Sewer System Management Plan
For
City of Roseville

WDID 5SSO10935

Revised 12 MAR 2025

CITY OF ROSEVILLE CALIFORNIA
Environmental Utilities

Table of Contents

SSMP Change Log **5**

List of Acronyms **12**

List of Terms **14**

Executive Summary **18**

Background **18**

Sewer System Management Plan Requirements **19**

City Historical Spill Performance **19**

0 SSMP Overview ***20***

1 Goals and Introduction ***21***

1.1 SSMP Goals **21**

1.2 SSMP Plan Update **22**

1.3 Sewer System Asset Overview **22**

1.4 Updated Sewer System Map **23**

2 Organization ***25***

2.1 Legally Responsible Official (LRO) **25**

2.2 SSMP Responsibility Chart **25**

2.3 Organizational Lines of Authority **27**

2.4 Chain of Communication Reporting Chart **28**

3 Legal Authority ***30***

3.1 Industrial Pretreatment Program ***32***

3.2 Design and Construction Standards ***32***

3.3 Sewer Access Authority ***32***

3.4 Fats Oils and Grease ***32***

3.5 Regulation of Sewer Use-Enforcement ***33***

3.6 Inter – Agency and Satellite Agreements **33**

3.6.1 Joint Exercise of Powers Agreement South Placer Wastewater Authority 33

3.6.2 South Placer Wastewater Facilities Operation and Use Agreement 33

3.6.3 Contract and Operating Agreement between SRCSD and SASD 33

3.7 Legal Authority Documents **33**

4 Operation and Maintenance ***35***

4.1 Collection System Maps and Information **35**

4.1.1 Map Update Policy 36

4.2 Operation and Maintenance **37**

4.2.1 Preventative Maintenance Program 38

4.2.2 Corrective Maintenance Program 40
4.2.3 Infrastructure Repair 41
4.3 Training and Certification 43
4.3.1 New Hires 43
4.3.2 Training and Tracking 43
4.3.3 Certification 45
4.4 Equipment and Critical Spare Parts Inventory 45
4.5 Critical Spare Parts 46
5 Design and Performance Provisions 49
5.1 Sanitary Sewer Design Standards 49
5.1.1 Sanitary Sewer Construction Standards 49
5.1.2 Comprehensive Response to Climate Impact 50
5.2 Sewer System Construction and Performance Testing 50
5.2.1 Testing Of Installed Improvements 50
5.2.2 Punchlist Process 53
5.2.3 Repairing Installed Improvements 53
6 Spill Emergency Response Plan 55
6.1 Notification Procedures 55
6.2 Emergency Response Procedures 57
6.2.1 Goals of SERP 57
6.2.2 Respond and Assess 57
6.2.3 Spill Categories 58
6.2.4 Spill Containment 59
6.2.5 Traffic Control (WWC Personnel) 61
6.2.6 Correct Cause 61
6.2.7 Final Volume Estimate (WWC Personnel) 63
6.2.8 Initiate Cleanup (WWC Personnel) 68
6.2.9 Receiving Water Sampling (Industrial Waste Section) 68
6.2.10 Notification Requirements (Superintendent/Supervisor) 69
6.3 Staff and Contractor Training 69
6.4 Spill Mitigation and Containment 70
SSOERP – SSO Start Time Policy 73
SSOERP – Flooded Structure Procedures 74
SSOERP – Water Quality Sampling 75
SSOERP – Sewer Call For Service 77
SSOERP – Sewer Lift Station Failure Response 78
SSOERP – SSO Chain of Communication 79
7 Sewer Pipe Blockage Control Program 81
7.1 Public Education Outreach 82

7.2 FOG Disposal Plan 82
7.3 Legal Authority 82
7.4 GRD, Design Standards, BMPs, Recordkeeping and Reporting 83
7.4.1 Requirement to Install GRD 83
7.4.2 Design Standards 83
7.4.3 Best Management Practices 84
7.4.4 Records and Reporting Requirements 84
7.5 Authority to Inspect 84
7.6 Hot Spot Identification and PM Schedule 84
7.7 FOG Source Control Measures 85
8 System Evaluation and Capacity Assurance Plan and Capital Improvements 87
8.1 System Evaluation and Condition Assessment 87
8.2 Capacity Assessment and Design Criteria 88
8.3 Prioritization of Corrective Action 88
8.4 Capital Improvement Plan 89
9 Monitoring, Measurement and Program Modification 91
9.1 Metrics to Prioritize SSMP Activities 91
9.2 Monitor and Measure Element Effectiveness 91
9.3 SSMP Performance Monitoring and Update Process 93
9.4 Spill Trends 93
9.5 Monitoring, Measurement & Modification 93
10 Program Audit and Annual Report 95
10.1 Audit Process Summary 95
10.2 SSMP Audit Documents 95
11 Communication Program 97
11.1 Purpose of the Communication Program 97
11.2 SSMP Development and Implementation 97
11.3 Public Outreach 97
11.3.1 Utility Exploration Center 98
11.3.2 Live Sewer Smart 98
11.4 Tributary/Satellite Communication 98

SSMP CHANGE LOG

Order WQ 2022-0103-DWG Specification Section 5.5

During the time period in between SSMP updates, the Enrollee shall continuously document changes to its SSMP in a change log attached to the SSMP. These records will demonstrate when a subsection(s) was changed or updated and who authorized the change.

City of Roseville-SSMP Change Log			
Date	Section	Comments	Approval
12/11/13	A complete update of SSMP, both intranet version, and city website version		Chris Bracco
1/9/14	Supporting Documents for SSMP Audit\SSMP Resoultion_14.pdf	Council resolution for SSMP adoption	Chris Bracco
4/7/14	Supporting Documents for SSMP Audit\Roseville SSMP Audit FY13 - FINAL.pdf	Final SSMP Audit- Waterworks Engineering	Chris Bracco
4/7/14	Supporting Documents for SSMP Audit\SSMP Resoultion_14.pdf	SSMP Resolution 2014	Chris Bracco
3/24/15	Appendix B\APPENDIX B-1_Contact List.doc	Updated Rich Plecker as Utility Director	Chris Bracco
3/24/15	Appendix B\APPENDIX B-2_Contact List.doc	Updated Dave Rawe as claims administrator	Chris Bracco
4/30/15	Master_Roseville_SSMP.doc	Added Goal re: design and construction standards	Chris Bracco
9/8/16	Appendix B\APPENDIX B-1_Contact List.doc	Updated City Council/PUC members per 14/15 Audit Rec.	Chris Bracco
10/31/16	Appendix B\APPENDIX B-2_Contact List.doc	Updated RWQCB Contact Information	Chris Bracco
10/31/16	Appendix C\Appendix C-7 Contract and Operations Agreement SASD_SRCSD.pdf	Contract with SASD & Sac Regional	Chris Bracco
10/31/16	Appendix G\Appendix G-4 FOG Inspection Form.pdf	Addition of FOG Inspection Form	Chris Bracco
9/22/16	Appendix I\Appendix I-4 - Key Performance Indicators Benchmarking.xlsx	Addition of Key Performance Indicator Sheet	Chris Bracco
10/31/16	Appendix J\Appendix J-1_Rsvl WWC SSMP Audit Procedure.doc	SSMP Audit procedures	Chris Bracco
9/25/19	Appendix B\APPENDIX B-1_Contact List.doc	Updated council and PUC	Chris Bracco
9/25/19	Appendix B\APPENDIX B-2_Contact List.doc	Update contact information	Chris Bracco

City of Roseville-SSMP Change Log			
9/25/19	Appendix C\APPENDIX C-3 Sanitary Sewer Design.doc	Update Link	Chris Bracco
9/25/19	Appendix D\Appendix D-5 CWEA Certification.docx		Chris Bracco
9/25/19	Appendix F\Appendix F-1\4_SSO Field Report.pdf	Updated SSO overflow charts in field report	Chris Bracco
9/25/19	Appendix F\Appendix F-1\2_SSO Emergency Response Procedures.pdf	Added updated field report	Chris Bracco
9/25/19	Appendix F\Appendix F-1\1_SSO Flowchart.pdf		Chris Bracco
9/25/19	Appendix I\APPENDIX I-4 Key Performance Indicators Benchmarking.pdf		Chris Bracco
9/25/19	SSMP Audit_ Update Data\SSMP Audit Update FY 15_18\Roseville_SSMP_Audit_FY15-18 - FINAL-stamped.pdf		Chris Bracco
10/14/19	Completed Update of SSMP both intranet and City Website version		Chris Bracco
5/13/20	Appendix B\APPENDIX B-1_Contact List.pdf	Added Kevin Ryan Supervisor to contact list	Chris Bracco
5/13/20	Appendix B\APPENDIX B-2_Contact List.pdf	Added Kevin Ryan Supervisor to contact list	Chris Bracco
5/13/20	Appendix F\Appendix F-1\3_SSO Notification Guide .doc	Added Kevin Ryan Supervisor to contact list	Chris Bracco
5/13/20	Appendix I\Appendix I-4 Key Performance Indicators Benchmarking.pdf	KPI sheet with updated numbers	Chris Bracco
2/05/22	Update and re-write the entire SSMP	SSMP was re-formatted and subsequent changes to operation and maintenance have been included.	Daniel Pruden
10/05/22	SSMP Certification	City Council Resolution 22-382	Daniel Pruden
06/11/24	SSMP Internal Audit	SSMP Audit conducted by Fischer Compliance using the re-issued order 2022-103-DWQ	Daniel Pruden

City of Roseville-SSMP Change Log			
10/30/24	SSMP Internal Audit Certification	Certified audit was complete on CIWQS	Daniel Pruden
3/12/25	SSMP Update	Updated SSMP per the internal audit and the re-issued order 2022-0103-DWQ	Daniel Pruden
4/16/25	SSMP Certification	SSMP Approved by City Council	Daniel Pruden

City of Roseville-SSMP Change Log			

City Council Resolution

RESOLUTION NO. 22-382

RECERTIFICATION OF THE CITY OF ROSEVILLE
SEWER SYSTEM MANAGEMENT PLAN

WHEREAS, in May 2006 the State Water Resources Control Board issued a state-wide General Waste Discharge Requirement (WDR) Order requiring all public entities that own or operate sanitary sewer systems greater than one mile in length that collect or convey wastewater to prepare a certified Sewer System Management Plan (SSMP); and

WHEREAS, on August 30, 2019, the City Council certified the City's SSMP; and

WHEREAS, provisions in the WDR require recertification of the SSMP every five years or if significant changes to the SSMP have been made; and

WHEREAS, the City Council has reviewed the revised Sewer System Management Plan.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that it hereby recertifies the City of Roseville Sewer System Management Plan.

PASSED AND ADOPTED by the Council of the City of Roseville this 5th day of October, 2022, by the following vote on roll call:

AYES COUNCILMEMBERS: Houdesheldt, Alvord, Roccucci, Mendonsa, Bernasconi

NOES COUNCILMEMBERS: None

ABSENT COUNCILMEMBERS: None

MAYOR

ATTEST:

City Clerk

THIS PAGE LEFT INTENTIONALLY BLANK

LIST OF ACRONYMS

BMP	Best Management Practice
CASA	California Association of Sanitation Agencies
CCTV	Closed-Circuit Television
CFR	Code of Federal Regulations
CDFW	California Department of Fish and Wildlife
CIP	Capital Improvement Plan or Capital Improvement Project
City	City of Roseville
CIWQS	California Integrated Water Quality System
CM	Corrective Maintenance
CMMS	Computerized Maintenance Management System
CBT	Computer Based Training
CWEA	California Water Environment Association
CVCWA	Central Valley Clean Water Association
EDU	Equivalent Dwelling Unit
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
EUD	Environmental Utilities Department
FOG	Fats, Oils, and Grease
FSE	Food Service Establishments
GIS	Geographical Information System
GPS	Global Positioning System
GRD	Grease Removal Device
GWDR	General Waste Discharge Requirements or Waste Discharge Requirements (WDR)
I/I	Inflow / Infiltration
ICS	Incident Command System
IERP	Integrated Emergency Response Plan
IWD	Industrial Waste Division
LRO	Legally Responsible Official
MGD	million gallons per day
MRP	Monitoring and Reporting Program
NASSCO	National Association of Sewer System Companies
NPDES	National Pollution Discharge Elimination System
O&M	Operation and Maintenance
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services
Order	SWRCB Order No. 2006-0003-DWQ adopted May 2, 2006
PACP	Pipeline Assessment and Certification Program
PdM	Predictive Maintenance
PM	Preventative Maintenance
PMP	Preventative Maintenance Program
POTWs	Publicly Owned Treatment Works
R&R	Rehabilitation and Replacement
RWQCB	Regional Water Quality Control Board
SDS	Safety Data Sheets
SERP	Spill Emergency Response Plan
SIUs	Significant Industrial Users

SOP	Standard Operating Procedure
SPW	Safety Plus Web
SPWA	South Placer Wastewater Authority
SSMP	Sewer System Management Plan
SPILL	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
UPC	Uniform Plumbing Code
USA	Underground Service Alert
WDP	Waste Discharge Permit
WW	Wastewater
WWC	Wastewater Collection
WWTP	Wastewater Treatment Plant

LIST OF TERMS

Authorized Representative – The person designated, for a municipality, state, federal, or other public agency, as either a principal executive officer or ranking elected official or a duly authorized representative of that person.

Blockage – Something that partially or fully blocks the wastewater from flowing through a sewer pipeline. The blockage can be caused by debris in the sewer, grease buildup, root intrusion, or a partial or complete pipeline collapse. If not caught in time, the blockage may cause an overflow.

