the MRP has not been provided to the line staff in the sewer program as they were not able to discuss the SSORP or the many emergency response acronyms during the interviews or from the Overflow Response Questionnaires.
- The Element does not include any discussion of required emergency response training or regular field exercises as required.
- It was reported that the Standby Operator has experienced an inability to obtain additional staff support for overflows after hours, on weekends and holidays due to inability of staff to respond to phone calls for assistance.
- There was very limited SSO related training during the audit period.

- Water Quality Monitoring Program (WQMP) (Attachment D)
 - The WQMP does not contain an approval date or revisions statement nor the person authorizing the approval of the program.
 - No list or map of waters of the United States in the service area is included.
 - Environmental Services Division no longer responsible for sampling and testing as stated.
 - Maps of sample locations were prepared and included in the event documentation
 - WQMP does not include a sample chain of custody form to be completed by the person taking the samples and to the lab for analysis.
 - All samples should be documented on a chain of custody form.
 - The WQMP requires sampling for ten days following a 50,000-gallon event.
 - The City did not experience any 50,000-gallon overflow events during the audit period.
 - Reporting to the Health Department may not be consistent with current MRP requirements or as related to the Environments Services Division.
 - Specify who is the responsible party for the preparation of a Technical Report that the LRO will certify?
 - There is no reference to the RWQCB Basin Plan in the WQMP.
 - The WQMP does not include any training requirements.

Recommendation:

- VI.1: This Element should be completely reformatted and rewritten to comply with the WDR and the MRP and actual Division roles and responsibilities.
- VI.2: Table 6-1 requires updating regularly.
- VI.3: Assure the preparation of a separate event file for each overflow properly labelled with location and event identification number at a minimum.
- VI.4: Assure proper documentation of start times and both spill and recovered volumes including all interview information, assumptions and calculations relied upon.
- VI.5: Expand the SSO Report Form to include all information required by the CIWQS certified reports.
- VI.6: Develop and include training requirements for the OERP and WQMP including at least annual regulatory and field exercise requirements.
- VI.7: Add additional information and description of the Technical Report requirements.
- VI.8: Complete an evaluation of actions and procedures to reduce the predominance of Category 1 overflows.

- VI.9: Make sanitary and storm plat books available in City emergency response vehicles or a dedicated emergency response trailer.
- VI.10: The Standby Program should be evaluated to assure that the Standby Operator can obtain additional support especially after hours, on weekends and holidays for proper overflow event completion.
- VI.11: Consider dropping the use of the term SSORP for OERP throughout the SSMP.
- VI.12: Consider obtaining an opinion from legal counsel regarding the procedures for the uploading of all overflow documentation to CIWQS which does not conform with the five-year retention requirement in the WDR.
- VI.13: Consider the development of an overflow event checklist for documents and records that provide complete documentation of the event.
- VI.14: Consider the requirement for ten days of sampling following any event and determine if this is necessary for all large overflows.
- VI.15: Consider the development of two separate OERP documents – one that describes the processes and procedures and a separate workbook that contains all flow charts, forms and event operational requirements for responding staff – a single workbook for each individual overflow event and carried in response vehicles.
- VI.16: To enhance training, understanding, and uniformity of OERP procedures, consider establishing a debrief/failure analysis with all parties after each overflow event. Include and agenda and follow-up action items from each meeting.

Element VII: Audit of FOG (Fats, Oils and Grease) Control Plan – Order D.13.vii

Review the SSMP to determine if it complies with the Order by having a FOG Control plan with (a) a public education element, (b) FOG disposal facilities identified, (c) ordinances, rules and regulations to prevent FOG, (d) requirements to install FOG devices together with design standards for FOG devices, owner maintenance requirements, BMP requirements, owner record keeping requirements and owner reporting requirements, (e) inspection authority and staffing, (f) FOG mapping for pipe reaches impacted by FOG, and (g) source control measures for sewer sections that are impacted by FOG.

Sufficiency: Not in Compliance

Findings:

- Utilities staff have identified and created regular maintenance of pipes on the bad spots list. Some of these pipes are believed to be on the list because of FOG, but that is not fully documented or assessed.
- There is no FSE permitting program other than for the initial connection to the City sewer system even though a program is required in Municipal Code Section 15.44.030.
- No regular/annual permitting or inspections of FSEs occurred during the audit period.
- FSE inspection did not occur during the audit period due to lack of available staffing.
- FOG program is well defined in the City municipal Code and information documents available to FSEs.
- Semi-annual FSE written records of inspection, maintenance, pumping and hauling activities are not being requested or submitted to the City as required.
- Table 7-1 FSE Inspection and Enforcement is outdated. There was no FOG program activity during the audit period.
- Environmental Services Supervisor not currently involved in the FOG program as stated.
- Municipal Code does not allow for FSE permit inspection fees per MC Section 13.44.070 (3).
- No formal FSE tracking currently available to Environmental Services except through City Business Licenses.
- Number of FSEs stated in Element VII.e. appears to be outdated (400 vs 299 from business licenses).
- Staff interviews indicate that most SSOs are related to FOG and not as stated in this Element or in CIWQS certified reports. It was estimated that as much as 80% of SSOs are FOG related.

- Properly identified FOG related causes of SSOs is necessary to confirm operations staff belief that up to 80% of SSOs are FOG related.
- The bad spots maintenance program described in Element 4 is less efficient or effective without a well-established and functioning FOG program.
- No condition assessment of the bad spot pipe segments (FOG impacted sections) or evaluations of the discharges to the City system in those areas have been completed.
- The FOG program does not currently provide “sound management” as stated.
- No formal process to identify, add or remove FSEs in Environmental Services Division or Utilities Division.
- ESD does not have adequate staffing to support the required FOG program.
- UPC stated in this Element is not included in the Legal Responsibilities Table 3-1 in Element 3.

Recommendations:

- VII.1: Determine if FOG is a problem and thus requires implementation of a FOG program. If not, remove requirements from the Municipal Code. If a FOG program is required, the following recommendations apply.
- VII.2: Evaluate the requirements for additional staff (possible 2 FTEs) to support a fully functioning FOG program including permitting, permit funding and regular FSE inspections and reports as currently required by the Municipal Code.
- VII.3: Establish a proactive FOG program consistent with the Municipal Code provisions.
- VII.4: Initiate a formal FSE annual permitting and inspection program.
- VII.5: Rewrite this Element based on the defined proactive program.
- VII.6: Revise the Municipal Code to eliminate the “no permit fee” provisions for regular inspections.
- VII.7: Establish an annual fee to fund the costs for implementing a FOG program.
- VII.8: Define the roles of the Environmental Services Division and the Utilities Division to support the FOG program and revise the Element appropriately.
- VII.9: Work closely with Utilities operations to identify and evaluate improvements necessary to reduce “bad spot” locations related to FOG issues.
- VII.10: Use proper enforcement provisions to require FSE’s to reduce and eliminate grease discharges to the City sewer system which should reduce operational costs and efficiency.
- VII.11: Complete a comprehensive evaluations of all pipe sections impacted by FOG on the bad spots list including condition assessment, rating of cleaning results, field

inspections of FSEs along these segments and revisions to the maintenance program from all information resulting from the evaluation.

- VII.12: Consider the need for required semi-annual performance reports from FSEs as part of the FOG program.
- VII.13: Consider preparation of an annual FOG Control Report for management including results of maintenance program results and changes and enforcement actions completed.
- VII.14: Consider working with Alameda County Environmental Health, DSRSD, or Livermore for assistance with the FSE permitting and inspection program.

Element VIII: Audit of the System Evaluation and Capacity Assurance Plan – Order D.13.viii

Review the SSMP to determine if it complies with the Order by having a Capital Improvement Plan (CIP) that considers (a) Evaluation of those portions of the sanitary sewer system that are experiencing SSO discharges due to hydraulic deficiency, (b) Design Criteria is reviewed in problem areas and corrective work is performed, (c) Capacity Enhancement Measures and steps to address short term and long term CIP goals and an implementation schedule, and (d) Schedule for completion of the corrective items that were developed in items D.13.viii (a) - (c) above.

Sufficiency: Not in Compliance

Findings:

- The 2007 Wastewater Master Plan is outdated for capacity evaluation purposes and does not include any system additions since its completion. It also does not contain condition assessment ratings of any sewer system assets.
- SSMP nor the Change Log have no references to the updates to the hydraulic model performed in 2013.
- Expansion of the sanitary sewer system has occurred since 2007 due to expansion and annexations to the service area – about half a mile of new system gravity pipes during the audit period.
- The 2007 Wastewater Master Plan and hydraulic model updates are critical supporting documents and should be available on or from the SSMP webpage.
- There is no discussion on what improvements recommended in the 2007 Wastewater Master Plan have been constructed and what are outstanding.
- The City has no effective condition evaluation program for any sewer assets.
- The City has no defined sanitary sewer renewal and replacement prioritization process and has not conducted more than 3% of gravity pipeline inspections annually during the audit period.
- The City Council has just approved a new four-year capital program for the sewer program with total estimated expenditures of approximately \$18 million (includes a roll-over of approximately \$7.5 million from previously funded projects not yet completed).
- A new capacity evaluation and hydraulic model is being planned to take the place of the 2007 Wastewater Master Plan. No scope of work or contract has yet to be issued for this work.
- Better define roles and responsibilities between the Engineering Department and the Utilities Division for system evaluation and capacity management specific to planning, design and construction projects.

- The 2021/22 CIP includes only four (4) years of scheduled projects and no long-term projects as required.
- The City has a four-year capital plan for the sewer program, but it is not prioritized from actual field conditions and structural ratings.
- The City has no defined capital prioritization philosophy or procedures.

Recommendation:

- VIII.1: Complete revision of this Element is required.
- VIII.2: Conduct a full assessment of the “bad spot” lines at a minimum.
- VIII.3: Consider conducting condition assessment of the entire gravity sewer system as a baseline for future assessments and establish a formal capital prioritization standard operating procedure.
- VIII.4: Develop a formal renewal and replacement program supported by condition assessments.
- VIII.5: Complete a sewer system capacity evaluation that includes development of a new hydraulic model.
- VIII.6: Develop a long-range capital plan (5-10 years) for the sewer program that is based on policies/procedures for prioritization.
- VIII.7: Clarify roles and responsibilities with between the Utilities Division and Engineering Department specific to planning, design, and construction.

Element IX: Audit of the Monitoring, Measurement, and Program Modification – Order D.13.ix.