California Association of Sanitation Agencies (CASA) - CASA is a non-profit, statewide trade association representing public agencies that provide wastewater collection, treatment, disposal, and/or water reclamation services to about 90 percent of the sewered population in California.
Website: http://www.casaweb.org/

California Water Environment Association (CWEA) – CWEA is an association of 8,000-plus professionals in the wastewater industry. CWEA is committed to keeping California's water clean. CWEA trains and certifies wastewater professionals, disseminates technical information, and promotes sound policies to benefit society by protecting and enhancing the water environment. CWEA offers services at the state level and locally through 17 local geographical sections. In addition, through their on-line bookstore, CWEA offers technical references for sewer system operation and maintenance.
Website: http://www.cwea.org/ .

Central Valley Clean Water Association (CVCWA) – CVCWA is an association comprised of over 50 wastewater treatment and collection system agencies. CVCWA's mission is to effectively represent the interests of public wastewater agencies in the Central Valley in regulatory matters and to support the exchange of information so members can best meet their business challenges.
Website: http://www.cvcwa.org/ .

Central Valley Regional Water Quality Control Board – Also known as Regional Water Board or RWQCB. The mission of this state regulatory agency is to: preserve, enhance, and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. Website: http://www.waterboards.ca.gov/centralvalley/ .

Dynamic Model – Computer hydraulic model simulation which solves the complete dynamic flow routing equations (St. Venant's equations) for accurate simulation of backwater, looped connections, surcharging, and pressure flow in a collection system.

Enrollee – The legal public entity that owns a sanitary sewer system, as defined by the GWDR, which has submitted a complete and approved application for coverage under the GWDR. This is also called a sewer system agency or wastewater collection system agency.

Fats, Oils and Grease (FOG) - Fats, oils, and grease that are discharged into the sanitary sewer collection system by Food Service Establishments (FSE), homes, apartments, and other sources. FOG is a major cause of blockages leading to increased maintenance and sometimes spills.

FOG Control Program – To be implemented at the Enrollee's discretion. May include public education program; plan and schedule for the disposal of FOG; legal authority to prohibit FOG related discharges; requirement to install grease removal devices; authority to inspect grease producing facilities; identification of sanitary sewer system sections subject to FOG blockages and the establishment of a cleaning schedule for each section; development and implementation of source control measures for all sources of FOG.

Geographical Information System (GIS) – A database linked with mapping, which includes various layers of information used by government officials. Examples of information found on a GIS can include a sewer map; sewer features such as pipe location, diameter, material, condition, last date cleaned or repaired. The GIS also typically contains base information such as streets and parcels.

Governing Board – This is the governing board of the sewer entity developing the SSMP. Examples would be the Board of Directors, the City Council, or the County Board of Supervisors.

GWDR – General Waste Discharge Requirements – A GWDR is an authorization to discharge waste with certain conditions, which can be issued on an individual basis or to a group of dischargers. The Statewide General WDR for Sanitary Sewer Systems was adopted by the SWCRB and will be implemented by the Regional Water Boards and SWRCB.

Infiltration – The seepage of groundwater into a sewer system, including service connections. Seepage frequently occurs through defective or cracked pipes, pipe joints, connections or manhole walls and joints.

Inflow – Water discharged into a sewer system and service connections from such sources as, but not limited to, roof leaders, cellars, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, around manhole covers or through holes in the covers, cross connections from storm and combined sewer system, catch basins, storm waters, surface runoff, street wash waters or drainage. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than a leak into the sewer itself.

Lateral – The portion of sewer that connects a home or business with the main line in the street. Sometimes sewer system agencies own or maintain a portion of the lateral.

> *Upper Lateral*: Portion of lateral from building to property line (or easement line), usually privately owned and maintained.
>
> *Lower Lateral*: Portion of lateral from property line (or easement line) to sewer mainline in the street or easement. This portion of the lateral is sometimes privately owned and maintained and sometimes publicly owned and maintained.

Monitoring and Reporting Program - The Monitoring and Reporting Program established in the WDR that establishes monitoring, record keeping, reporting and public notification requirements for the GWDR.

Private Lateral: That portion of the Lateral that is owned and maintained by the private property owner that it serves. Based on an individual agency's ordinance, this may just be the Upper Lateral or can include the Lower Lateral.

Preventative Maintenance (PM) – Regularly scheduled servicing of machinery, infrastructure or other equipment using appropriate tools, tests, and lubricants. This type of maintenance can prolong the useful life of equipment, infrastructure, and machinery and increase its efficiency by detecting and correcting problems before they cause a breakdown of the equipment, or failure of the infrastructure.

R-Value – Is the amount of rainfall that reaches the collection system via infiltration and inflow. This value is typically expressed as a percentage of total rainfall volume that reaches the collection system.

Regional Water Board – Is a short name for any of the nine regional boards including the San Francisco Bay Area Regional Water Quality Control Board and the Central Valley Regional Water Quality Control Board.

Rehabilitation and Replacement Plan (also referred to as a Capital Improvement Plan) – Identifies and prioritizes system deficiencies and implements short-term and long-term rehabilitation actions to address each deficiency.

Sanitary Sewer Systems – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant head works used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities are part of the sanitary sewer system and discharges into these temporary storage facilities are not to be considered spills.

Satellite Collection System – The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which the sanitary sewer system is tributary.

Sewer System Management Plan-SSMP – A series of written site-specific programs that address how a collection system owner/operator conducts their daily business as is outlined in the WDR. Each SSMP is unique for an individual discharger. The plan includes provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis. Also, must contain a spill response plan. Certification is offered by technically qualified and experienced persons and provides a useful cost-effective means for ensuring that SSMPs are developed and implemented appropriately.

Spill – A spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a spill under this General Order if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

Spill Emergency Response Plan – Identifies measures to protect public health and the environment. A plan must include the following: notification procedure, appropriate response plan, regulatory notification procedures, employee training plan, procedures to address emergency operations, a program that ensures all reasonable steps are taken to contain and prevent discharges.

Spill Categories- **Category 1** - any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:

- A surface water, including a surface water body that contains no flow or volume of water.
- A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sewer system or disposed of properly.

- Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility

Category 2 - is a spill of 1,000 gallons or greater from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

Category 3- is a spill of equal to or greater than 50 gallons and less than 1,000 gallons from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

Category 4 - is a spill of less than 50 gallons from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

Stakeholder - A person or organization that has a vested interest in the development and outcome of the SWRCB Order No. 2022-0103-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

State Water Resources Control Board: Also called the State Board. This is the State agency that developed and passed the GWDR for collection systems and the agency that maintains the spill reporting web site.

Static Model – A computer hydraulic model that uses the Manning's Equation to determine hydraulic capacity of the gravity pipelines and either the Manning's or Hazen-Williams Equations to determine the hydraulic capacity of the pressure pipeline system. The capacity is compared to the peak hydraulic flow in the system to determine potential deficiencies. The static model assumes the peak hydraulic flow occurs at all locations within the collection system at the same time.

Stoppage – Something that partially or fully blocks the wastewater from flowing through a sewer pipeline. A stoppage can be caused by debris in the sewer, grease buildup, root intrusion, or a partial or full collapse of the pipeline. If not caught in time, a stoppage may cause an overflow. This is also called a blockage.

System Evaluation and Capacity Assurance Plan – A required component of an agency's SSMP and is an important part of any agency's overall Capital Improvement Plan that provides hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event.

Wastewater Collection System: See Sanitary Sewer System.

EXECUTIVE SUMMARY

BACKGROUND

The City of Roseville (City) is a Council-Manager form of government in which responsibilities are vested in the City Council and City Manager. In this form of government, the City Council's role is that of a legislative policy-making body which determines not only local laws that regulate community life, but also determines public policy and gives direction to the City Manager. The City Manager administers the affairs of the city government in a business-like prudent manner.

The City's Public Utilities Commission studies and advises the City Council on all utility issues related to city-owned utilities (electric, water, sewer, and solid waste).

The City's Wastewater Utility is one of five utilities operated in the Environmental Utilities Department (EUD). The Wastewater Utility is responsible for operation and maintenance of all wastewater facilities owned by the City including the Publicly Owned Treatment Works (POTWs), the wastewater collection system, the water quality lab and the recycled water utility.

The City's Wastewater Collection (WWC) Division is a division of Environmental Utilities Department (EUD). The WWC Division is responsible for management, operation, maintenance, and capacity assurance of the City's sanitary sewer collection system, including inspecting, cleaning, repairing, and monitoring the gravity sewer lines, force mains, and lift station.

The City initiated a Sewer System Management Plan (SSMP) assessment in 2005 to evaluate how well the Wastewater Collection (WWC) Division would comply with the anticipated State Water Resources Control Board (SWRCB) Statewide General Waste Discharge Requirements (WDR) order No. 2006-0003 for Sanitary Sewer Systems. That SSMP assessment indicated that the City was positioned fairly well to comply with the SWRCB's SSMP requirements.

In March of 2007, the WWC division along with consultant assistance, began writing the SSMP and reviewing all remaining policies, procedures, and programs to comply with the SWRCB's WDR. The plan described how the City would address each element of the SSMP contained in the SWRCB's WDR to eliminate preventable Sanitary Sewer Overflows (SSOs). The WWC staff completed the development of the SSMP, which the City Council approved on 21 JAN 09.

On June 11, 2024, the City successfully completed its latest SSMP Audit, adhering to Attachment 10 of the Reissued Waste Discharge Requirement (WDR) State Water Board Order No. 2022-0103-DWQ. The results of the audit demonstrate the City's full compliance with the Reissued WDR and emphasize the effectiveness of several successful work programs that are currently being implemented. This commitment to maintaining high standards underscores the City's dedication to environmental responsibility and public health

The city continues to monitor, measure, and modify the existing SSMP as changes and program improvements are identified. The city has developed a Key Performance Indicator worksheet, which is used to monitor and measure the effectiveness of the various elements of the SSMP. Roseville's SSMP has been audited six times since being certified by the SWRCB

SEWER SYSTEM MANAGEMENT PLAN REQUIREMENTS

The City's Sanitary Sewer Management Plan (SSMP) developed in 2009 as a practical and essential resource, set a strong foundation for effective sewer management. This revised SSMP not only retains vital information from the original document but also integrates valuable insights from recent audits and best practices, ensuring the city takes its efforts to the next level. It is designed to address the specific size, scale, and complexity of the City's sanitary sewer system, fully complying with the requirements stated in the Reissued WDR, particularly in Specifications 5.2 and Attachment D.

CITY HISTORICAL SPILL PERFORMANCE

The statistical records from the City's Wastewater Collection Division (WWC) reveal that, prior to implementation of the SSMP, the City faced a moderate rate of sewer spills compared to similarly sized agencies in California. However as demonstrated in Table 1, since adopting the SSMP, the City's spill performance metrics have consistently outperformed State and Regional averages in both number and volume associated with spills. This consistent improvement highlights the City's commitment to effective wastewater management. Additionally, when spills do occur, they are swiftly addressed, ensuring that public health and the environment remain protected from any adverse effects.

Figure 1-System Spill

0 SSMP Overview

The City of Roseville (City) is required to comply with the State Water Resources Control Board Order No. 2022-0103-DWQ adopted December 6, 2022, entitled Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems (General Order).

In response to this General Order, the City has thoroughly revised its previous SSMP to align with the requirements outlined in the Statewide Waste Discharge Requirements (WDR) for Sanitary Sewer Systems. The SSMP serves as a "living document," showcasing the City's ongoing management activities, procedures, and decision-making processes for operating and maintaining the system.

The City developed an SSMP specific to the wastewater collection system operated and maintained by wastewater collection personnel in the City of Roseville. This SSMP documents the activities the city will utilize to manage, operate, and maintain its wastewater collection system. The city shall take all steps feasible to eliminate spill, but in the event an spill does occur, will take all steps necessary to contain and mitigate the negative impacts of an spill

1 Goals and Introduction

Att. D-1	The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the City's sanitary sewer system, reduce and prevent spills and contain and mitigate spills that do occur. The plan must include a narrative Introduction section that discusses the following items: (1) A general description of the Enrollee's SSMP, and discuss plan implementation and updates, (2) A schedule for updating the SSMP and scheduling internal audits. The schedule must include milestones for incorporating activities addressing spill prevention, and (3) A description of the Enrollee owned assets and service area.

1.1 SSMP Goals

The City's WWC Division has established eight goals to guide the implementation, and success of Roseville's SSMP. These goals are designed to facilitate and target the management, operation, and maintenance of the sanitary sewer collection system in a manner that will sustain the infrastructure, protect public health and the environment, and achieve compliance with State Water Resources Control Board's WDR for Sanitary Sewer Systems. These goals include:

1. Properly manage, operate, and maintain all portions of the City's wastewater collection system.
2. Provide adequate capacity to convey peak wastewater flows.
3. No repeat overflows from the same location.
4. Maintain a rate of Spills/100 miles of pipe, that is lower than the state and regional average.
5. Maintain a recovery rate for Spills/100 miles of pipe, that is higher than the state and regional average.
6. Mitigate the impacts that are associated with any Spills that may occur.
7. Comply with all applicable regulatory notification and reporting requirements.
8. Maintain high design and construction standards for new and rehabilitated infrastructure.

To achieve the goals outlined in the City's SSMP, the City is committed to implementing various programs that address issues related to its wastewater system. The City takes pride in maintaining strict design and construction standards, along with a robust operations and maintenance program. This program includes chemical root control, closed circuit television (CCTV) inspections, and skilled construction crews capable of performing both simple and complex repairs to the system.

The City emphasizes proactive maintenance and inspection and is well-equipped to handle the challenges of operating its wastewater collection system while ensuring the highest standards of service delivery.

Although the City is proactive in preventing spills, it has also established an effective Spill Emergency Response Plan to respond quickly if a spill occurs. The City will take all necessary actions to contain the spill and mitigate its negative impacts. Additionally, the City utilizes Key Performance Indicators (KPIs) to evaluate the effectiveness of its spill management efforts.