Review the SSMP to determine if it complies with the Order by (a) maintaining relevant information that can be used to establish and prioritize appropriate SSMP activities, (b) monitoring the implementation and, where appropriate, measure the effectiveness of each element of the SSMP, (c) assessing the success of the preventative maintenance program, (d) updating program elements, as appropriate, based on monitoring or performance evaluations, and (e) identifying and illustrating SSO trends, including frequency, location and volume.

Sufficiency: Not in compliance.

Findings:

- The City experienced several retirements or position replacements resulting in a reorganization of the Department along with the reclassification of several position classifications resulting in a new organization structure for the Utilities Division and Environmental Services Division.
- Annual evaluations of effectiveness as stated in this Element were not conducted.
- No evaluation or revisions of the cleaning cycles for any sewers but especially for the “bad spots” has happened during the audit period.
- There is no effective maintenance program for sewer pipeline assets.
- The performance indicators identified in Tables 9-1 and 9-2 are incomplete for 2019 and 2020 and have been updated on the graphs in the Program Performance Results Section.
- The Element does not include any maintenance performance metrics or results.
- Staff does not appear to be tracking the stated performance indicators.
- The City continued to have few SSOs. However, the number of Category 1 SSOs are trended upward during the audit period.
- The City SSO Rate/100 miles/year is well below both the San Francisco Region and the State SSO rates.

Recommendation:

- IX.1: Update all performance results and graphs with each audit as a minimum.
- IX.2: Remove any procedures that will not be accomplished such as annual reviews of effectiveness.

Element X: Audit of the SSMP Program Audits – Order D.13.x.

As a part of the SSMP, City shall conduct periodic audits. At a minimum, these audits must occur every two years from August 2008 and a report must be prepared and kept on file. These audits shall focus on the effectiveness of the SSMP, compliance with Order requirements, identification of any deficiencies and steps to correct them.

Sufficiency: Partially Complies.

Findings:

- No evaluation of system implementation or effectiveness during the audit period or in the Change Log.
- The SSMP Audit Report Form attached to page 56 of the 2019 SSMP is no longer acceptable to the regulators as there is not sufficient details for the required evaluation of effectiveness or statement of deficiencies and improvement steps identified.
- The 2018 SSMP Audit did not discuss the program effectiveness and identified only minor sewer system deficiencies and steps to correct the deficiencies.
- The listing of 2018 SSMP Audit Highlights in this Element are not required and are not consistent with the actual 2018 SSMP Audit report.
- The 2018 Audit Report was not attached to the SSMP as required nor is it available on the City website but was filed with the Environmental Services Manager as stated even though that Division is no longer responsible for WDR compliance.
- The Element does not describe the policies, procedures, schedules and persons responsible for the required internal audits.
- The Change Log does not identify the specific subsections of the SSMP that were modified as required but rather just the full Element designation.
- Audit Reports do not appear to be made available to the City Council or the public unless specifically requested nor are they posted on the SSMP webpage or included as an appendix to the SSMP.
- The 2019 SSMP and the Utilities Organization Chart have not been updated for the recent changes in classification titles as is stated in this Element.
- Field staff were unaware of the 2018 SSMP Audit and the 2019 SSMP update including findings.

Recommendation:

- X.1: The Element requires complete revision to include required information.
- X.2: Properly complete and attach the SSMP Change Log to the SSMP as an appendix.

- X.3: Improve the Change Log by adding subsection numbering in each Element and by specifying the required subsection that is being modified and when and by whom.
- X.4: Complete and certify all required Internal Audits Reports including Council consideration no later than August of each even numbered calendar year.
- X.5: Anticipate that future SSMP audits will require LRO certification and submittal into the CIWQS system.
- X.6: Add the final certified Internal Audit Report to the SSMP webpage or into an SSMP appendix as it is a critical supporting document.
- X.7: Consider requiring the biannual SSMP Internal Audit and Change Log to be made available to the City Council as a formal agenda item at a City Council Meeting.
- X.8: Consider starting an SSMP audit 4 to 6 months prior to the required completion date in August of each even numbered year.

Element XI: Audit of the Communication Program – Order D.13.xi.

Review the activities of staff to determine if they have complied with the Order by (a) communicating the performance of the SSMP with the public and with tributary agencies, and (b) providing the public and the member agencies the opportunity to provide input.

Sufficiency: Complies.

Findings:

- The statements regarding the FOG program are dated and not required
- The 2018 SSMP Audit report hyperlink is not functioning.
- There is no hyperlink to City website where the 2019 SSMP is posted.
- No critical supporting documents available at the SSMP webpage.
- There is no hyperlink to any communications tools related to the sanitary sewer program.
- The SSO reporting hyperlink does not include the City WDID 2SSO10167.
- No communications plan stated for City of Livermore or County of Alameda as it relates to those programs and issues.
- No statement requiring proper documentation (meeting agendas and minutes) for any meetings with tributary or satellite agencies.
- Appears that the only opportunity for public input on the program development and implementation is from community interactions and not from Council information on the program except when SSMP is presented for approval.
- No annual performance report on the results of the sewer program is provided to the City Council.
- The sewer program is not regularly reporting to a Council Committee or to the full City Council.

Recommendation:

- XI.1: Remove references to the Ordinances impacting the FOG program.
- XI.2: Assure that all meetings with tributary or satellite agencies are properly documents with meeting agendas and minutes.
- XI.3: Improve and expand the hyperlinks for critical supporting documents on the webpage and assure that these links work properly.
- XI.4: Consider adding a requirement for an annual sewer system report or at least annual graphed performance results be made available to the City Council on a regular Council agenda.

- XI.5: Consider establishing an expanded sanitary sewer program webpage with at a minimum of hyperlinks to all critical supporting documents, linked municipal code, City standard specifications and drawings, audit reports, master plans and FOG program materials and documents.
- XI.6: Consider the development of a Council Utility Committee to review and make recommendations on utility program activities and equally prioritize the water and sewer programs.

Element XII: Audit of the SSMP Change Log (MRP Section E3)

Records documenting all changes made to the SSMP since its last certification indicating when a subsection(s) of the SSMP was changed and/or updated and who authorized the change or update. These records shall be attached to the SSMP.

Sufficiency: Partial Compliance

Findings:

- The Change Log is attached to the SSMP as required as 3.0 SSMP Appendices.
- Change Log includes only changes in the 2019 SSMP and not all changes since the 2014 SSMP adoption.
- The Change Log does not include the specific sub-element of an Element that was changed or modified.
- The Log does not recognize the changes in organization made in 2020 to both classifications and the Environmental Services Division. No other changes in 2020 were logged as required.
- Reference at the end of the Appendix below the Table should appear in the body of the SSMP appropriately and not at the end of Table itself.
- Changes should include additional details of the changes made.
- Element 6 change does not reflect the current responsibilities in the WQMP for Environmental Services.
- Element 9 historical SSO information was not updated in the December 2019 SSMP.

Recommendations:

- XII.1: Assure that Change Log maintains all changes since last SSMP adoption by the City Council.
- XII.2: Add Element section and sub section numbering to be used to identify the specific Element changes made to the SSMP.
- XII.3: Add SSMP Change Log references in Elements 9 to 11.

Element XIII: Audit of SSMP Attachments

Sufficiency: Not Applicable (No WDR requirements)

Findings:

- Attachments A to C not required by the WDR.
- Attachment A is no longer the responsibility of the Utility field staff.
- Attachment B SSO Response Report Form does not provide sufficient documentation of an overflow event and should be included in the OERP stand along document.
- Attachment C should only appear in the OERP Workbook.
- Attachment D WQMP does not conform with the new roles and responsibilities in the Utilities Division.
 - The procedures do not include the most current date or the person or position of approval.
 - The procedures do not follow a City standard SOP format.
 - The procedures do not include training requirements for responsible staff.
 - The procedures do not include a sample chain of custody form to be used when sampling and submitting the samples for testing and analysis.
- City of Pleasanton SSMP Audit Report form is no longer applicable and should be replaced with a document to inform and rate the sufficiency of each Element for the Audit interviews.

Recommendations:

- XIII.1: Remove Attachments A to C.
- XIII.2: See recommendations in Element 6 for the improvements to the WQMP.
- XIII.3: Consider development of a two document OERP (1 – policy; 1 – overflow event workbook) with the work book document carried in field staff vehicles.

5.0 Program Performance Results

The following figures summarize the City’s sewer program performance related to overflows and maintenance. The overflow data is taken from the City’s certified reports found at the SWRCB’s CIWQS database for WDID 2SSO10167. Maintenance data was provided by the City’s Project Manager for the Audit. All information is reported by calendar years.

Figure 1: Annual Total SSOs

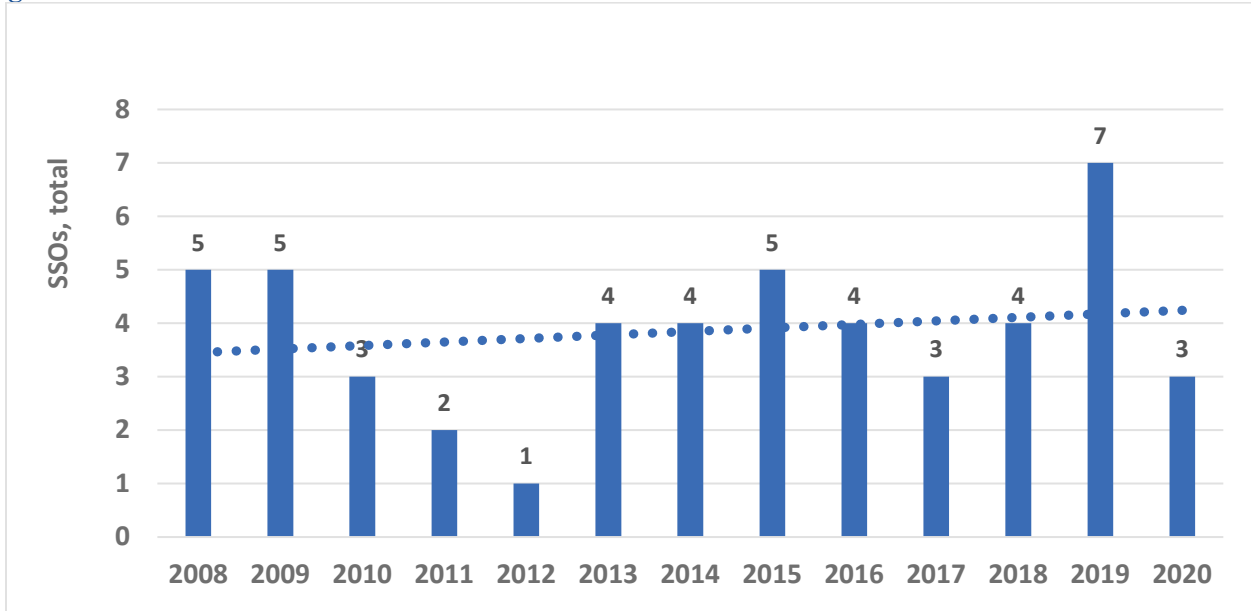


Figure 2: Annual SSOs by Category

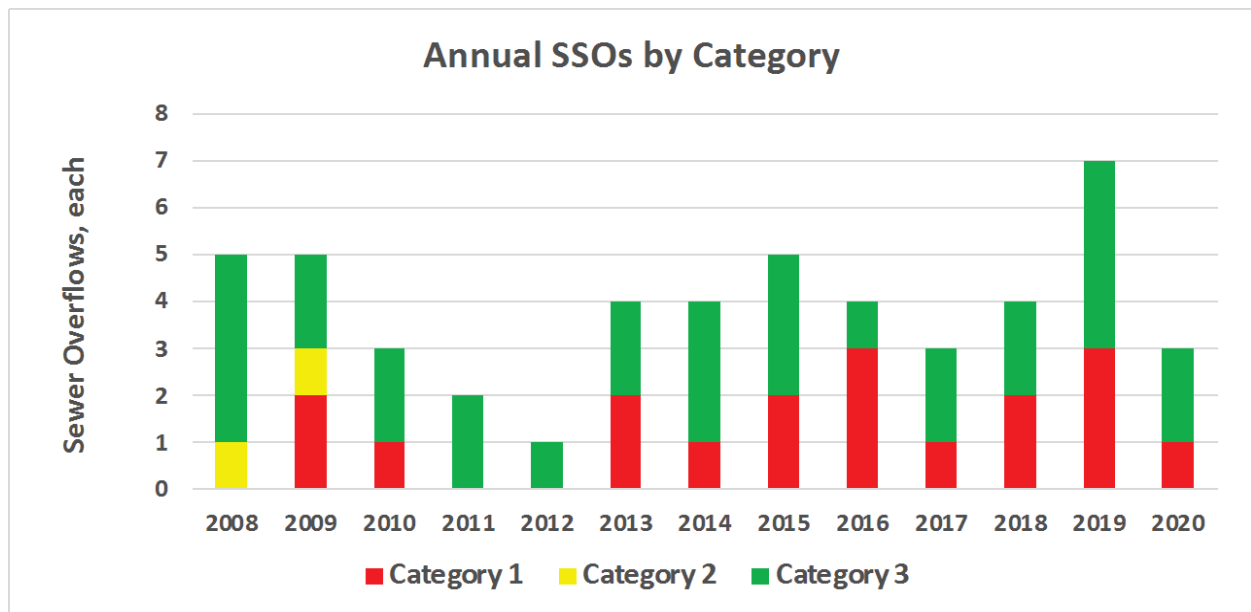


Figure 3: Annual SSOs by Cause

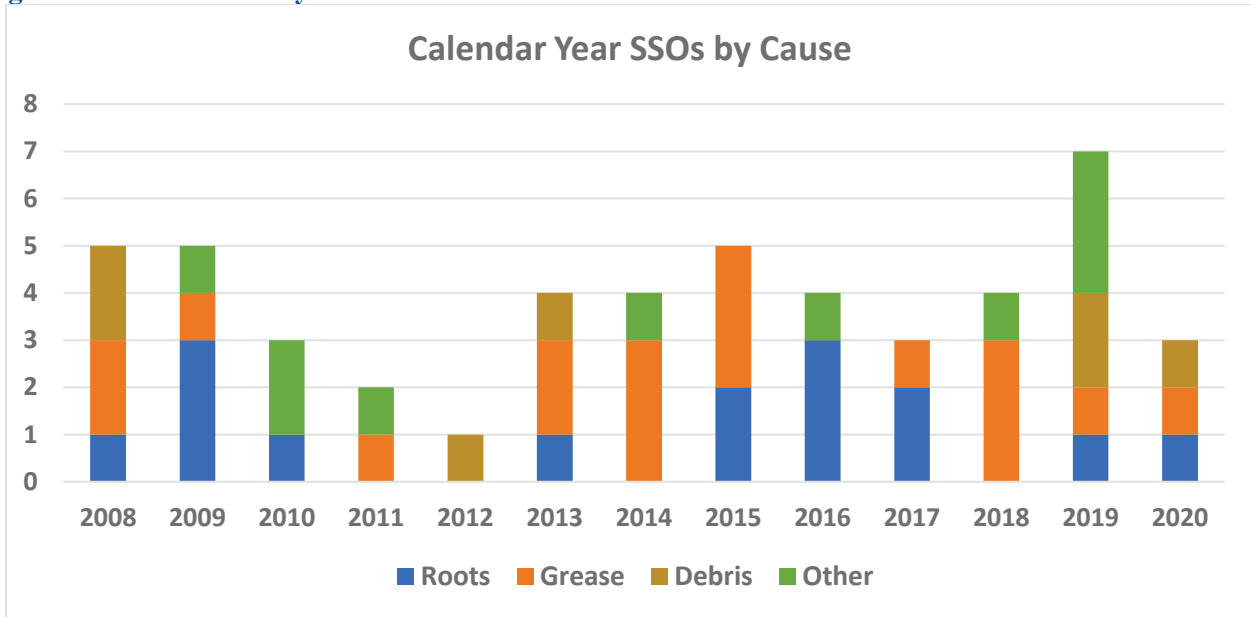


Figure 4: Comparison of Annual SSO Rates

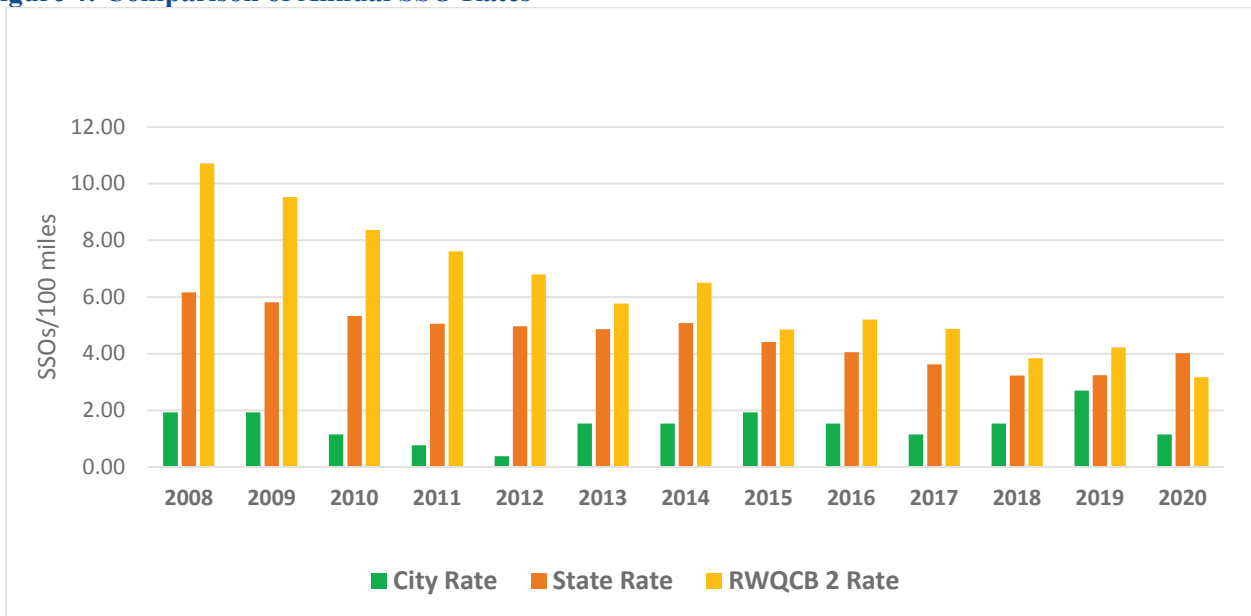


Figure 5: Annual Overflow Volume