1.2 SSMP Plan Update

The City of Roseville completed a comprehensive SSMP audit conducted by Fischer Compliance on June 11, 2024. This audit confirmed that the City's long-standing SSMP has been effective in meeting the required elements through its various programs and the adoption of new technology.

Since most sewer spills originate from lower laterals, the City invested in a lateral lining trailer and set an annual KPI target for lateral lining to address issues identified during CCTV inspections. The City consistently increases its KPI goals and has achieved significant milestones in cleaning, televising, responding to service requests, and making main and lateral repairs. These efforts demonstrate its commitment to proactive infrastructure management and reducing spills from the sewer system.

Additionally, the City has utilized the look-up tool on the CIWQS website to identify the date of the next scheduled audit and the subsequent update of its SSMP, as shown in Table 1.

Table 1 – SSMP Update Schedule

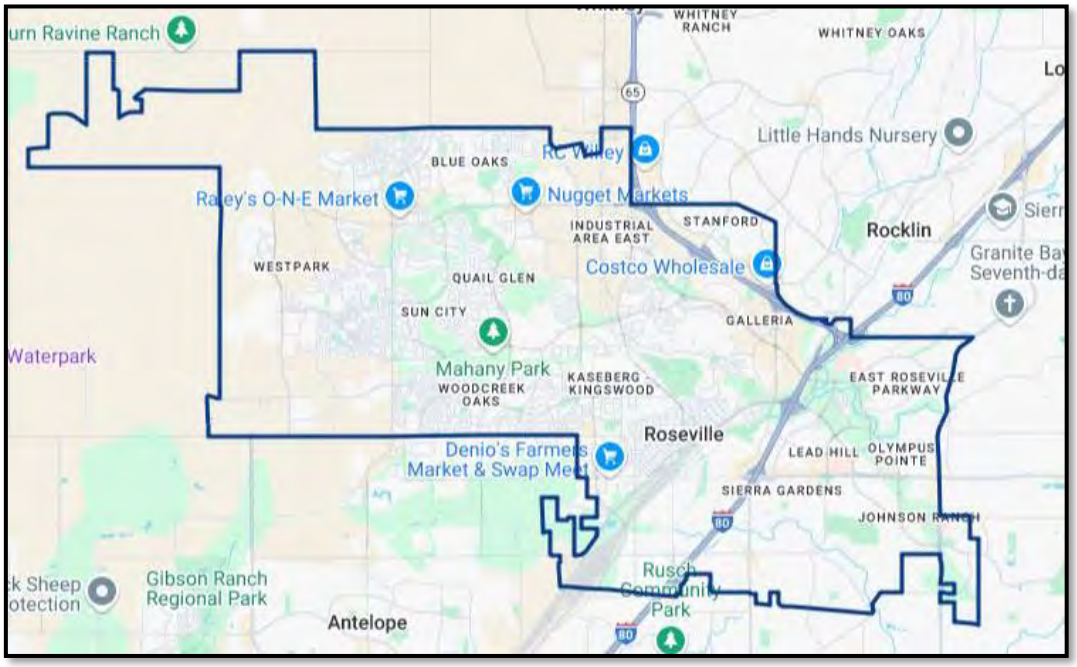
Sewer System Management Plan & Subsequent Update Due Dates					
System Name	**WDID Number**	**Original Plan Required Due Date**	**Required Plan Update Due Date**	**Required Plan Update Due Date**	**Required Plan Update Due Date***
Dry Creek CS	5SSO10935	5/2/2009	5/2/2014	5/2/2019	5/2/2025

Audit Due Dates								
System Name	**WDID Number**	**Original Required Plan Audit Due Date**	**Required Plan Audit Due Date**	**Required Plan Audit Due Date**	**Required Plan Audit Due Date**	**Required Plan Audit Due Date**	**Required Plan Audit Due Date**	**End of Required 3-Year Audit Period****
Dry Creek CS	5SSO10935	5/2/2011	5/2/2013	5/2/2015	5/2/2017	5/2/2019	5/2/2021	5/2/2024

1.3 Sewer System Asset Overview

Figure – 2 outlines the City of Roseville's geographical service area. The information provided in this SSMP was gathered from the City's Economic Development website located here: City of Roseville Demographics

Figure 2 – City of Roseville Service Area



The city's service area covers approximately 44.20 square miles and includes 54,622 residential connections, 1,932 commercial connections, and 600 industrial connections, as well as two regional wastewater treatment plants. The Wastewater Collection Division serves approximately 166,000 sewer customers. The wastewater collection and conveyance system is comprised of 885 miles of sewer pipe, with diameters ranging from 4 inches to 84 inches. It includes 12,538 manholes and 17 neighborhood lift stations, which together convey an average dry weather flow of about 18.5 million gallons per day (MGD). Sanitary sewage is transported from the City's eastern boundaries to the Dry Creek Wastewater Treatment Plant and from its northern and western boundaries to the Pleasant Grove Wastewater Treatment Plant.

1.4 Updated Sewer System Map

The WWC Division maintains an up-to-date electronic map of the wastewater collection system as required by Att. D-1.3 of the Re-issued Order. The City uses ESRI GIS software to map all utility-related data. The GIS map platform, referred to as Roseville GeoViewer, shows all gravity main segments with the direction of flow, manhole information, pumping facilities, pressure pipes, and valves. In addition, the GeoViewer allows users to turn on/off different layers and base maps to display the information they need.

THIS PAGE LEFT INTENTIONALLY BLANK

2 Organization

Att. D-2	The Plan must identify organizational staffing responsible and integral for implementing the local SSMP through an Organizational chart or similar document that includes, the name of the Legally Responsible official as required in section 5.1;The position, titles, telephone numbers and email addresses for management, administrative and maintenance positions responsible for implementing specific SSMP elements; Organizational lines of authority; and Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies as applicable.

2.1 Legally Responsible Official (LRO)

The City of Roseville has identified the Wastewater Utility Manager and the Wastewater Collection Superintendent as the LRO's or authorized representatives for the wastewater collection division. Historically, the Wastewater Collection Superintendent is responsible for the certification of spill reports involving Roseville's wastewater collection system.

2.2 SSMP Responsibility Chart

The City of Roseville operates under a Council-Manager form of government, where responsibilities are shared between the City Council and the City Manager. The City Council serves as the legislative and policy-making body, establishing local laws, shaping public policy, and providing guidance to the City Manager. The City Manager oversees the administration of city operations in a professional and efficient manner, delegating authority to each Environmental Utilities (EU) management group to ensure the effective operation of their respective utilities. The following chart provides a detailed overview of position descriptions and responsibilities related to SSMP implementation.

SSMP Element	Responsible Position
I. Goals	Responsibility for the divisions goals resides with the WWC Superintendent, Mr. Dan Pruden. However, goals for the wastewater collection division are developed through collaboration between the WWC Superintendent, the WWC Supervisor and field crews. Mr. Pruden can be reached at (916)746-1891
II. Organization	The Environmental Utilities (EU) Director, Mr. Sean Bigley, recommends any updates to the City Manager for organizational structure within the Wastewater Collection Division. Mr. Bigley can be reached at (916)774-5770.

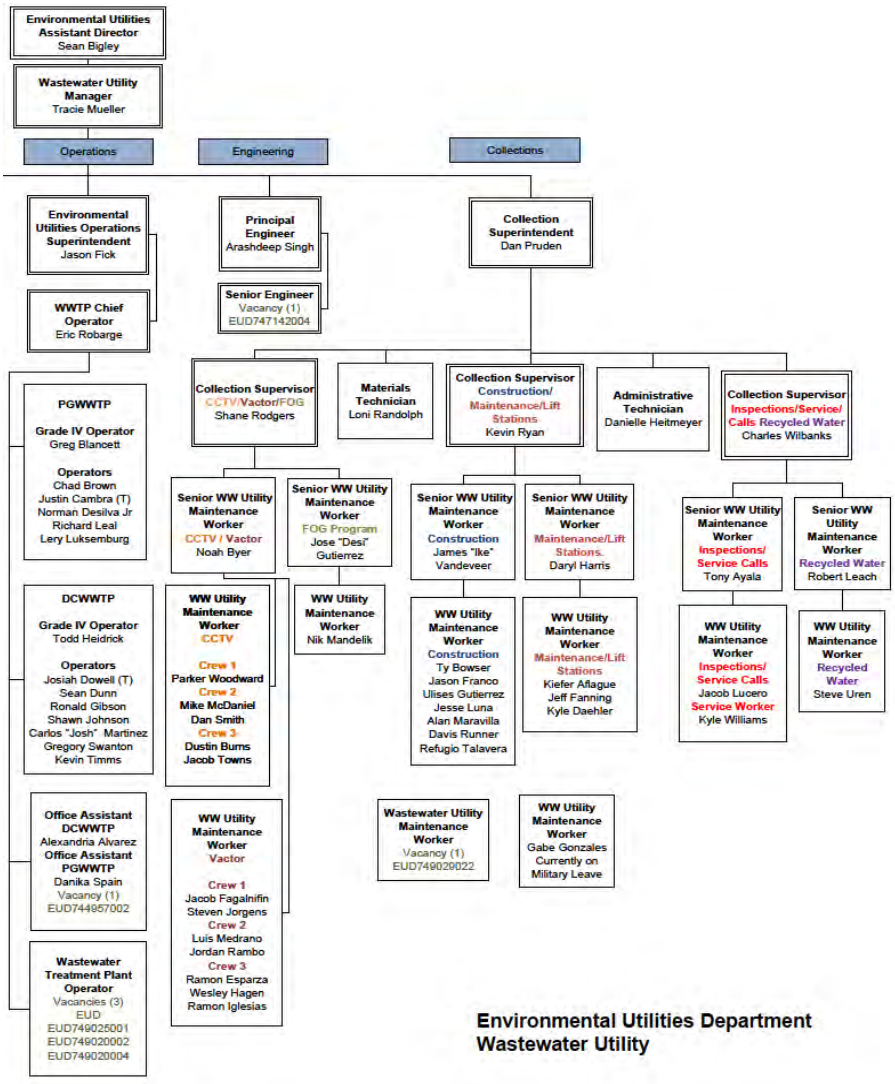
III.	Legal Authority	The City Manager, City Attorney and Roseville City Council ultimately uphold city ordinances within the Roseville Municipal Code.
IV.	Operations & Maintenance	The Wastewater Collection Superintendent has overall responsibility for the operation and maintenance of the collection system. The Asst. EU Director, (TBD), oversees, recommends, and administers the O&M budget. EU Engineering provides support through the GIS Division for up-to-date mapping of the system.
V.	Design and Construction Standards	The Development Services Division and EU Engineering collaborate to identify and maintain the design and construction standards. Development Services Division manages the inspection of all new development, CIP and infill projects to ensure all standards are met. All projects receive EU Director approval related to Utility work.
VI.	Spill Emergency Response Plan	The Wastewater Collection Superintendent and Supervisors Mr. Shane Rodgers, Mr. Kevin Ryan and Mr. Cody Wilbanks, maintain the spill emergency response plan. The plan is implemented as an annual training, where revisions to the plan may be made based on field crew feedback. Mr. Rodgers can be reached at (916)746-1894, Mr. Ryan at (916)746-1893 and Mr. Wilbanks at (916)746-1889
VII.	FOG Control Program	The Wastewater Collection Superintendent and Supervisor identify hot spots from Food Service Establishments (FSE) and maintain an effective cleaning PM schedule to eliminate spills. The FOG Control Program including permitting of FSEs, inspection of facilities and monitoring pump out records is administered by the Wastewater Collection Superintendent.
VIII.	System Evaluation and Capacity Assurance Plan	EU Engineering Principal Engineer, Mr. Arashdeep Singh, administers the SECAP program to ensure the hydraulic model is up to date, and to assure capacity for current and future development. Mr. Singh can be reached at (916)746-1854
IX.	Monitoring, Measurement and Program Modifications	The Wastewater Collection Superintendent with assistance from the Wastewater Collection Supervisors monitors the implementation and assesses the success of the overall SSMP elements. The superintendent tracks Key Performance Indicators and adjusts programs as needed.

X.	SSMP Audits	The Asst EU Director is responsible for SSMP program audits, with assistance from the Wastewater Collection Superintendent and Principal Engineer for Wastewater Division
XI.	Communication Plan	The EU Public Information Officer, Mr. Maurice Chaney, communicates with the EU Director, City Manager, City Council, nearby agencies, and the public on the City's SSMP monitoring and modifications. Mr. Chaney can be reached at (916)774-5539.

2.3 Organizational Lines of Authority

The Wastewater Collection Division is one of five utilities operated in the Environmental Utilities Department (EUD). The Environmental Utilities Department has defined its lines of authority in the attached Figure 3.