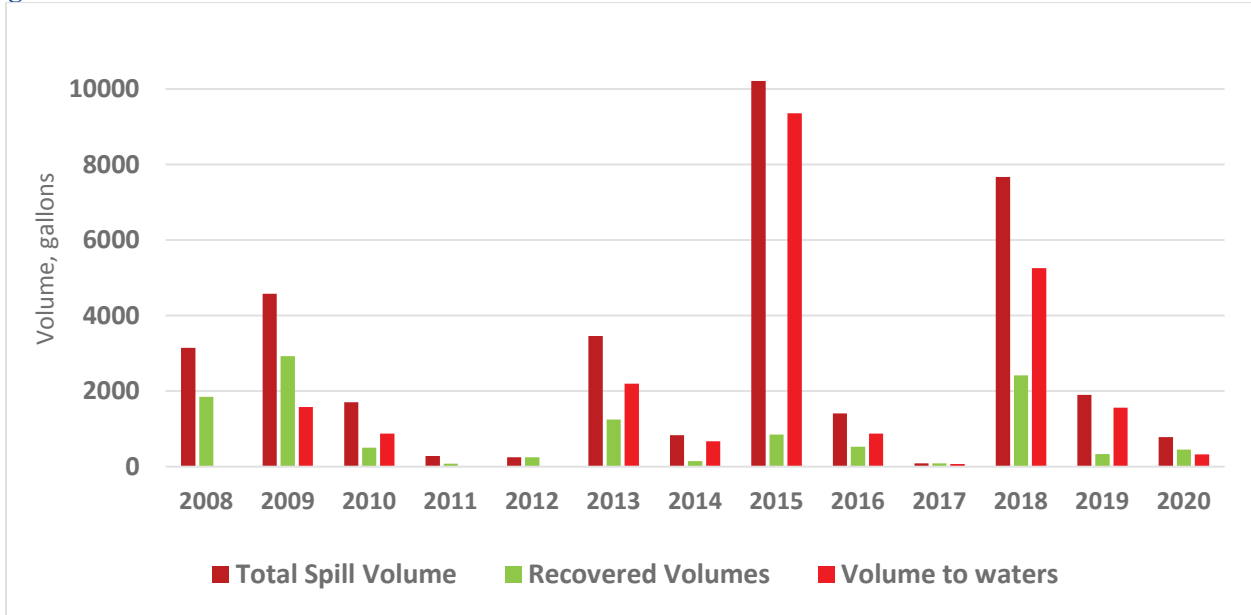


Figure 6: Annual Overflow Percent Recovery & Percent to Surface Waters

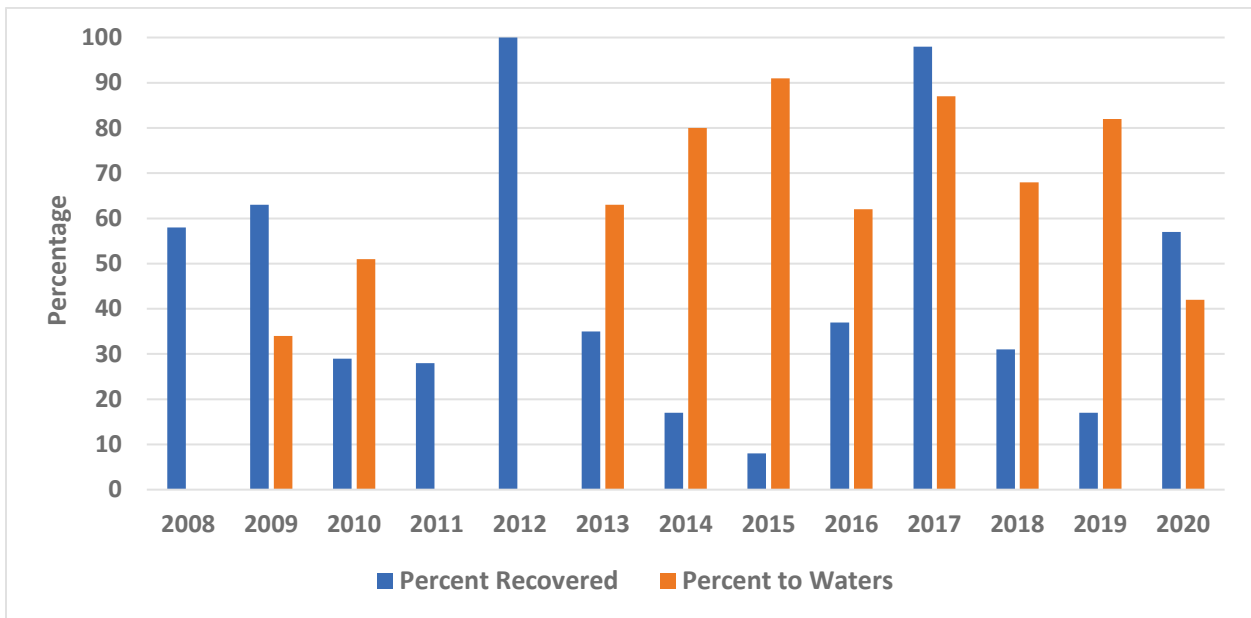


Figure 7: Annual System Wide Cleaning

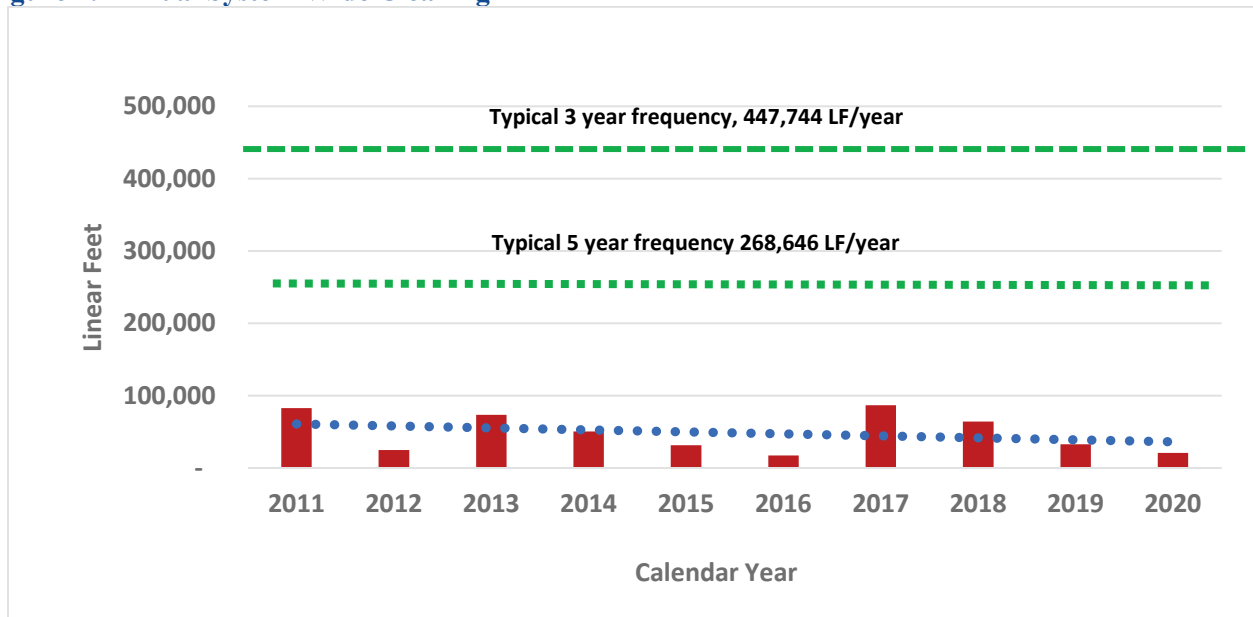


Figure 8: Annual System Wide Cleaning as Percent of System

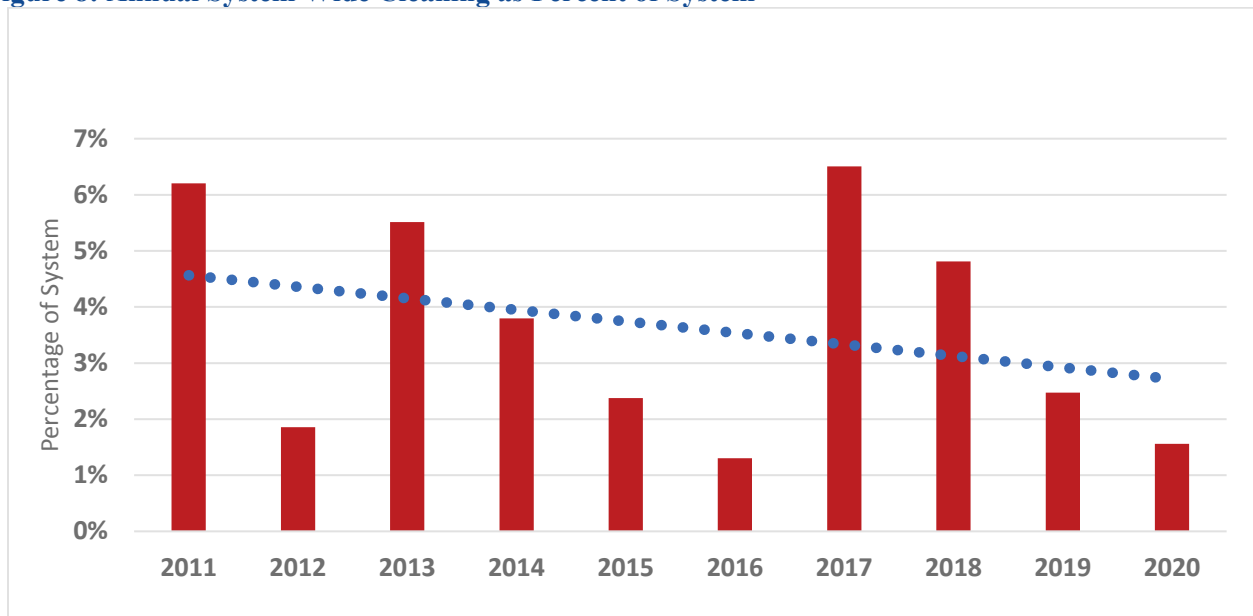
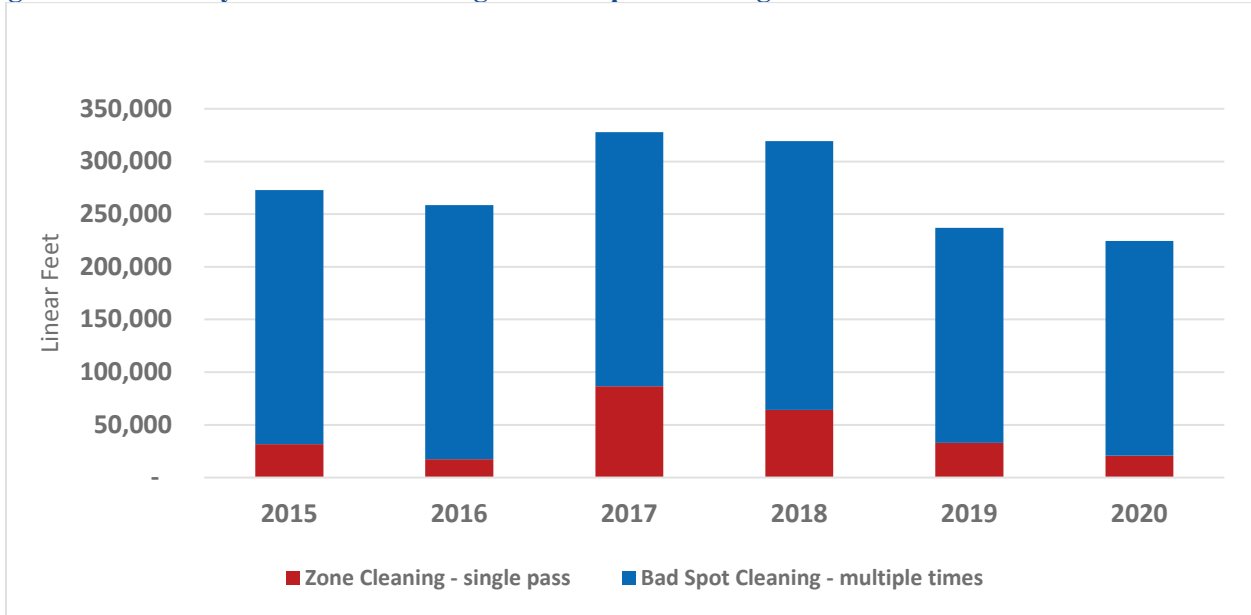


Figure 9: Annual System Wide Cleaning vs. Bad Spot Cleaning



System Wide Cleaning
Figure 10: Annual CCTV

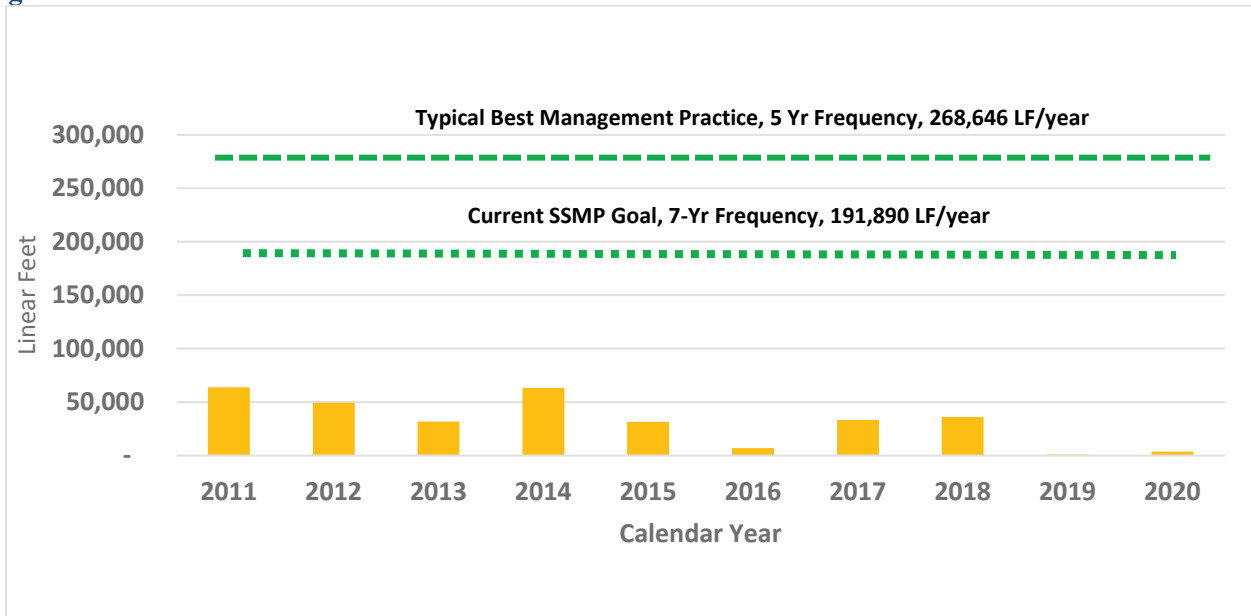
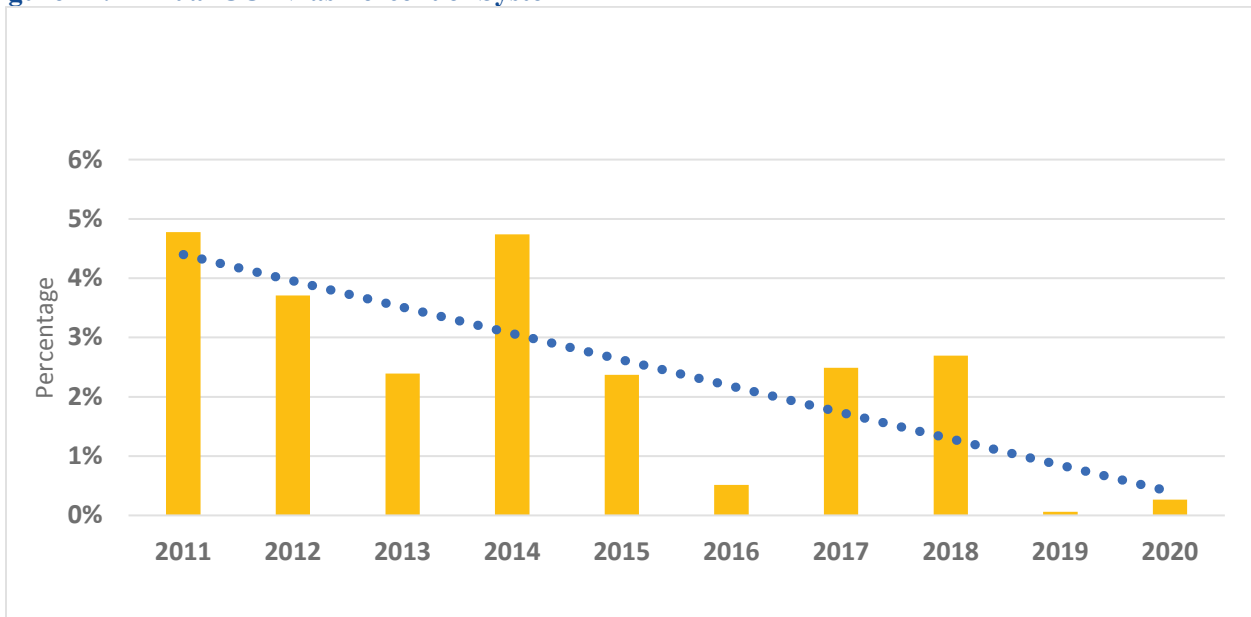


Figure 11: Annual CCTV as Percent of System



6.0 Conclusion

The 2019 SSMP requires substantial rewriting to reflect the actual sewer program, comply with WDR requirements, and improve sewer program implementation. Of the 11 SSMP elements, 3 comply, 4 partially comply, and 4 are not in compliance. The 2019 SSMP does not reflect a properly defined sewer program nor has the City implemented the program as stated in the SSMP.

In August 2018, the Operations Services Department completed a Utilities Division Staffing and Organizational Structure Analysis that resulted in significant recommendations for both a reorganization of the Utilities Division and an analysis of the staffing levels provided in the sewer program. Many of the organizational changes have been completed, and based on interviews, field staff and supervisors have optimism that these organizational changes will raise the level of professionalism in the sewer program and create a level playing field with the water program. However, recommendations from the August 2018 report on the expansion of staff or extension of additional service contracting to support the sewer program have not materialized. The results of the current Audit have confirmed this need. Major staffing related issues include implementation of a FOG program and constant removal of staff from an already depleted sewer O&M program to support the water system or Castlewood service contract with Alameda County. The City should consider dedicating staff to the sewer program and only allowing removal in extreme emergency situations. We further recommend that the City conduct a full staffing evaluation to determine the proper level of staffing for the sewer O&M and FOG programs.

The operations and maintenance program for sewer piping relies solely on bad spot maintenance of approximately 3% of the gravity system and essentially ignores scheduled cleaning of the remaining 97% of the system (referred to as System Wide Cleaning). For all practical purposes there is no regular cleaning or condition assessment program for gravity piping and force mains. Even when the City has performed some condition assessment of piping, the piping was not rated to any industry standard. This means that there is no real ability to prioritize renewal or replacement based on actual pipe condition as required by the WDR. An additional area of concern relates to the lack of a comprehensive and coordinated training program for City sewer staff. There is a lack of knowledge at the field level of the regulations and even of the City's own sewer program documents and procedures. Very limited training was provided during the Audit period and the defined tailgate program is considered by staff to be ineffective and of little value. A well-defined training program that establishes reasonable annual goals per employee for training and performance improvement is necessary.

The City's sanitary sewer program continues to experience few overflow events representing small spill volumes and with an overflow rate per 100 miles per year that is significantly below the Region 2 and all State enrolled agencies. The Audit included a review of the City's documentation of a sampling of five overflow events during the Audit period. In general, the City staff has consistently documented each overflow event and submitted all documentation into the SWRCB's CIWQS system meeting all timelines. However, based upon review of the MRP and the City's own SSORP, there is not adequate written documentation of each event, and the staff needs to update and improve the OERP Element including necessary and proper documentation of

events in the future. The WDR only requires that overflow event documentation be retained for a period of five years unless directed by either the RWQCB or the SWRCB. By inserting all event documentation to CIWQS, these documents will never be removed or deleted and will be available for all looking to evaluate the City's emergency response program. This matter should be reviewed with the City's legal counsel to assure that this is acceptable for the City's risk profile.

Staff interviews suggest that FOG may be more of an issue within the sewer system than what the CIWQS overflow data suggests. It is critical that the City evaluate this in more detail and determine if FOG is a problem requiring implementation as defined in the municipal code or if the program is not needed and should be removed from the municipal code. The program is currently non-existent due to staffing limitations. In addition, there is no funding to support the program as the municipal code does not allow for the collection of fees. A funding mechanism is required to support a properly implemented FOG program.

The City's 2007 Sewer Master Plan is significantly outdated in terms of a system capacity evaluation or condition assessment. The City also has no formal sewer renewal and replacement program that is supported by condition assessments. Implementation of both a sewer capacity evaluation and formal renewal and replacement program is required to identify and prioritize improvements and properly support the City's sewer CIP, which to date has been formed primarily from staff concerns. The City's sewer CIP is a four-year program, but should also consider development of a longer duration (10 years) for purposes of funding and rate studies. It is expected that sewer rates will need to be increased to properly fund a condition based and prioritized replacement program for the future.

The City should consider establishing a Work Plan that includes recommended actions to redevelop the sewer program and SSMP to achieve compliance with the WDR and improve its implementation. The Work Plan should also include an evaluation of changes to the WDR requirements expected to be adopted by the SWRCB in 2022 and provide recommended actions for compliance with these changes. The Work Plan should prioritize recommended actions and develop an implementation schedule.

Appendix A: Interview Plan

City of Pleasanton SSMP Internal Audit Interview Plan

1. Executive Management (1 session)
 - a. Director of Operations and Water Utilities (Kathleen Yurchak)
 - b. Managing Director of Utilities and Environmental Services (Daniel Repp)
2. Utilities Planning (1 session)
 - a. Utilities Planning Managers (David Bruzzone, Todd Yamello)
3. Utilities Division
 - a. Manager and Supervisors (1 session)
 - i. Utilities Division Manager (Danny Ward)
 - ii. Chief Utilities Systems Operator (Ryan Ravalin)
 - iii. Utilities Systems Maintenance Supervisor (Daniel McVey)
 - b. Operators (3 sessions)
 - i. Lead Utilities Systems Operator (Session 1: Eric Pristia, Dave Peterson; Session 2: Robert Patterson)
 - ii. Utilities Systems Operator 1 (Session 3: Deston Swift, Jeremy Venegas, Tommy McCoy)
4. Environmental Services (1 Session)
 - a. Environmental Services Manager (Rita Di Candia)
 - b. Environmental Compliance Supervisor (Scott Walker)
5. GIS (1 session)
 - a. GIS Coordinator (William Wang)
 - b. Utilities Division Manager (Danny Ward)
6. Engineering and Capital Improvement Program (1 session)
 - a. Senior Civil Engineer (Adam Nelkie)
7. Training (1 Session)
 - a. Training and Emergency Services Manager (Leo Lopez)

Appendix B: Audit Program Checklist

**City of Pleasanton
SSMP Audit Checklist
Causey Consulting
June 11, 2021**

The purpose of the SSMP Audit is to evaluate the effectiveness of the City of Pleasanton’s SSMP and to identify any needed for improvements. The information identified here will be used to inform the findings and necessary information to be evaluated during the biannual Internal Audit of the 2019 SSMP.