Figure 3 – EUD Wastewater Utility

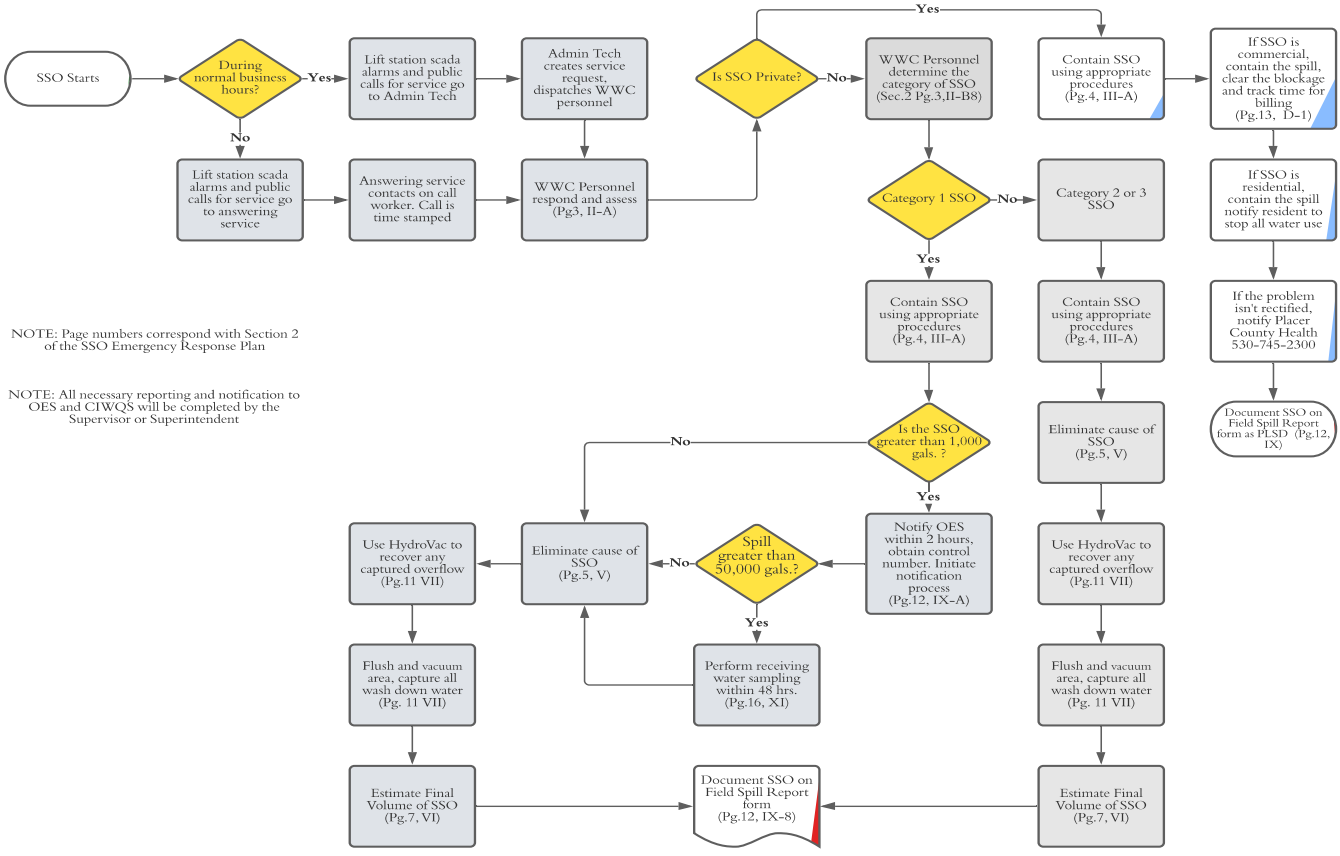


2.4 Chain of Communication Reporting Chart

Office hours for the WWC Division are Monday through Friday from 0630 to 1600, except for holidays. The Administration Technician or service call worker receives all service calls during regular business hours. If received in the office, a service request is created with the caller information, the problem, and contact information. This information is transferred to the service call worker, in which they respond, access the problem, and provide a solution. An answering service, contracted by WWC Division, receives all after-hours calls to gather information and dispatch to the on-call service worker via an assigned mobile phone. The on-call service worker is available 24 hours per day and is furnished with a service van and equipment to facilitate a timely response. A response time goal is 20 minutes during business hours and 40 minutes for after-hour service calls. The van is equipped with containment devices to manage lower lateral blockages and spills, and to prevent spills from entering a storm drain inlet or channel. Should the situation require additional resources, the on-call worker would contact crew members from the call-out sheet for assistance.

Figure 4, included in the division's SERP, summarizes the chain of communication when receiving calls for service.

Figure 4 – Spill Chain of Communication



THIS PAGE LEFT INTENTIONALLY BLANK

3 Legal Authority

Att. D-3 The plan must include copies or an electronic link to the Enrollee's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority to: (1).Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages; (2). Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross-connections of sanitary sewer infrastructure to storm sewer infrastructure; (3). Require that sewer system components and connections be properly designed and constructed; (4).Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee; (5). Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and (6). Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

The Roseville Municipal Code (RMC) found here, Roseville Municipal Code, provides specific legal authority for the WWC division to operate and manage the wastewater collection system. The City's current legal authority is established through existing codes, regulations, ordinances, and permitting procedures that allows the City to require and enforce various measures for ensuring the proper and efficient operation, management, and maintenance of the City's wastewater collection system. Table 2 indicates the code section for the legal authority required.

Table 2 – RMC Codes for Legal Authority

Ability to prevent illicit discharges into the wastewater system	14.20.040	Definition of illicit discharge
	14.26.010	Purpose and policy of industrial wastewater
Ability to require all sewers and connections are properly designed and constructed	14.12.040	Building and sewer connection requirements
	14.14.030	FOG discharge permit required
	14.14.070	Prohibitions for FSE construction
Ensure proper access to portions of the lateral owned by the city	Charter Article X Sec 10.01	General powers respecting utilities
	14.14.290	Right of entry
Ability to limit the discharge of FOG	14.12.050	Use of public sewers
	14.14.010	Purpose
	14.14.030	FOG discharge permit required
	14.14.040	Fog discharge limitation

	14.14.070	Prohibitions
	14.14.120	Interceptor maintenance requirements
Ability to enforce all sewer ordinances	14.12.060	Sewer use- enforcement authority
	14.14.330	FOG – determination of non-compliance
	14.14.350	FOG- Permit suspension or revocation
	14.14.360	FOG- penalties and violations

3.1 Industrial Pretreatment Program

In addition to the RMC, the City of Roseville Industrial Waste Division (IWD) oversees and administers the Pretreatment Program Enforcement Response Plan (ERP). This plan outlines operational procedures intended to ensure that the Significant Industrial Users (SIUs), and the small Commercial/Industrial dischargers to the sanitary sewer system are appropriately permitted and monitored. To assure compliance by these dischargers, the IWD implements enforcement procedures specified by the U.S. Environmental Protection Agency (EPA) in accordance with 40CFR 403.5 (f) (5). The ERP specifies criteria by which IWD personnel determine the enforcement action most appropriate to the nature of the violation. The Pretreatment Enforcement Response Plan is attached to the SSMP as Appendix 3-1.

3.2 Design and Construction Standards

The City of Roseville's design and construction standards regulate and guide the design and preparation of plans and construction of the City of Roseville's sanitary sewer systems and related public improvements, and set guidelines for all private works, which involve related improvements. The City's Design and Construction standards are located on their website at: Roseville Design and Construction Standards

3.3 Sewer Access Authority

The RMC section 10.01 states the City shall possess all powers granted to cities by state law to construct, condemn, purchase, acquire, add to, maintain, and operate, either within or outside its corporate limits, including, but not by way of limitation, public utilities for supplying water, light, heat, power, gas, transportation, sewage and refuse collections, treatment and disposal services, or any of them, to the municipality and the inhabitants thereof; Each city-owned utility shall be financially self-sufficient, and shall fully compensate the city general fund for all goods, services, real property and rights to use or operate on or in city-owned real property.

3.4 Fats Oils and Grease

The City of Roseville limits the discharge of Fats, Oils and Grease from Food Service Establishments through Section 14.14 of the RMC. Section 14.14 was adopted to facilitate the maximum beneficial use of the city's sewer services and facilities while preventing blockages of the sewer lines resulting from discharges of fats, oils, and grease (FOG) into the public sewer, and to specify appropriate FOG discharge requirements for food service establishments (FSEs). Section 14.14 establishes conditions for permitting, inspection, pumping and recordkeeping, and right of entry for inspection. The City's FOG ordinance is located at FOG Ordinance

3.5 Regulation of Sewer Use – Enforcement

Sections 14.12.060 and 14.14.360 (FOG Ordinance) of the RMC prescribes the enforcement actions available to the city when violations of the code are discovered. Violation of the RMC may be charged as either an infraction or misdemeanor upon discretion of the City Attorney.

3.6 Inter-Agency and Satellite Agreements

The City of Roseville operates two Regional Wastewater Treatment Facilities where sewer from satellite systems flow into City wastewater mains. As such, the Environmental Utilities Department maintains the following agreements to address regional and satellite systems.

3.6.1 Joint Exercise of Powers Agreement South Placer Wastewater Authority

The purpose for this agreement is to provide for planning, acquisition, financing, ownership, construction, and operation of Regional Wastewater Facilities. The participants in the SPWA create a public entity which is separate from the City, the District, and the County. The SPWA services the areas the City of Roseville, Placer County and South Placer Municipal Utility District. The agreement is attached to the SSMP as Appendix 3-2.

3.6.2 South Placer Wastewater Facilities Operation and Use Agreement

The agreement known as the Joint Powers Agreement, supersedes all other previous agreements. The new agreement indicates the City of Roseville shall operate and maintain Regional Wastewater Facilities for the mutual benefit of and provide wastewater treatment services to the areas depicted on Exhibit A, areas which are within the jurisdictional boundaries of the City, District and County, so long as the District and County pay the City their proportionate shares. This agreement is attached to the SSMP as Appendix 3-3

3.6.3 Contract and Operating Agreement between SRCSD and SASD

This agreement between the City of Roseville, Sacramento Area Sewer District and Sacramento Regional County Sanitation District defines points where flows enter and exit each other's area of service and points of demarcation for City and County assets. In addition, the agreement is to meet regulatory requirements and provide a basis for SASD, SRCSD and the City of Roseville to work together to provide service to users, establish operation and maintenance responsibilities and outline rates and fees. This agreement is attached to the SSMP as Appendix 3-4

3.7 Legal Authority Documents

Refer to Appendices 3-1 through 3-4 for Legal Authority Documents:

Appendix 3-1 Pretreatment Program Enforcement Response Plan – TOC
Appendix 3-2 Joint Exercise of Powers Agreement for the South Placer Wastewater Authority
Appendix 3-3 Agreement Regarding the Operation and Use of the South Placer Regional WW Facilities
Appendix 3-4 Wastewater Service Agreement by Contract & Operating Agreement Between SASD, SRCSD and City of Roseville.

THIS PAGE LEFT INTENTIONALLY BLANK

4 Operation and Maintenance

Att. D - 4	The plan must include the items listed below that are appropriate and applicable to the Enrollee's system.(1). An up to date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and regional Board staff access to the maps. The maps must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries. (2). A scheduling system and data collection system for preventative operation and maintenance activities conducted by staff and contractors. The scheduling system must include: Inspection and maintenance activities; Higher frequency inspections and maintenance of known problem areas, including areas with tree root problems; Regular visual and closed circuit television (CCTV) inspections of manholes and sewer pipes. The data collection system must document data from system inspection and maintenance activities, including system areas/components prone to root intrusion potentially resulting in system backup and/or failure. (3). In house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover: The requirements of this order; The enrollee's Spill Emergency Response Plan procedures and practice drills; Skilled estimation of spill volume for field operators; and Electronic CIWQS reporting procedures for staff submitting data. (4). An inventory of sewer system equipment, including the identification of critical replacement and spare parts.

The Operation and Maintenance (O&M) Program is essential to fulfill the city's duty to serve the residents and businesses of the City of Roseville. It is also the most significant part of the city's effort to eliminate the occurrence of SSOs and stay compliant with the general order.
The city's O&M program is comprised of these elements:

1. Collection System Mapping
2. Preventive Maintenance
3. Rehabilitation and Replacement
4. Staff Training and Certification
5. Equipment And Replacement Parts Inventories, Including Critical Replacement Parts

4.1 Collection System Maps and Information

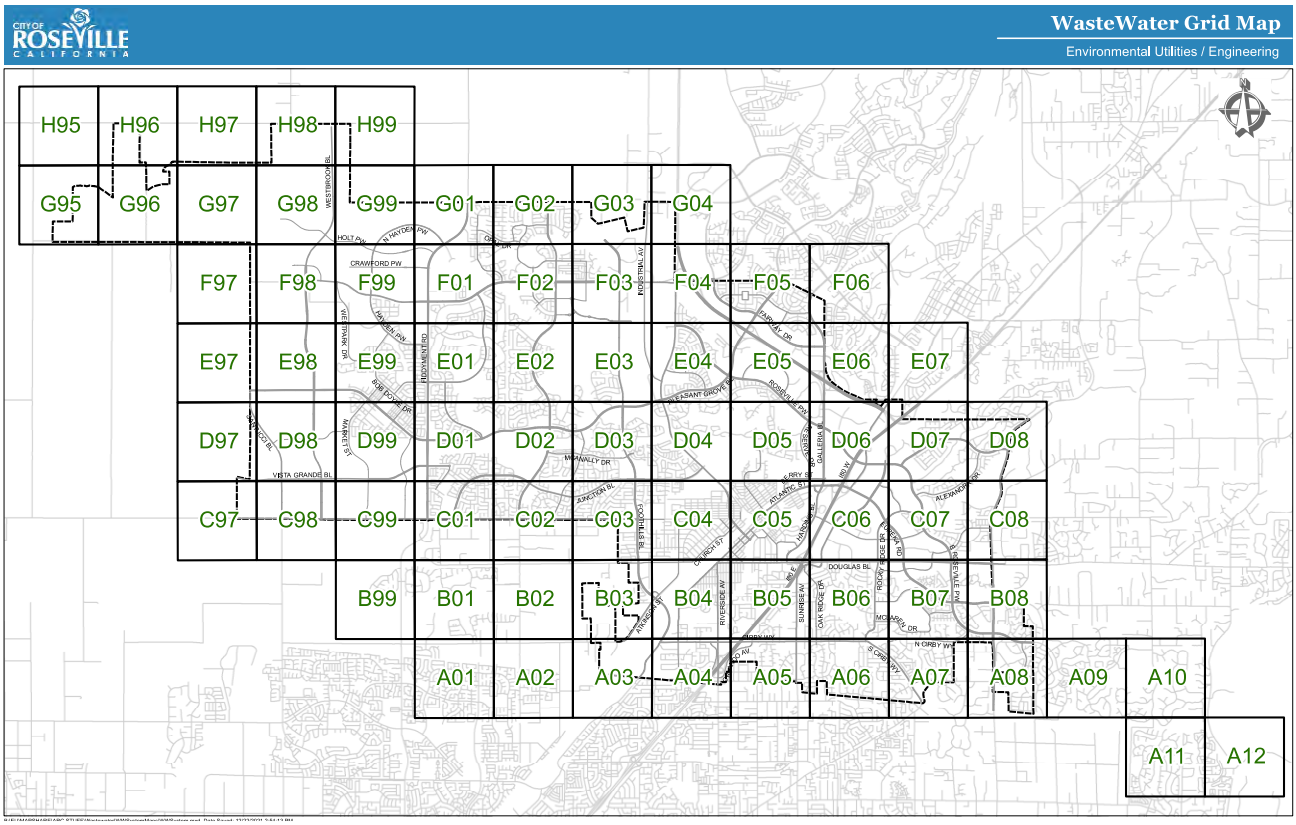
The WWC Division maintains an up-to-date electronic map of the wastewater collection system as required by Section D.13(iv)(a) of the Order. The City uses ESRI GIS software to map all utility-related data. The GIS map platform, referred to as Roseville GeoViewer, shows all gravity main segments with the direction of flow, manhole information, pumping facilities, pressure pipes, and valves. In addition, the GeoViewer allows users to turn on/off different layers and base maps to display the information they need. Additional map layers available in GeoViewer include:

- Hot Spot Locations
- CIPP Lined Mainline Segments
- Food Service Establishments and Grease Removal Devices
- Waterways
- Roadways

- City Boundaries
- Stormwater System

Figure 5 shows the GIS map system, and how it incorporates each of the sewer shed basins within the City of Roseville's jurisdictional boundaries.