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

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

Element 0 – Introduction/Executive Summary	
A. Add list of Tables, figures and attachments; add original adoption date to cover	Rec
B. No reference to the 2013 MRP	NC
C. Replace audit form	NC
D. Treatment facility not stated	NC
E. Table 1-1 and 1-2 different totals; not table of pipe age	SC
F. Add tables of PS, FM and siphons	Rec
G. Remove use of SSORP – page 5 and 7	NC
H. Add additional acronyms like WDID	Rec
I. No current service area map; add discharge areas to Livermore and DSRSD	Rec
Element I – Goals	Rating
A. Are the goals stated in the SSMP still appropriate and accurate?	SC
Discussion: Recommend removing future goals from the Element; any goals to be added or deleted? Consider use of an SSO rate/100 miles/year? Do the Element IX metrics support the goals?	

Element II – Organization		Rating
A.	Is the List of City Staff Responsible for SSMP Elements current?	NC
B.	Is the Sanitary Sewer Overflow Responder List current?	
C.	Is the City Organization Chart current?	MC
D.	Are the Staff position descriptions an accurate portrayal of staff responsibilities?	PC
E.	Is the Chain of Communication for Reporting and Responding to SSOs section/flow chart accurate and up-to-date?	NC
<p>Discussion: The most current org chart is not included; many classification titles have changed; chart does not include other supporting departments especially Call Center, Engineering and GIS; several class title new and several have been shortened – <i>revise to current; add LRO and DS designations to titles; Utilities maintenance classifications not included in descriptions; recommend the development of a flow chart for communications; reference to SSORP remove</i></p>		
Element III – Legal Authority		Rating
Does the SSMP contain current references to the Pleasanton Municipal Code documenting the City’s legal authority to:		
A.	Prevent illicit discharges?	C
B.	Require proper design and construction of sewers and connections?	C
C.	Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City?	C
D.	Limit discharges of fats, oils and grease?	C
E.	Enforce any violation of its sewer ordinances?	C
F.	Were any changes or modifications made in the past year to City Sewer Ordinances, Regulations or standards?	??
<p>Discussion: Remove references to two ordinance numbers; add specific lettered sections under a Section; Title 15 is appropriate; <i>what is status of current program? Any enforcements during audit period? current permitted FSEs? Why the I/I statement in this Element; No discussion of the LAVMA agreement sharing of the export of sewage from the service area; any agreement with Castlewood</i></p>		
Element IV – Operations & Maintenance		
Collection System Maps		Rating
A.	Does the SSMP reference the current process and procedures for maintaining the City’s wastewater collection system maps?	SC
B.	Are the City’s wastewater collection system maps complete, current and sufficiently detailed?	SC?

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?	SC maybe
Prioritized Preventive Maintenance	Rating
D. Does the SSMP describe current preventive maintenance activities and the system for prioritizing the cleaning of sewers?	MC
E. Based upon information in the Annual SSO Report, are the City’s preventive maintenance activities sufficient and effective in minimizing SSOs and blockages?	NC
Scheduled Inspections and Condition Assessments	Rating
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?	NC
Contingency Equipment and Replacement Inventory	Rating
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?	SC
H. Are contingency and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?	MC
Training	Rating
I. Does the SSMP document current training expectations and programs?	C???
Outreach to Plumbers and Building Contractors	Rating
J. Does the SSMP document currently outreach efforts to plumbers and building contractors?	C
<p>Discussion: Section numbering is off; <i>describe the bad spots program – on and off the list – how? are maps available in the vehicles? Do service maps show services areas to the two treatment plants? Table 4-1 needs explaining especially preventative; Why no force main O&M included? Cleaning and CCTV frequencies very low and =not best management practices; clean/CCTV numbers appear based only on historical experience not actual; target CCTV every 7 years current every 40 years based on SSMP Table 4-1 and CIWQS; manhole inspections conducted using MACP; Expand pump station narratives; nothing on force main O&M, etc.; recommend annual Pump Station and force main checklist use; no list of replacement parts in the SSMP;</i></p>	
Element V – Design and Performance Standards	Rating

A.	Does the SSMP reference current design and construction standards for the installation for new sanitary sewer systems, pump stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?	C
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?	C
Discussion: Any changes or updates during the audit period? Any changes identified; how are they reviewed and updated? How often? How are lines >15" designed and inspected?		
Element VI – Overflow and Emergency Response Plan		Rating
A.	Does the City's Sanitary Sewer Overflow Emergency Response Plan establish procedures for the emergency response, notification, and reporting of SSOs?	SC
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?	NC
E.	Does all SSO event recordkeeping meet the SSS GWDR requirements? Are all SSO event files complete and certified in the CIWQS system?	MC
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?	C ??? N/A
Discussion: <i>Eliminate the use of SSORP; consider creation of separate OERP with narratives and workbook; eliminate Attachments A to D; requires revisions based on new org structure and title page 23; need to add paragraph numbering in this element; containment not high enough in the response priorities; no single SSO event file available all info submitted to CIWQS; add requirement for photos or video at arrival at the site page; no debrief/failure analysis procedures; develop SOPs generally; need to check next day after SSO for signs and solids from event; create way to ID where recovered volumes are returned; no certified lab identified for sampling; no chain of custody included need a new one in the WQMP; revise response flow chart; Table 6-1 in SSORP outdated; expand Section F. recordkeeping and add Event Checklist; WQMP update classification titles; add list of water bodies to the WQMP;</i>		
Element VII – Fats, Oils and Grease (FOG) Control Program		Rating
A.	Does the FOG Control Program include efforts to educate the public on proper handling and disposal of FOG?	PC

<p>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;</p>	<p>C</p>
<p>C. The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;</p>	<p>C</p>
<p>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</p>	<p>C</p>
<p>E. Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;</p>	<p>C</p>
<p>F. An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and</p>	<p>C</p>
<p>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.</p>	<p>?????</p>
<p>Discussion: <i>Update of the 314 FSE needed – table over the audit period; reference to 2009-2013 should be updated; need to add information on residential FOG discharge – need residential program description of what’s on the webpage; reformat the element to follow WDR; confusing references to MC for inspections in 44.050 and .060 also?</i></p>	
<p>Element VIII – System Evaluation and Capacity Assurance Plan</p>	
<p>A. Does the City of Pleasanton Sanitary Sewer Master Plan evaluate hydraulic deficiencies in the system, establish sufficient design criteria and recommend both short and long-term capacity enhancement and improvement projects?</p>	<p>SC</p>

B. Does the City’s Capital Improvement Plan (CIP) establish a schedule of approximate completion dates for both short and long- term capacity improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity completed?	NC
<i>Discussion: 2007 Master Plan and hydraulic model dated needs replacement; 10% pipe reaches capacity problems still; CIP seems small; CIP does not project out ten years just a couple;</i>	
Element IX – Monitoring, Measurement and Program Modifications	Rating
A. Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?	NC???
B. Is the City able to sufficiently evaluate the effectiveness of the SSMP elements based on relevant information?	MC???
C. Do the performance metrics properly support the Goals in Element 1?	NC
D. Update program elements, as appropriate, based on monitoring or performance evaluations; and	MC
E. Identify and illustrate SSO trends, including: frequency, location, and volume	MC
<i>Discussion: performance is not being evaluated annually as stated; not properly reporting SSO cause in CIWQS; no other apparent performance measures tracked; not adequate support for the Element 1 goals; change does not support program revisions during the audit period;</i>	
Element X – SSMP Audits	Rating
A. Will the SSMP Audit be completed, reviewed and filed in Appendix B every two years from August 2008?	NC
B. Was the final Audit Report presented to the governing body at a publicly noticed meeting?	NC
<i>Discussion: last audit 2018 no comprehensive enough – RWQCB 2form not adequate as audit report; audit report form no longer adequate use only as an audit checklist; no audits were taken to City council; not audits available on website as stated; SSMP states ECS maintains the audit reports – still true? No SSMP changes listed since 2018 – no changes in two plus years;</i>	
Element XI – Community Program	Rating
A. Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and continue to address any feedback?	NC
B. Did the City Council receive and review the Annual Sewer System Report?	NC

Was the annual report uploaded to the City Sewer Section website and added to Appendix C?	???
C. Did City staff conduct and document meetings with satellite collection systems?	???
D. Are all agreements with satellite systems current or are changes necessary to these agreements?	???
Discussion: <i>does City have satellite agreements with Castlewood; add WDID information to this element for ease of contact;</i>	
Change Log	Rating
A. Is the SSMP Change Log current and up to date?	
Discussion: <i>No additions since 2018 Audit report; not sufficient details; need to update the section numbering so additional details can be added; two years outdated;</i>	

Audit Team: _____

Date: _____

Prepared By: _____

Date: _____

Reviewed By: _____

Date: _____

Certified By: _____

Date: _____

Approved for Filing On

Date: _____

Appendix C: Documents Reviewed During the Internal Audit

1. Sewer System Management Plan Documents
 - a. October 2014 SSMP
 - b. July 2018 SSMP Audit
 - c. December 2019 SSMP
2. Wastewater Master Plan Documents
 - a. City of Pleasanton Wastewater System Master Plan, Carollo Engineers, August 2007
 - b. Hydraulic Model Conversion and Calibration & EARS PS Capacity Review, Carollo Engineers, June 2013
3. Pleasanton General Plan 2005-2025, Wastewater Chapter
4. Operations Services Department Strategic Plan October 2016
5. City of Pleasanton Operations Services Department, Utilities Division Staffing and Organizational Structure Analysis, Municipal Resources Group, LLC., August 2018
6. City of Pleasanton Operations Services Department Operating Budgets, FY 2019/20 and FY2020/21
7. City of Pleasanton Capital Improvement Program Budget, FY2021/22 to 2024/25
8. City of Pleasanton Water and Sewer Rate Study, HDR Engineering, Inc and City Council Agenda report dated July 21, 2015
9. City Sewer Service Charges June 2019 – June 2020
 - a. General Service Area Charges for DSRSD Treatment
 - b. Ruby Hills Service Area Charges for Livermore Treatment
 - c. Castlewood Service Area Charges
10. Alameda County LAFCO Municipal Service Report December 2017
11. DSRSD Treatment Agreement and Amendments
12. Livermore – Ruby Hills Service Area Treatment 1993 Agreement and 2017 Amendment 1
13. LAVWMA Joint Powers Agreement Amended and Restated
14. Castlewood County Service Area (R-1967-1)
 - a. County/City Agreements 1985, 1994, 2017 (and amendments)
 - b. Annual Report, Fiscal Year 2017-2018

- c. County of Alameda Agenda Summary for agreement with Pakpour Consulting Group Evaluation of the Sanitary Sewer System and Domestic Water Systems in the Castlewood County Service Area, June 24, 2011.
- 15. Alameda Count Clean Water Program NPDES Permit R2-2015-0049
- 16. California Integrated Wastewater System database for WDID 2SSO10167
- 17. San Francisco Regional Water Quality Control Board Correspondence September 21, 2017, and December 12, 2017
- 18. FOG Program Documents
 - a. List of FSEs
 - b. Guidelines, Factsheets, BMPs
- 19. Operator Orientation Program, 2000
- 20. Utilities Standard Operating Procedures – numerous
- 21. Utility Training Log – 2018 thru 2020
- 22. Tailgate Safety Topics Outline for 2018, 2019, 2020
- 23. City of Pleasanton Asset Infrastructure Data Files (database download on 6-15-21)
- 24. Sewer cleaning list (bad spots, siphons, wet wells)
- 25. Sewer facilities inspections checklist
- 26. GIS data schema for sewer
- 27. Operations Services Department Org Chart (updated 5-5-21)
- 28. Utilities Classification Descriptions (including draft revisions)
- 29. Emergency planning documents
 - a. City of Pleasanton Emergency Operations Plan, March 2018
 - b. Operations Services Department Emergency Action Plan, October 2019
 - c. City of Pleasanton Emergency Response Plan, Draft, June 2021

Appendix D: Audit of Overflow Emergency Response Program Event Documentation

Summary of Overflow Record Keeping Findings Causey Consulting May 25, 2021

The following observations were developed from the five selected overflow events certified in the CIWQS database and compared to the WDR and SSORP record keeping requirements from the SSMP. The review looked at both the CIWQS report information and the required documentation from the City SSORP. Staff indicated that all event documentation is uploaded to CIWQS and no additional documents are retained in the City event files.

Good observations

- Consistent documentation
- General maps of area are included
- Times match SSO form and CIWQS
- Required timelines all met
- Consistent documentation provided in CIWQS
- SSO Report form completed for each event
- Good work order information included for each event
- Pictures of each event included – generally proper documentation included
- Excellent event costing information included
- Proper notification to CIWQS for the Cat 1 overflows

Weaknesses Identified

- Few pictures of signs placement
- Generally, no overflow protection for public
- All volumes based on SD chart - lazy
- No volume calculations or assumptions included
- No multiple methods used to compute volumes
- Should have used area/volume method not in El 6 – really

- Not enough volume methods included in the SSORP
- Poor quality photos
- State eyeball but really flow duration
- Night photos very poor
- No caller documentation included
- No caller information, phone or location
- No caller interviews
- No statement of how start times were determined
- Few containment pictures
- Poor photo labelling
- No OES contact form
- No registered health specialist notes provided???
- Include copy of checklist for them
- No supervisor sign-off on SSO form
- No debrief/Failure Analysis provided
- No video provided
- No signs used generally only cones – use signs in the cones
- Sign from SSORP not used in any photos – not used at mall
- No follow-up with grease trap overflow – no inspection resulting from overflow or billing for the spill?
- Not all Cat 1 <1000 need to be reported to OES
- No documentation for missed OES deadline of 2 hours – Event 859200 Second Street
- No separate event file with supporting documentation

City of Pleasanton
Overflow Event Record Keeping Audit Summary
May 25, 2021
Causey Consulting

SSO CIWQS Event ID	862889	862331	859200	851785	846103
Start Date	11/14/19	10/18/19	6/18/19	10/6/18	3/30/18
Start time	21:45	20:30	13:10	13:45	7:57
Notification time	22:07	21:00	13:21	14:00	8:27
SSO aware	22:15	22:00	13:36	14:25	8:42
Response time. Minutes	0:08	1:00	0:15	0:25	0:15
Spill location	Suttergate Dr	Stoneridge/ph Road	4310 Second	1350 Stoneridge	2197 Arroyo Ct
Appearance points	3	1	1	1	1
Spill Category	1	3	1	3	1
Spill Volume	1000	90	400	425	5650
Recovered Volume	25	90	100	425	600
Volume to surface water	975	0	300	0	5050
Volume method(s) used	Flow duration	Eyeball - limit 100 gallons	Flow duration	Flow duration	Flow duration
Documents uploaded	Report, WO, Map, Pics	Report, WO, Map, Pics	Report, WO, Map, Pics	Report, WO, Map, Pics	Report, WO, Map, Pics
Spill Cause	null	null	null	null	null
Total spill time, minutes	125	30	40	85	113
Overflow rate, gpm	8	3	10	5	50
San Diego chart	Yes	Yes	Yes	Yes	Yes
Impacted waters	Arroyo Los Positos	fully recovered	St Marys Creek	None	Arroyo de la valle
OES notified	22:50	N/A		N/A	10:30
OES control number	197330	N/A	193940	N/A	0:00
OES 2-hour meet	Yes	N/A	No	N/A	Yes
OES Notification required	Yes	N/A	No	N/A	Yes
Cartified date	11/21/19	10/25/19	6/20/19	10/16/18	4/10/18
Cetrification deadline met	Yes	Yes	Yes	Yes	Yes
Corrective actions taken	Adjust schedule	None	None	None	Adjust schedule
Certified by	Yamello	Yamello	Derek Lee	Derek Lee	Derek Lee

City of Pleasanton
Overflow Event Record Keeping Audit Summary
May 25, 2021
Causey Consulting

SSO CIWQS Event ID	862889	862331	859200	851785	846103
SSORP Records Audit					
SSO routing sheet	No	Yes	Yes	No	Yes
SSP Response Report Form 9 - Attachment B	Yes	Yes	Yes	Yes	Yes
Form completed by	Amaro	Peterson	Peterson	Overman	Peterson
Utilities Sewer Work Order	Yes	Yes	Yes	Yes	Yes
Start time documentation	No	No	No	No	No
Caller documentation included	No	No	No	No	No
Written report (page 26 Element 6)	Yes	Yes	Yes	Yes	Yes
Volume calculations shown	No	No	No	No	No
Recovered volume calculations	No	No	No	No	No
CCTV conducted	Maybe no documentation	Yes	Yes	Yes	Yes
Follow-up CCTV report in file?	No	No	No	No	No
Samples taken	No	No	No	No	No
Sign placed	Yes	No	Yes 1 only	Cones	Cones
Signs photographed	No	No	Yes	No	Yes
Overflow map completed? (page 27 Element 6)	2 each	Yes hard to read notes	Yes	Yes	Yes hard to read notes
Photos taken	9 each	4 each	11 each	7 each	7 each
Draft SSO Report	No	No	No	No	No
SWRCB Certification email	No	No	No	No	No
Copy of Final certified report	No	No	No	No	No
Possible PLSD?	No	No	No	Yes	No

Appendix E: Sanitary Sewer Overflow Response Questionnaire

City of Pleasanton

Collection System Worker Training Sanitary Sewer Overflow Response Questionnaire

Recommended Questions to ask Collections Workers in Interviews by State Enforcement Personnel

INTRODUCTORY STATEMENT

“The purpose of this short interview is to be prepared for those questions that will be asked to help the SWRCB better understand your SSO prevention, mitigation and response activities, including evaluating Pleasanton’s Overflow Emergency Response Plan (OERP). There are 14 questions for you that are asked of everyone they talk to all will be asked the same list of questions.

Please use the back of the page or add additional pages if there is not adequate room for your response to each question. Your answers to these questions will be used by our consultants to assist with the development of the SSMP revisions and OERP training program.

Questions to Answer

1. “For starters, please provide your name and job title.” _____
2. “Please describe for us approximately when you started in this field and how long you have worked for the City _____
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 you get or the City sends you to for conducting volume estimates?

6. We are interested in learning more about how your historical SSO response activities have worked in the field.” We understand that you use the SSORP from the SSMP Element 6. Please elaborate on how you use the procedures in the Plan.

7. Historically 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 and/or recovered? If it is you, please describe for us 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?