Figure 5 – Wastewater Grid Map



4.1.1 Map Update Policy

This policy aims to provide uniformity in identifying, verifying, documenting, and tracking the changes to the sewer mapping system. In addition, this document will describe the process in which the mapping system shall be updated.

A significant effort is placed upon maintaining a very complete, accurate, and up-to-date wastewater collection map which is an essential component for the proper operation and maintenance of a wastewater collection system. Maps are updated as new sub-divisions are accepted or when field crews repair, rehabilitate or replace components of the system that require updating the maps. A mapping update policy has been developed to address procedures that ensure mapping updates or revisions are correct and completed in GIS.

CCTV crews identify discrepancies between existing system maps and real time field data. The operator shall note the discrepancies and submit changes to the WWC Supervisor when differences are identified.
Construction and Maintenance crews identify any new infrastructure added to the system. Information required for CMMS Map Change will be directed to the WWC Supervisor. The information required for Mains, Laterals, and SMH's are:

- Mains - Grid map area, the distance between SMH's and pipe size, pipe material
- Laterals –Grid map area, C/O location, length, depth, pipe size, material, and depth.
- SMH – Grid map area, depth, barrel diameter, access cover size and material, number of and pipe size of inlets and outlets, barrel lining/coating, drops Y/N.

The Supervisor will create a work order in Maximo listing the Classification as "Map Change." Then select "Log" and "Add Row" to add a description of the asset that needs to be added/changed. In the Log section of the work order, the Supervisor will list all the details gathered from the field and attach a map if required. Do not change the status of the work order in Maximo CMMS.
The GIS group automatically receives all map change requests. Once all map changes are updated, the Supervisor will receive an email informing them of the completed work order, at which time the GIS group closes the work order.

4.2 Operation and Maintenance

The WWC Division's O&M program focuses on eliminating sewer backups and overflows, increasing the lifespan of the infrastructure, and bringing uninterrupted service to the residents of Roseville. WWC division provides service to 146,875 customers. Within the 43.05 square miles of Roseville, the City inspects and maintains 17 lift stations, approximately 578 miles of sewer mains ranging from 6- to 84- inch diameter, and 293 miles of lower laterals. **Table 3** below represents a few performance indicators the WWC division tracks and measures their performance against.

Table 3 – Operation and Maintenance Activities

	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Total Miles of Pipe Cleaned	**283.12**	**226.1**	**235.9**	**296.14**	**288.73**	**301.36**	**295.57**
Total Miles of Pipe CCTV Inspected	**64.1**	**119.9**	**94.65**	**94.65**	**50.05**	**51.59**	**53.53**
Number of SSOs Caused by Hot Spots	**0**	**0**	**0**	**0**	**0**	**1**	**1**
Miles of Pipe Rehabilitated or Repaired	**1.49**	**.5**	**.54**	**3.4**	**3.83**	**.29**	**4.43**
Total Number of Spills Main and Lateral	**25**	**31**	**32**	**51**	**32**	**30**	**27**

4.2.1 Preventative Maintenance Program

The WWC Division of the Environmental Utilities Department is responsible for the City's sewer system and implements preventative and corrective maintenance approaches to operate and maintain the system efficiently. The division's PM program involves cleaning sewers on a recurring schedule, including regular CCTV inspection to determine the efficiency of those PM activities. The GIS system divides the city into grids, enabling targeted PM scheduling for an individual grid based on history, CCTV inspection, and infrastructure's age. The WWC division schedules cleaning as often as every three months or up to ten years, with the age and condition of the pipe being key factors. The scheduled maintenance projects that are identified in Maximo are included in ***Appendix 4-1.***

Corrective maintenance projects and work orders are a concerted effort utilizing the PM and CCTV inspection programs. Information gathered during routine cleaning, repair work and inspection, generates the development of repair and replacement work orders. The following paragraphs describe the City's current operation and maintenance procedures for maintaining the wastewater collection system.

4.2.1.1 PM Cleaning Program

The WWC Division is equipped with three combination sewer cleaners to keep the sewer system operating efficiently and minimize line stoppages and calls for service. Sewer cleaning using hydraulic or mechanical methods performed on a routine basis helps remove accumulated debris in the pipe such as sand, silt, grease, roots, and rocks. Scheduled maintenance projects have been developed for each map grid based on historical data and field crew input.

4.2.1.2 Hot Spot Cleaning

In addition to scheduled maintenance, the WWC division aggressively cleans identified problem areas, known as hot spots. This list of hot spots has been compiled based on historical data, field crew observations, and CCTV condition assessments. These mainline segments tend to have more frequent backups due to sluggish flows, poor grade, and sags, The frequency of Hot Spot cleaning ranges from 1-6 months, depending on history and CCTV inspection data. The WWC division strives to reduce and eliminate these hot spot areas during CIP projects or rehabilitation projects performed by City crews. Currently, the WWC division has 276 segments identified as Hot Spots.

4.2.1.3 Electroscan Inspection

To identify and quantify locations of I&I entering the sewer system, the WWC division invested in Electroscan Technology, adding the equipment to a newer CCTV inspection truck. Using Electroscan, a probe is pulled through the mainline, and electricity is measured and used to identify any defect where the pipe may leak. This enables crews to pinpoint CCTV inspection of the pipe section before scheduling repair work to correct the deficiency. Electroscan has also proved valuable as a QA/QC tool for accepting Cured-In Place-Pipe rehabilitation projects. The city performed pre-post Electroscan inspections on sewer mains rehabilitated with CIPP technology. This pilot study proved the effectiveness of the Electroscan Technology in locating defects CCTV inspection didn't identify.

4.2.1.4 CCTV Inspection Program

The WWC Division operates three CCTV vans to inspect the wastewater collection system. CCTV operators utilize NASSCO's PACP coding format when inspecting sewer mains and laterals. All observations are coded and captured in the Granite Net Software system and are archived in a database for access. CCTV inspection crews also perform continual condition assessment inspections on existing infrastructure. For example, CCTV crews inspect mainline segments and lower laterals, looking for deficiencies to minimize problems within the collection system. In addition, sewer inspections identify unwanted connections and sources of I&I into the wastewater system. Finally, CCTV crews inspect new subdivisions or commercial projects before being accepted into the city and the time of warranty acceptance. These inspections are crucial to receiving infrastructure installed to City design and construction standards. **Figure 6** includes a sample CCTV report from GraniteNet inspection software.

Figure 6 – CCTV Inspection

GraniteNet
ASSET INSPECTION / DECISION SUPPORT SOFTWARE

CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

Main Inspections and Map

Mainline ID:	City:	Address:	Project name:
SND-C05-389/SMH-C05-163	**ROSEVILLE**	**JEFFERSON ST.**	**Maintenance**
Upstream node:	Downstream node:	Start date/time:	End date/time:
SND-C05-389	**SMH-C05-163**	**9/22/2020 7:34 AM**	**9/22/2020 7:55 AM**
Pipe shape:	Pipe material:	Pipe height:	Pipe width:
Circular	**Clay**	**6.0 in.**	
Asset length:	Surveyed distance:	Reason:	Work order no.:
60.4 ft.	**72.9 ft.**	**Problem**	**1072619**
Operator:	Weather:	Status:	
E05488	**Dry**	**Completed**	
Comments:			

Observations

Distance	Dir.	Length	From/To	Code	Modifier/Severity	Rating
0.0 ft.	U	18.0 ft.	/	Sag	Medium	10
4.1 ft.	U		11 / 1	Broken	Soil Visible - Large	75
4.1 ft.	U		/	Vermin	Cockroach	
19.9 ft.	U		12 /	Broken	Hole	5
26.5 ft.	U		12 / 5	Root-in-Joint	Light	5
40.0 ft.	U		11 /	Lateral	Capped	
46.6 ft.	U		6 / 12	Joint Offset	Small	5
47.1 ft.	U	25.8 ft.	/	Sag	Light	5
50.8 ft.	U		7 / 1	Joint Offset	Small	5
58.1 ft.	U		12 /	Lateral Connection Problem	Connection Protruding	25
66.9 ft.	U		11 / 1	Crack	Multiple - Wider	15
68.6 ft.	U		2 /	Lateral	Capped	0
70.6 ft.	U		11 /	Lateral	Capped	0
72.8 ft.	U		12 /	Cleanout		5
72.9 ft.	U		/	End of Pipe		5

4.2.1.5 Root Control Program

The WWC Division has an effective chemical root control program, using Vaporooter products to limit or eliminate root growth in the City-owned portion of the lower lateral. In addition, the WWC division has two qualified applicators licenses (QAL) that allow the division to chemically treat laterals for a more effective root control program rather than contracting out for this service. This program has dramatically reduced the division's exposure to back injuries resulting from loading and unloading a gas-powered eel from the truck each time. It also lessens the element of crush injuries and trip and fall hazards from eel rods across the ground. In addition, chemical root control has successfully reduced the maintenance time per lateral, which is evident in the reduction of lower lateral backups and overflows.

4.2.1.6 Lift Station Inspection and Maintenance

The city currently has 17 neighborhood lift stations throughout its service area. All 17 stations are equipped with a duplex or triplex pumping system, with the lead/lag pump cycled based on pumping hours. Power outages happen very infrequently. However, all new lift stations and four of the currently active seventeen lift stations are equipped with a 4-hour emergency overflow storage basin. WWC crews inspect the stations monthly, cycle pumps through a pull-down sequence, test floats for operation, and record the condition and any deficiencies at the station. In addition, all Lift Stations are equipped with a SCADA system, which the WWTP operators monitor 24 hours per day. Besides inspections, City crews perform wet-well cleaning and de-ragging of pumps every six months to eliminate pump failures and potential odor complaints.

4.2.1.7 Easement Maintenance Program

To enhance access to hard-to-reach areas while permanent easement access solutions are developed, the City has acquired a sewer easement machine, which extends the capabilities of its current hydro-vac equipment. Additionally, the City owns and operates essential equipment, including a flail mower and box scraper attachments for its skip loader, to support easement maintenance. Once fully developed, the Easement Maintenance Program will include scheduled inspections and maintenance, vegetation management, including the use of chemical weed control to ensure unobstructed access and debris removal to ensure clear paths for crews and equipment. Regular inspections will help identify issues such as encroachments, erosion, or obstructions that could impact sewer lines or manholes, while vegetation management will focus on trimming or removing trees and plants that may damage infrastructure or hinder maintenance activities.

4.2.2 Corrective Maintenance Program

WWC construction crews perform all repair work to the existing infrastructure. Work orders and projects are developed from information found during maintenance activities, inspections based on calls for service and condition assessment inspection findings. The Corrective Maintenance programs are defined below.

4.2.3 Infrastructure Repair

The WWC Division performs routine, emergency, and complex repairs, and replacements to its existing infrastructure. This work includes sewer main installation and repair, sewer manhole installation, and lateral repair and replacements. As a result, city crews have undertaken large projects, installing new mainline segments that have eliminated hot spots, replaced aging infrastructure, and upsized mains to provide additional system capacity. In addition, the WWC Construction crew has performed contractor caliber work at the City's Regional Wastewater Treatment Plant at significant cost savings for the city.

4.2.3.1 Infill Projects

Depending on their schedule and workload, the WWC division construction crew holds the first choice for any proposed connection to existing infrastructure. If city crews are busy, contractors will be allowed to perform the work under the direction of a city inspector. However, if city crews complete the work, the contractor will schedule the work through the WWC Supervisor. City crews will complete the work on a time and material basis for the contractor.

4.2.3.2 CIPP Lateral Lining

The vast majority of the city's spills have occurred in the lower lateral, caused by breaks in the VCP and root intrusion. As a result, the city invested in the trenchless technology Cured in Place Pipe (CIPP), purchasing an LMK lateral lining trailer. Lateral lining through an existing cleanout makes it possible to repair and reinstate the pipe integrity without disturbing landscape, sidewalks, roadways and with minimal disruption of service to the resident. CIPP essentially creates a pipe
within a pipe and eliminates further root intrusion and sewer overflows. During condition assessment, lower laterals are CCTV inspected, and work orders are created for those identified as viable for CIPP lining. These work orders are then prioritized based on history and the number of calls for service.