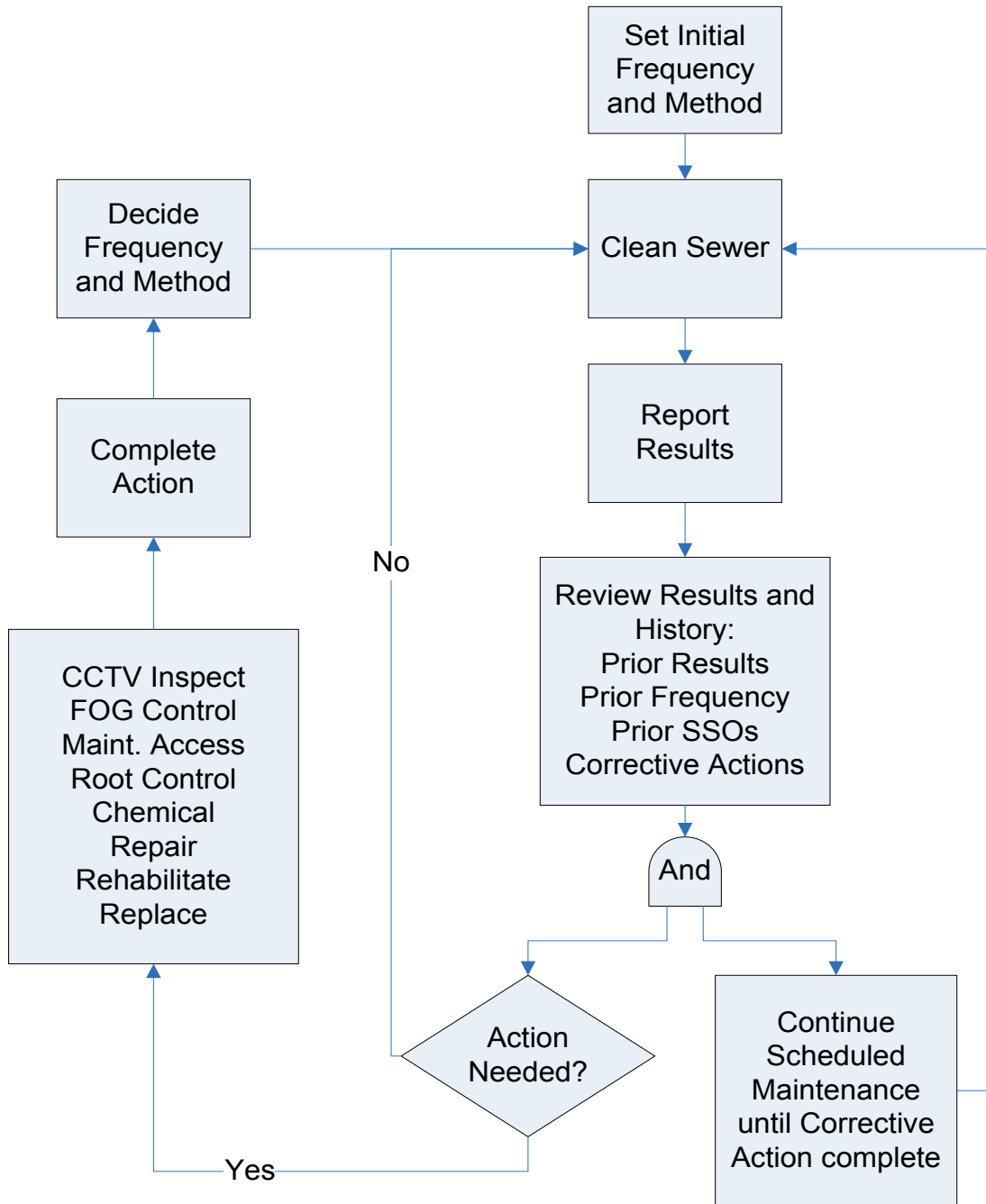
11. “Please walk us through anything else you’d like to add to help us better understand how your crews respond and mitigate SSO complaints?”

12. Please provide the meaning of the following acronyms used in collection system operations:

- BMP
- CCTV
- CIWQS
- DS
- EDU
- EPA
- FOG
- FSE
- GPM
- GRD
- I/I
- LRO
- MH
- MRP
- OERP
-
- OES
- O&M
- PACP
- PLSD
- PPE
- RWB
- SOP
- SSO
- SSMP
- SSORP
- SWRCB
- WDR
- WDID
- WO
- WQMP

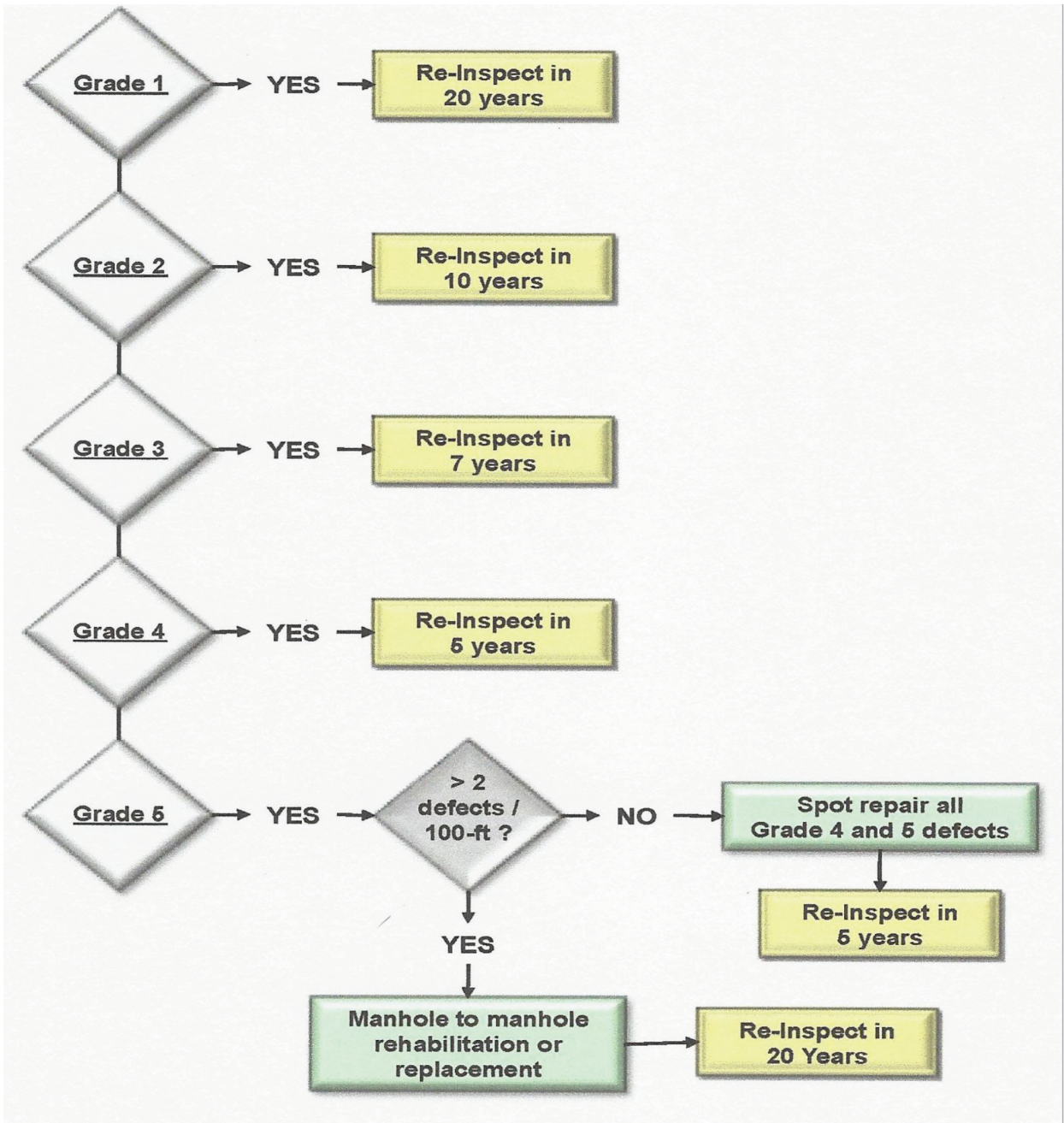
Appendix F: Sample Forms Provided for Program Improvement

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



List of Responsible City Staff for SSMP

SSMP Element	Responsible City Official	Phone Number	Email Address
Introduction	Managing Director of Utilities		
I – Goals	Director of Operations or Managing Director of Utilities		
II – Organization	Director of Operations or Managing Director of Utilities		
III – Legal Authority	Director of Operations or Managing Director of Utilities		
IV – O&M Program	Utilities Division Manager		
V – Design & Performance Provisions	City Engineer		
VI – Overflow Emergency Response Program	Utilities Division Manager		
VII – FOG Control Program	Environmental Services Manager		
VIII – System Evaluation and Capacity Assurance Plan	Utility Planning Manager		
IX – Monitoring, Measurement, and Program Modifications	Utility Planning Manager		
X – SSMP Program Audits	Managing Director of Utilities		
XI – Communication	Director of Operations		
App A – SSMP Change Log	Utility Planning Manager		
App B – SSMP Adoption Documents	Utility Planning Manager		
App C – Audit Reports	Managing Director of Utilities		
App D - OERP	Utilities Division Manager		
App E - WQMP	Utilities Division Manager		



Pump Station and Force Main Assessment Checklist

Inspection Information	
Inspection date	
Inspection participants	
Facility name	
Facility address	
Comments	

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

Security Features	
Fence and gate	
External lighting	
Visibility from street	
Doors and locks	
Intrusion alarm(s)	
Signs with emergency contact information	
Other security features	
Comments	

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

Eye wash	
Chemical storage	
Comments	

External Appearance	
Fence	
Landscaping	
Building	
Control panels	
Other external features	
Comments	

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

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

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

Motors	
Lubrication	
Insulation	
Operating current	
Vibration and alignment	
Other	
Comments	

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

Valves and Piping	
Valve operation	
Valve condition	
Pipe condition	
Pipe support	
Force Main Alignment	
Force Main Discharge Manhole Inspection	
Force Main Valves	
Force Main Air Relief Valves	
Force Main Cathodic Protection System	
Other	
Comments	

Other	
Lighting – inside/outside	
Ventilation System	
Support systems (air, water, etc.)	

Signage	
Backflow prevention system	
Employee facilities	
Sump pump	
Overhead crane	
Portable pump connections	
Portable pumps	
Comments	

**Sanitary Sewer Overflow
Recordkeeping Checklist**

Agency File No. _____ **Agency File Location** _____
Date of SSO _____ **SSO Location** _____
CIWQS Event ID: _____

- SSO File established for each event
- File designation assigned
- File title assigned
- Date of SSO
- SSO Category stated
- SSO site description attached
- SSO incident map attached
- Customer complaint documentation
- Field interviews documented
- List of all staff /contractors involved
- Event chronology attached
- Number of appearance points documented
- CIWQS Draft Data form included
- SWRCB reporting timelines met
- Original data submitter identified in file
- All CIWQS Fields completed by category
- CIWQS Certification Report included
- Event description completed
- List of Photos included
- Photos dated and locations identified
- Location of Photos mapped
- Agency Overflow Report attached
- Impacted waters identified
- Start time documentation attached
- Volume estimation method(s) identified
- Volume computations attached/approved
- Volume assumptions stated/approved
- Recovered volume return location stated
- Agencies notified/date/time
- Map/photos of signs/security attached
- Electronic-monitoring records attached
- Pump Station Telemetry records attached if used
- LRO report approval
- Extraneous forms removed
- Debrief documentation attached
- Failure Analysis completed/attached
- Process or procedure changes identified
- Action plan prepared
- SSMP Change Log updated for changes
- File certified by LRO
- File retention schedule set
- For SSOs > 50,000 gallons
 - Water Quality Monitoring sites identified
 - Chain of Custody attached
 - Final sample results attached
 - Sampling location map
 - Technical report completed
 - Documentation in CIWQS
 - Tech report certified by LRO
- File disposal date established
- All WDR timelines met/documentated