4.2.3.3 Cleanout Installation Program

The WWC Division invests many resources in preventing backups that potentially become spills. Since the City owns the lower portion of the lateral, access to the lateral through a cleanout is imperative in assessing its condition. The WWC Division has identified homes and businesses without a city cleanout and developed projects to install cleanouts at each service location. One installed, the lower lateral is inspected and if necessary, additional work orders for maintenance or repair are created. Currently, the city installs over 100 cleanouts per year on this project.

4.2.3.4 Wet Weather Protocol

The City of Roseville Wastewater Division has prepared the sewer infrastructure in off-site areas and creek crossings to withstand flooding during severe rain events. The division has identified and grouped all sewer manholes along creeks into an Off-Site Sewer Manhole Inspection project. All manholes within the project have concrete collars poured to deflect any floating debris should creek levels leave their banks. In addition, wastewater crews have secured the manholes with either bolt-down covers or drilled and bolted tabs to ensure the covers from moving. Additionally, the division has installed all creek crossings per the City standard detail SS-9, installed on 8" I-beams driven a minimum of 30' into bedrock. Ductile iron pipe crossings are then attached with ½" x 3" wide straps welded to ½" thick plate.

Due to the extensive preparation of the system, the wastewater division is confident during a significant rain event, the system will be undamaged. However, after creek levels recede, the wastewater division visually inspects all infrastructure to ensure no damage has occurred. If Wastewater crews identify any areas of concern, repairs are made quickly (Given a higher priority) to prepare for future rain and flooding events.

Before every significant rain event, the management staff identifies any areas of concern within the system and will establish a schedule for additional inspection should the need arise. In an emergency, equipment and personnel are readily available to assist the on-call service worker should the need arise.

4.2.3.5 Rehabilitation and Replacement

Over the past fifteen years, experience has shown that identifying and prioritizing areas and sewer segments for assessment and rehabilitation is complex. It requires the availability of tremendous amounts of data, expertise in applying PACP coding, and professional judgment. During this time, the WWC Division has significantly advanced its knowledge of the collection system and its sewer assessment and rehabilitation approach. The City has recognized that CCTV inspection is the best method for identifying and prioritizing problematic areas. As such, the City continuously inspects pipelines and utilizes NASSCO's PACP coding standard to develop a list of assets that need rehabilitation. When defects are identified, the City evaluates the risk of failure and assigns a priority ranking to each asset.

Prioritizing those assets relies on several factors, including:

- Severity and extent of the defects (PACP Score).
- Maintenance records and SSO occurrences.
- Hydraulic capacity needs and projection.
- The estimated remaining useful life of the infrastructure.

This detail-oriented condition assessment approach enables the division to plan and design CIP projects to rehabilitate sewer infrastructure in a planned and organized manner. The supervisor will review the maintenance history of the main, any spill history and determine if the segment should be rehabilitated or continue established preventative maintenance. The main will be added an asset group already created in Maximo CMMS if conditions warrant rehabilitation. Based on current condition, history of calls, and field crew observations, the assets are then prioritized for rehabilitation.

Once the asset group is established, the WWC Superintendent will meet with EU Engineering to review the data and create a CIP project for the upcoming fiscal year, based on priorities and estimated cost. This process ensures the projects will be completed timely, reducing the potential occurrence of an SSO.

4.3 Training and Certification

One challenge when defining a training program is an influx of new employees. Entry-level employees with no training are a potential safety liability in the wastewater field. Training for new hires is predominantly on-the-job training, with classroom and online training finishing the remaining required training. As soon as available, new employees are scheduled for Confined Space Entry, Traffic Control &Flagging, and Excavation and Trench Shoring training, the division's most significant safety liabilities.

4.3.1 New Hires

On their first day, a new employee will be issued a task booklet, which defines the necessary skills and training for their position. The new hire and Supervisor will go through the book, discuss how the employee will receive training, and receive sign-off on the tasks. The booklet covers all areas involving the wastewater collection system and is an aid in developing qualified, knowledgeable, and capable employees. When the employee becomes proficient in a task, the SR Utility Maintenance Worker or the crew leader signs and dates the book, verifying they have observed the employee satisfactorily complete the task. The training defined in the task booklet is provided through various methods, mainly on-the-job training, and begins the first day on the job. Finally, at the end of the probationary period, new hires are put through a series of activities to demonstrate their proficiency in all skills learned.

4.3.2 Training and Tracking

Safety training constitutes a significant portion of the training received each year and tracking individual completion of training can be insurmountable. The WWC Division utilizes a computer-based software, Safety Plus Web (SPW), to monitor and track each employee's level of completion. Supervisors can query individual employee training records or the entire division, to see which courses need completion. In addition, SPW provides Competency-Based Training (CBT), requiring employees to pass a test at the end of each presentation, demonstrating their understanding of the training material.

Standard Operating Procedures (SOPs) have been developed for all equipment and procedures within the division to train new employees and provide a refresher for veteran employees. These SOPs are reviewed annually during a safety meeting and revised should there be a process change. Therefore, SOP development and training is an ongoing process.

The WWC division holds weekly safety meetings where supervisors or subject matter experts present safety topics specific to the wastewater collection field. These meetings are interactive with the crews and presenters and are great learning opportunities. In addition, the training course is added to SPW, allowing employees to fulfill the training online if they are absent.

Finally, as new training requirements are developed, they are implemented into SPW to ensure all employees receive the required training throughout the year. **Table 4** lists the required training specific for the WWC division.

Table 4 – Wastewater Collection Required Training

Training Title	Frequency	Delivery
Asbestos Cement Pipe Training Initial and Refresher	Initial – 1X Refresher – Annual	Outside Trainer
Back Safety	Annual	CBT or Tailgate
Backhoe Operator Certification	Refresher – 3 Yrs.	CBT, Classroom, Hands-On
Bloodborne Pathogens Training	Annual	CBT, Classroom
Confined Space Entry-Permit Required	Annual	Outside Trainer CBT, Classroom, Hands-On
Crystalline Silica Standard	Annual	CBT, Classroom
Defensive Driving	Annual	CBT, Classroom
Dry Creek Emergency Action Plan	Annual	CBT, Classroom
Excavation, Trenching and Shoring	Initial Refresher – Annual	Outside Trainer-Initial, CBT, Classroom
Fall Protection Plan Initial and Refresher	Initial – 1X Refresher – 3 Yrs.	CBT, Classroom
Fire Extinguisher Training	Initial – 1X Refresher- Annual	CBT, Classroom
First Aid, AED and CPR Training	Initial Renewal -Annual	Outside Trainer, Classroom
Gas Detector Training	Annual	Outside Trainer, CBT, Classroom
Hazard Communication	Initial Annual Refresher	CBT, Classroom
Hearing Conservation	Annual	CBT, Classroom
Heat Illness Prevention	Annual	CBT, Classroom
Injury and Illness Prevention Plan	Annual	CBT, Classroom
Lock Out Tag Out	Initial	CBT, Classroom
Personal Protective Equipment	Initial	CBT, Classroom
Respiratory Protection Plan	Annual	CBT, Classroom
Spill Emergency Response (SERP)	Annual	CBT, Classroom
Sewer System Management Plan and CIWQS Requirements	Annual	CBT, Classroom
Traffic Control and Flagging	1X Refresher – 3 Yrs.	Outside Trainer
Underground Utility Locating	Annual	CBT, Classroom, Outside Trainer
Violence in the Workplace	Annual	CBT, Classroom

4.3.3 Certification

The CWEA Technical Certification Program provides certification in various wastewater disciplines to promote the knowledge and skills of wastewater professionals. The City requires employees to take and pass the Collection System Operator Grade I test to be eligible for promotion to the Journey Level. The test for the required CWEA certification ensures that employees who hold this certification possess the knowledge, skills, and abilities to perform the collection system operator duties skillfully. In addition, to renew the certificate, the employee must complete 12 hours of continuing education training every two years. Information on CWEA certification can be found on the CWEA Homepage

4.4 Equipment and Critical Spare Parts Inventory

The WWC division owns an assortment of maintenance equipment and vehicles equipped both for routine maintenance and emergency response. This equipment is maintained by the Vehicle Maintenance Division of Central Services. **Table 5** lists the maintenance equipment the WWC division currently owns.

Table 5 – WWC Equipment List

Qty	Equipment	Purpose
3	Mainline and Lateral CCTV Inspection Vans	Inspection
3	Combination Hydro-Jetters	PM, Emergency Response
1	Chain Flail Cutter 8″-20″ diameter cleaning	PM, Emergency Response
1	LMK Lateral Lining Trailer	Repair
2	3 Axle Dump Truck	Emergency Response, Repair
2	Caterpillar 430 Backhoe Loader	Emergency Response, Repair
1	John Deere 210 Skip Loader	PM, Emergency Response, Repair
1	Caterpillar 304 Excavator	Emergency Response, Repair
6	Ford F-550 Crew Truck w/ Service Body; Fully equipped	PM, Emergency Response, Repair
1	Emergency Response Trailer - Trailer includes 1ea. - 2″ centrifugal pump, 1 ea.- 2″ submersible pump, 20′ of suction hose and 200′ of discharge hose. Equipped with pipe plugs 4″-15″, dry sweep, air compressor, generator, spill berms and required PPE.	Emergency Response, Repair
1	8-inch Trailer mounted solids handling pump, cam lock	Emergency Response, Repair
1	6-inch Trailer mounted trash pump, cam lock fittings	Emergency Response, Repair
1	4-inch Trailer mounted trash pump, cam lock fittings	Emergency Response, Repair
60′	8-inch suction hose, cam lock fittings	Emergency Response, Repair
500′	8-inch discharge hose, cam lock fittings	Emergency Response, Repair
165′	6-inch suction hose, cam lock fittings	Emergency Response, Repair
400′	6-inch discharge hose, cam lock fittings	Emergency Response, Repair
40′	4-inch suction hose, cam lock fittings	Emergency Response, Repair
200′	4-inch discharge hose, cam lock fittings	Emergency Response, Repair
3	6′-10″ pass through air plug, cam lock fitting	Emergency Response, Repair
1	Lansas pipe plug, 24′ – 48″	Emergency Response, Repair

1	Lansas pipe plug, 26″ – 60″	Emergency Response, Repair
1	Lansas pipe plug, 42″ – 78″	Emergency Response, Repair
3	10″-16″ pass through air plug, cam lock fitting	Emergency Response, Repair
3	15″-21″ pas through air plug, cam lock fitting	Emergency Response, Repair
2	10″ pass through plug, threaded end	Emergency Response, Repair
1	10′ x 9′ aluminum shore box	Emergency Response, Repair
2	10′ x 4′ aluminum shore box	Emergency Response, Repair
2	End Shores 24″ to 42″	Emergency Response, Repair
5	22″-36″ Speed Shore 5′ length	Emergency Response, Repair
4	28″-45″ Speed Shore 7′ length	Emergency Response, Repair
6	22″-36″ Speed Shore 7′ length	Emergency Response, Repair
6	48″ x 96″ Fin-form Plywood	Emergency Response, Repair

4.5 Critical Spare Parts

Wastewater Collection is a division of the Environmental Utilities Department, which encompasses Regional Wastewater Treatment Plants, Mechanical Maintenance, Water Distribution, Technical Services Engineering, and Solid Waste Division. The WWC Division operates, inspects and maintains the lift stations within the boundaries of the City of Roseville, however, all electrical and mechanical maintenance tasks are performed by the PM Technicians from Mechanical Maintenance Division. The Materials Technician maintains the WWC Division's inventory list and re-order levels at Dry Creek WWTP. The list of critical spare parts is in **Table 6.**

Table 6 – WWC Critical Spare Parts

EU Name	PLC Model	Pumps	Fuses	Level Control	Comm Connection	HMI	Heater/Overloads
WC06	Koyo D2-250-1	2-Installed	On Site	Transducer/ Floats - Warehouse	Fiber PA-200	Optimate OP-620	Installed/Warehouse
WC07	Koyo D2-250	2-Installed	On Site	Transducer/ Floats - Warehouse	GE MDS SD4	Optimate OP-620	Installed/Warehouse
WC08	Koyo D2-250-1	2-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC09	Koyo D2-250-1	2-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC11	Koyo D2-250-1	2-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC13	Koyo D2-250-1	2-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC14	Modicon M340	N/A	On Site	Transducer/ Floats - Warehouse	GE MDS SD4	SE Maguells HMISTU855	N/A

WC15	Modicon M340	N/A	On Site	Transducer/ Floats - Warehouse	GE MDS SD4	SE Maguells HMISTU855	N/A
WC16	Koyo D2-250-1	2-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC17	Koyo D2-250-1	2-Installed/ 1-warehouse	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC19	Koyo D2-250-1	2-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC22	Koyo D2-250-1	2-Installed/ 1-warehouse	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC23	Modicon M340	2-Installed/ 1-warehouse	On Site	Transducer/ Floats - Warehouse	Proxim Radio to PG. Future Fiber PA-220r	SE Maguells HMISTU855	Installed/Warehouse
WC24	Koyo D2-250	2 + 1-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC25	Koyo D2-250	2-Installed	On Site	Transducer/ Floats - Warehouse	GE MDS SD4	Optimate OP-620	Installed/Warehouse
WC26	Koyo D2-250	2-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse
WC28	Koyo D2-250-1	2-Installed	On Site	Transducer/ Floats - Warehouse	MDS 4710A	Optimate OP-620	Installed/Warehouse

THIS PAGE LEFT INTENTIONALLY BLANK

5 Design and Performance Provisions

Att. D-5	Updated design criteria and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances.(b) Procedures and standards for inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

5.1 Sanitary Sewer Design Standards

The purpose of the City Design Standards is to provide direction in the application of improvements that are to be dedicated to the public and accepted by the City for maintenance or operation and to provide for joint development of those facilities to be used by and for the protection of the public. This includes certain private works and improvements to be installed within existing City rights-of-way and easements. Whereas these Standards intend to govern all new construction, City staff shall interpret and apply the Standards in a manner that achieves their intent while encouraging and enabling the redevelopment of infill and vacant parcels, especially within the City's Redevelopment Project Area. These Standards shall apply to, regulate, and guide the preparation of traffic impact studies and the design and preparation of plans for construction of streets, highways, alleys, drainage, sewerage, traffic signals, site access, water supply facilities and related public improvements, and shall set guidelines for all private works which involve drainage, grading, trees, and related improvements. The City's sewer Design Standards are located on the City's website at Sewer Design Standards

5.1.1 Sanitary Sewer Construction Standards

The purpose of the City Construction Standards is to provide minimum standards to be applied to improvements which are to be dedicated to the public and accepted by the city for maintenance or operation and certain private works, as well as improvements to be installed within existing rights-of-way and easements. This is necessary to provide for coordinated development of required facilities to be used by and for the protection of the public. These Construction Standards shall apply to, regulate, and guide construction of streets, highways, alleys, drainage, sewerage, traffic signals, site access, water supply facilities and related public improvements, and shall set guidelines for all private works which involve drainage, grading, trees and related improvements. The City's sewer Construction Standards are located on the City's website at Sewer Construction Standards

All improvements within the City rights-of-way shall be installed in accordance with the approved improvement plans and specifications, the City of Roseville Design Standards, the City of Roseville Construction Standards, and the State of California Department of Transportation Specifications.

5.1.2 Comprehensive Response to Climate Impact

In response to the State Water Board adopted Resolution 2017-0012, titled Comprehensive Response to Climate Change, the City of Roseville Wastewater Collection Division has taken the steps to reduce its carbon footprint by requiring the use of vitrified clay pipe over PVC pipe in all sewer infrastructure projects. The natural materials, minimal processing, and durability of vitrified clay pipes make them have a lower carbon footprint compared to other types of pipes. Vitrified clay pipe, made from natural and abundant materials like clay and water, emit significantly fewer greenhouse gases during production compared to PVC, which relies on fossil fuel-based materials and energy-intensive chemical processes. The production of vitrified clay pipe, on average, results in the emission of around 250 kg of CO_2 per ton. In contrast, manufacturing the same amount of PVC pipe can produce over 1,900 kg of CO_2, which is nearly 8 times higher in emissions. Thus, the City of Roseville makes an environmentally conscious decision to require vitrified clay pipe. This choice not only decreases greenhouse gas emissions but also offers many advantages, such as remarkable durability, recyclability, and minimal environmental impact when the pipe reaches the end of its lifecycle. The City of Roseville has showed its dedication to sustainable development and climate-conscious planning by requiring the use of Vitrified Clay Pipe instead of PVC.

The City has developed a project for easement mainline condition assessment to evaluate system accessibility and identify critical areas based on condition and environmental impact in case of a blockage or spill. These areas are offsite and are subject to flooding and bank erosion, therefore the city's efforts here will prevent environmental impacts from spills should they occur. The project will provide a comprehensive understanding of the system's condition, recommend improvements for access to the offsite segments, and prioritize areas for action with a ranking system from 1 to 10, guiding the City's efforts to address the most critical issues.

5.2 Sewer System Construction and Performance Testing

Section 91-12 of the City's Sanitary Sewer Construction standards defines the criteria for testing of installed sewer improvements. Sewer mains, services, manholes and appurtenances shall be tested by the following procedures.

5.2.1 Testing Of Installed Improvements

A. Sewer Mains and Services – Public and private sewer mains and services shall be air-tested per ASTM C828 by the Contractor and the Environmental Utilities Department shall provide closed circuit TV inspection, after installation of the joint trench utility crossings and subgrade elevations have been met. Additionally, pipeline segments beneath road bases to be lime- treated shall be tested before and after the lime treatment process.
B. Air Pressure Test – Sewer mains and laterals shall be pressure tested in accordance with the National Clay Pipe Institute recommended guidelines with the following amendment:

1. The minimum test time shall be 60 seconds. The section of a sewer being tested must be pressurized to 3.5 psi, and during the test time must hold 2.5 psi or greater, or the section has failed.
2. For mains installed in an area where the water table is higher than the pipe, the test pressure shall be increased 0.5 PSI per foot of water over the pipe.
3. The test gauge shall be liquid-filled, capable of testing up to 15 PSI, and graduated to 1/10 PSI.

C. TV Inspection – TV inspection of sewer mains and services shall be performed by the Environmental Utilities Department, Wastewater Division. Costs for said inspection shall be borne by the Contractor. Preliminary inspections may be performed by outside contractors but shall not be accepted by the Environmental Utilities Department as an official record.

1. The sewer system shall be completely cleaned by an approved method prior to TV inspection. The sewer system shall be rejected if any of the following conditions exist:
    a. For main lines 12 inches and smaller - standing water or sags greater than 1⁄2 inch in depth at acceptance or greater than 1 inch at warranty.
    b. For main lines exceeding 12 inches - standing water or sags greater than 3⁄4 of an inch in depth at acceptance and greater than 1 1⁄2 inches at warranty.
    c. Standing water in services.
    d. Offset joints.
    e. Joint separations greater than 1⁄2 inch wide.
    f. Damaged pipe.

D. Inspection Criteria for Coated Ductile Iron Pipe – All ductile iron sewer will have the following additional inspection requirements:

1. The condition of the barrel section of pipe as well as 360◦ at each joint shall be recorded to a DVD or portable drive. Once completed, and the inspection demonstrates the pipe meets the City's construction standards, the contractor may proceed with the backfill of the trench. The Contractor shall provide the DVD and a map of the section inspected, to the Wastewater Collection Division for review prior to the City's acceptance inspection.
2. Upon finding any deficiency in the pipe which does not meet the design and construction standards of the City of Roseville, it is strongly encouraged that the contractor makes the necessary corrections at that time. If deficiencies aren't corrected City forces at time of acceptance CCTV will identify these deficiencies and require the contractor to dig and replace the pipe sections; there will be no exceptions.
3. The observation data on the DVD provided to the City shall include the following:
    a. City wide job number.
    b. Encroachment permit number.
    c. Project name.
    d. Location (street name)
    e. Manhole numbers (based on approved plan set or city asset numbers if applicable).
    f. Direction of inspection (upstream or downstream).
    g. Date of inspection.

4. The speed of travel shall be slow enough to inspect each pipe joint, wye connection, coating integrity, and potential sags. Camera speed should travel at a rate of no more than 30 feet per minute. The camera speed shall be steady and slow enough to record features and defects.

E. Manholes – Sewer manholes shall pass a vacuum test consisting of the following criteria and procedures:

1. The test shall be performed after assembly of the manhole and installation of the pipe entering or exiting the manhole, but prior to backfilling. The Contractor shall perform the test and supply all test equipment. The Development Services Inspector shall witness the test results.
2. Lift holes shall be filled with non-shrink grout prior to testing.
3. Pipe entering and exiting the manhole shall be plugged. The plug shall be places on the flex joint outside of the manhole base. Securely brace the plugs to prevent them from being drawn into the manhole. Unused channels shall be permanently plugged with a plastic or clay stopper.
4. A vacuum of 10 inches of mercury shall be drawn to start the test. The amount of time required for the vacuum to drop to 9 inches shall be measured. The manhole will pass the test if the amount of elapsed time is greater than 60 seconds for a 48-inch manhole, 75 seconds for a 60-inch manhole, 90 seconds for a 72-inch manhole and 120 seconds for an 84-inch manhole. A liquid-filled vacuum gauge shall be used for testing. All detectable leaks shall be repaired with non- shrink grout while the vacuum is drawn. No mortar shall be applied to the inside of the manhole until the vacuum test has passed.
5. If the manhole fails the initial test, necessary repairs shall be made with a non-shrink grout while the vacuum is still being drawn. Retesting shall proceed until elapsed times are satisfactory.
6. After passing the vacuum test, all joints shall then be mortared, inside and out. Outside mortared joints shall be allowed to dry 24 hours or as approved by the Development Services Inspector before backfilling.
7. If damage to the manhole is evident any time during the construction, the Development Services Inspector may require repairs to be made on the manhole which will require a new vacuum test prior to acceptance.
8. Topside Improvements – When all water, recycled water and sewer infrastructures have passed air, vacuum, pressure, and continuity test as well as CCTV inspection the Development Services Inspector will email a notification to internal departments indicating that the project is ready for road bases and top side improvements only. This does not constitute approval for use of the infrastructure.
9. Tying Into the City System – A tie-in procedure shall be submitted and approved by the Environmental Utilities Department prior to the proposed work. The contractor shall allow for up to 7 days for review of the procedures by the Environmental Utilities Department. The sewer system shall be tied into the City system within 10 working days upon completing and passing all the testing procedures. Tie-ins shall be conducted as specified in Section 91- 2 of the Construction Standards.

5.2.2 Punchlist Process

After the sewer manholes have been raised and finished to grade, the sewer system shall have a final ball and flush in the presence of the Development Services Inspector. The system shall then have a final TV inspection to ensure the entire sewer system is intact for warranty. Final ball and flush can be done by city forces on a time and material basis at the request of the contractor. When all improvements are complete, the contractor shall provide a written request for a punch list inspection of the improvements. With the assistance and presence of the Contractor, the wastewater facilities punch list shall be generated by the Development Services Inspector and Wastewater Collection Division.

5.2.3 Repairing Installed Improvements

Sewer mains, services, manholes and appurtenances shall be repaired per these Construction Standards and by the following procedures.

A. Repairing Vitrified Clay Pipe

1. Damaged pipe shall be exposed and replaced in-kind by "bridging" the new pipe into place. Coupling devices shall not be used.
2. Sagging or misaligned pipe shall be exposed and corrected in place if possible. If the pipe is defective, then a new pipe shall be bridged in place.
3. After the correction has been completed, the excavation shall be backfilled and compacted to grade as specified. The repairs shall then be retested per section 91-12 of these Construction Standards.

THIS PAGE LEFT INTENTIONALLY BLANK

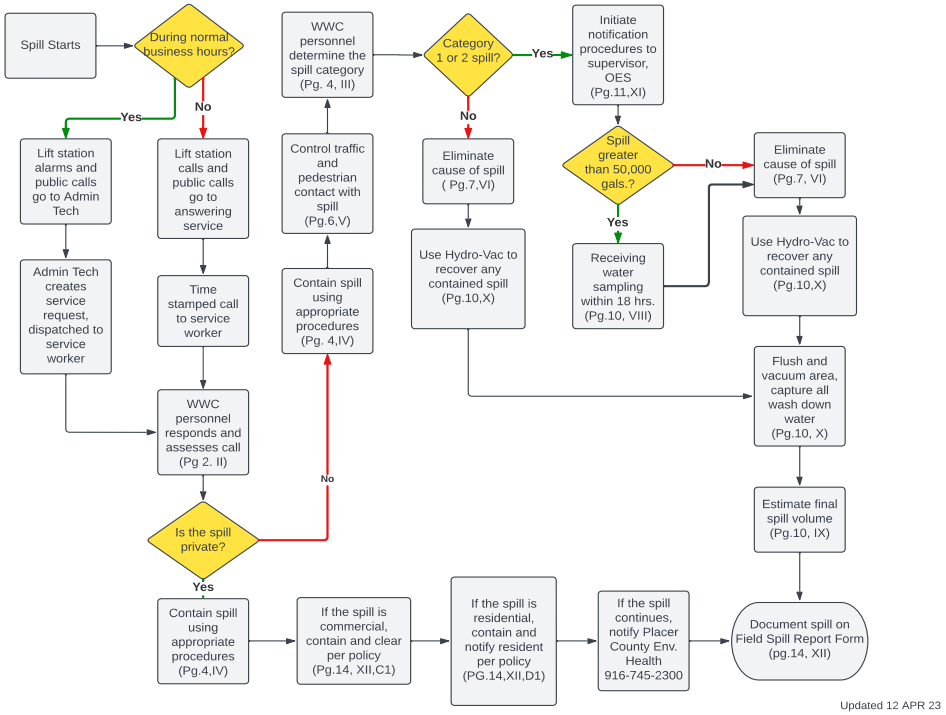
6 Spill Emergency Response Plan

Att. D-6 The Plan must include an up to date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to: (1) Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner; (2) Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State; (3) Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders; (4) Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained; (5) Address emergency system operations, traffic control and other necessary response activities; (6) Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system; (7) Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State; (8) Remove sewage from the drainage conveyance system; (9) Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters; (10) Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery; (11) Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event; (12) Conduct post-spill assessments of spill response activities; (13) Document and report spill events as required in this General Order; and (14) Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

6.1 Notification Procedures

The WWC division maintains an Overflow Emergency Response Plan that covers the wastewater system and Lift Station response and procedures. Page numbers included in the flowchart reference the Spill Emergency Response Plan, not the SSMP. **Figure 7** summarizes the response procedures. Refer to Appendix 6 for the complete *Spill Emergency Response Plan*.

Figure 7 – SERP Flowchart



The WWC division strives to operate, manage, and maintain all parts of the sanitary sewer system to prevent spills and mitigate the impacts quickly and efficiently should an spill occur. The On-Call emergency vehicle contains a three-ring binder that includes the division's spill emergency response manual, the response plan, chain of communication, and notification procedures. In addition, the truck is equipped with the necessary tools and equipment to control and contain overflows and clear lower lateral blockages. The truck is outfitted with pneumatic plugs, rubber berms, and dry sweep, all of which are effective means of containment. **Table 7** summarizes the division's notification procedures.

Table 7 – Notification Guide

If a Spill	And Affects	Notify
..that discharges in or on waters of the State or discharges to a location where it will probably be discharged to waters of the State, the enrollee shall notify the Office of Emergency Services (OES) and obtain a control number as soon as possible, but no later than 2 hours after becoming aware of the discharge; and notification can be provided without substantially impeding cleanup or emergency measures	Sacramento River A structure that requires cleanup	• WWC Supervisor- Cody Wilbanks Office 916-746-1889 Cell 916-472-1488 • WWC Supervisor- Shane Rodgers Office 916-746-1894 Cell 916-223-7711 • WWC Supervisor – Kevin Ryan Office 916-746-1895 Cell 916-223-7537 • WWC Superintendent – Dan Pruden Office 916-746-1891 Cell 916-580-5600 **The individuals above are responsible for notifying** • OES 1-800-852-7550; Obtain a control number for spill report form **Water Quality Sampling- Frank Dittrich 916-746-1882** **During normal business hours only; after hours, call** ▪ **Cal Test 707-258-4000** ▪ **California Lab Services 1-800-638-7301** ▪ **Excel Chem 916-938-0519** **Additional Numbers for Reference** ▪ **Placer County Environmental Health** 1-530-745-2300 Main Line 1-530-745-2306 After Hours Supervisor • **California Department of Fish and Wildlife** 916-445-0045 Option #2 • **Sacramento River Water Treatment Plant** 916-808-4961 916-264-5011 • **City of Roseville-Risk Management** 916-774-5420 or 916-774-5202 ○ After hours, Contact Risk Manager, Virginia Bolmsn at 916-501-2073 ○ If no answer, first responder can authorize clean-up only from the restoration companies listed in the SERP

6.2 Emergency Response Procedures

The City of Roseville developed this Spill Emergency Response. This plan ensures that all spill responses are conducted efficiently and effectively while meeting all regulatory requirements of the General Order.
The Division has provided all employees with a binder containing the SERP, estimation tables and strategies for notifying primary responders, local officials and regulatory agencies.

6.2.1 Goals of SERP

This SERP aims to ensure that all wastewater collection personnel follow the established guidelines in cleaning up and decontaminating spills within the City's collection system service area. The City's goals concerning spill response are:

A. Respond quickly to minimize the extent of the spill;
    1. The division's goal is a 20-minute response time during business hours and 40 minutes after hours.
B. Contain the spill to the extent feasible;
C. Eliminate the cause of the spill;
D. Eliminate public contact with the spill;
E. Mitigate the impact of the spill; and
F. Comply with the RWQCB Monitoring and Reporting requirements

6.2.2 Respond and Assess

Calls for service come through either the office landline or a 24-hour answering service. Calls for service to the Administrative Technician are documented in a service request in the City's CMMS. In turn, the Technician will dispatch the call with all information to the on-call service worker via cellular phone. After business hours, the City's contracted answering service is provided a script of questions used to collect information from the caller. Once gathered, they also dispatch the call information via cellular phone to the on-call service worker. After the call, the answering service time stamps the call, and an email is sent to the division management and service call address with all pertinent information regarding the call. Additionally, the wastewater treatment plant staff monitors lift station SCADA alarms. Operators notify the on-call service worker via cellular phone if they receive an alarm at any of the City's lift stations.
Assessment starts with the phone call to the customer. Upon contact with the resident, request that the resident stop all water use, then begin gathering as much relevant information as possible such as:

A. Description of problem
B. Specific location if a spill has occurred (e.g.,. manhole in the street, front or back of the property, cleanout box)
C. The approximate time the spill was noticed helps tremendously in determining the start time of the spill.

D. Any other observations from the caller (e.g., currently spilling, odor, duration of the spill, slow drains, currently spilling, water use in home)
E. If the service worker believes an active spill is occurring, they will mobilize a hydro-vac immediately to the location.
F. The wastewater crewmember arriving first at the scene is the ***First Responder***. Upon arrival, the first Responder will quickly assess the spill to determine the extent, spill category, and resources needed to address the spill. The ***First Responder*** is responsible for the following:
    1. Location of the spill by the address and cross street the spill appearance point (i.e., manhole, cleanout, lift station, etc.)
    2. Documenting the time the call was received, time of arrival, and determining the start and stop times of the spill. *The SSO Start Time Policy* in will aid in establishing the start and stop time for the spill.
    3. Determine the extent and the category of the spill;
        i. If the spill is a Category 1 or 2, notify the Superintendent or Supervisor immediately. Cal OES notification is required within 2 hours of becoming aware of the spill.
        ii. Did the spill cause a backup in a structure? – *The Flooded Structures Procedures* in Section 6.4 addresses the process
        iii. Did the spill enter into a drainage conveyance system?
        iv. If a potential for public exposure is present, control foot and auto traffic through the area
        v. Other concerns due to the spill
            a. Is the spill related to a street collapse?
            b. Is the spill related to recent construction work?
            c. Has the spill displaced a manhole cover creating a traffic hazard
    4. Requesting additional wastewater crews or personnel as needed;
    5. All field documentation, including photographs of the spill and completion of the Field Spill Report Form
G. If the spill is a Category 1, follow directions from RWQCB, Placer County Environmental Health, or the Department of Fish and Wildlife for posting warning signs around the contaminated area.

6.2.3 Spill Categories

Individual spill notification, monitoring and reporting must be in accordance with the following spill categories:

A. **Category 1** - any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:
    1. A surface water, including a surface water body that contains no flow or volume of water.
        i. A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sewer system or disposed of properly.

ii. Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.

2. **Category 2** - is a spill of 1,000 gallons or greater from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
3. **Category 3**- is a spill of equal to or greater than 50 gallons and less than 1,000 gallons from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
4. **Category 4** - is a spill of less than 50 gallons from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

6.2.4 Spill Containment

Containment of a spill becomes increasingly difficult once the overflow reaches a drainage conveyance system or a waterway. The quicker the spill's source and extent can be identified, contained, or controlled significantly reduces the spill's impact. Upon arrival, survey the scene to determine the potential spill appearance point. There are times when responding to a spill, the source of the spill is potable water, a backyard drain, or a storm issue. Once confirmed that the spill is the sewer, mobilize the necessary personnel and equipment for assistance. During dry weather, the drainage conveyance system can store the spill, if plugged at a point downstream of the spill. Multiple techniques are identified to contain the spill depending on the circumstances, spill category, and material available. In no particular order, the list below includes possible containment options for field crews

Location	Options for Containment
Curb and Gutter	Create berm with rubber berm, dry sweep, dirt or sandbags: Utilize natural low spots or grade deviations
Lift Station	• Use Hydro-Vac to contain • Setup bypass pumping • Setup backup generation
Open Space	• Dig a trench to contain • Sandbag berm • Dirt berm
Creek	• Plug storm drain inlets and outlet pipes to creek
Storm Drain Conveyance System (Dry)	• Plug all affected storm drain inlets; plug outfall if necessary • Contain using the hydro-vac • Request additional hydro-vac support if necessary
Storm Drain Conveyance System (Wet Weather)	• Plug all affected storm drain inlets • Emergency bypass pumping • Turn off stormwater pump station if applicable
Backup in Structure	• Evacuate residents if needed • Pop cleanout cap off; If no city cleanout, attempt to locate • Pop private cleanout if available • Contain outside if overflow is relieved by finding/removing cleanout cap.

1. Containment with Hydro-Vac
   Determine a location downstream of the spill appearance point where the hydro-vac unit can be set up to capture all spilled water. Ensure no storm drain inlets are between the containment and spill appearance points. Continue vacuuming overflow until the blockage has been cleared, then proceed with the spill's cleanup. Wash all debris and spill evidence into the vacuum tube for removal and disposal at the DCWWTP.
2. Containment Using Berms and Mats

   Utilize dirt, dry sweep, a rubber berm, sandbags, or other obstructing material that is readily available to block drain inlets and ponds the spill to a naturally low area to contain and minimize the spill's impact. If possible, divert the spill to a downstream manhole unaffected by the blockage. Attempt containment by covering any affected storm drain inlets with rubber mats and securing them with sandbags, dirt, or other heavy objects to keep them in place.
3. Containment Using Pneumatic Plugs

   Plugging the affected drain inlet or multiple drain inlets with a pneumatic plug can be effective. For example, a pneumatic plug in the storm drain outfall would prevent the overflow from reaching the waterway. However, depending on the location within the City, drain inlets will vary in size, so utilizing plugs may not be the best option.

H. Backup in Structure

Advise the customer to keep family members and pets out of the spill areas to not track any contamination into non-affected areas. If necessary, evacuate affected people and pets.

1. During regular business hours, notify Risk Management at 916-774-5420 or 916-774-5202. After hours or if there is no answer at the above numbers, contact Risk Manager Virginia Bolmsn at 916-501-2073.
2. If Risk Manager or their staff cannot be reached, contact one of the approved restoration companies in the order below and authorize cleanup services only:
   i. Serv-Pro 916-632-2250
   ii. Restoration Management 800-400-5058
3. Before the restoration company or the Risk Manager arrives, hand the resident our camera and ask them to photograph the affected area. Do not enter the house, even if invited.
4. If the resident declines the cleaning services, request that they sign and date the Declination of Clean Up Services Form.

I. Overflow into Storm Drain Conveyance System (DCS)

1. Trace overflow in the DCS to the downstream endpoint using the Stormwater Map on the GIS. Plug all affected storm drain outfalls or block the creek and channels to contain the spill.

2. While tracing the system, if you determine that the spill is contained within a mainline section, plug the downstream end at a manhole to contain the spill. Many storm drain manholes are built with sumps in the base, and depending on the spill volume, these sumps may prevent the spill from continuing downstream. Note all the storm drain assets cleaned on the Field Spill Report Form.
3. If a stormwater pump station is near the spill and may be affected, contact Streets Division to turn off the pumps.

J. If the spill is a Category 1 spill, follow directions from RWQCB, Placer County Environmental Health, or the Department of Fish and Wildlife for posting warning signs around the containment area.

6.2.5 Traffic Control (WWC Personnel)

Traffic control may be needed immediately to protect the health and safety of the public and responding wastewater crews. Typically, immediate traffic control is necessary if there is a street collapse or significant undermining of the pavement section related to the blockage and sewer spill, if the manhole cover is ajar, or if the spill causes street flooding. In addition, temporary traffic control may be needed to allow responding crews to contain and clear the blockage and prevent sewer from being further dispersed by vehicular traffic.

K. Provide traffic control per Cal Trans Work Area Traffic Control Handbook (WATCH)

B. Control public contact with the spill by isolating the area with barricades, signs or traffic cones.

C. If necessary, use other departments (i.e. Police, Public Works) to ensure adequate traffic control. Contact Roseville Police/Fire Dispatch at 916-774-5123 to coordinate.

6.2.6 Correct Cause

The cause of the overflow may be located a considerable distance downstream of the spill in areas with flat terrain. During significant rain events, overflows can be caused by excessive I&I in the collection system. I&I can significantly increase the flow in a collection system and cause overflows from pipes that are only partially blocked. I&I can also directly affect the hydraulic capacity of mainlines and lift stations. Under these conditions, stopping the overflow may not be possible until the flows recede.

L. Locate the cause of the overflow

1. Sewer Main
    i. Check flow in manholes
    ii. Blockage should be between a manhole with sluggish flow or surcharging and a manhole with very little flow or completely dry
    iii. Clear the mainline blockage using a hydro-vac unit from the dry manhole. Refer to SOP WWC-002 for hydro-vac procedures. Observe the material that flows downstream after clearing the obstruction to determine the possible cause of the blockage and note it on the spill report form.
    iv. Continue to monitor manholes in the area until the surcharged manhole empties.

v. If the blockage cannot be cleared. Increase containment and request additional crews for assistance.
    a. Perform a CCTV inspection to determine the blockage
    b. Request additional hydro-vacs to contain, or initiate by-pass pumping
    c. Dig and repair the sewer main to correct pipe defect

2. Sewer Service
    i. Check flow in the city cleanout. If the riser is full of water, wait until a hydro-vac is onsite to remove or contain the water before eeling. If the cleanout is holding but not full, carefully insert the gas powered ell rod and cutting head into the service until you contact the obstruction. Inserting the eel rod quickly, can cause the service to spill. Proceed with the eeling process until the service drains, then CCTV inspect to identify the blockage details.
    ii. If the City cleanout is dry and the resident is still plugged, the stoppage is likely on the private side and is not the City's responsibility. However, it is good customer service to CCTV the service to ensure the City line is clear.
    iii. If no city cleanout exists, but the resident has a 4" private cleanout, run this private cleanout to clear the blockage. Once removed, CCTV to determine the location of the problem. Refer to Appendix D to determine if the private cleanout meets the criteria before using city equipment.
    iv. Check the upstream and downstream mains if a city or private cleanout cannot be located. If the main is running clear, notify the resident that the problem is on their side, and explain the city cleanout installation policy.
    v. If the service line ties into a dead-end run, regardless if the City cleanout is clear, clean the mainline segment with a hydro-vac.

3. Lift Station
    i. Check the alarm status inside the control panel for indication of a problem.
    ii. If no power is present:
        a. Contact Roseville Electric to verify the outage and an estimated time the power will be restored.
        b. Determine the wet well level and remaining downtime left at the station.
        c. If downtime exceeds the max allowable retention, mobilize additional wastewater crews and a hydro-vac to the station. If the power outage is extensive, request multiple hydro-vacs for assistance.
        d. Continue vacuuming the wet well until power is restored and the lift station operates in auto mode. Watch the station for an entire pump cycle before leaving.
    iii. If power is present, but the pumps aren't operating in auto, switch the controls to the hand position. If the pumps are operational in hand mode, contact the on-call EU electrician and continue running and monitoring the station in hand mode.

iv. If portable generation is required to power the station, the on-call EU Electrician must be onsite to make the connections. All control panels have an exterior plug and disconnects for portable generation connection, with each station having a specific cable. All cables are labeled and located in the EU Maintenance shop.

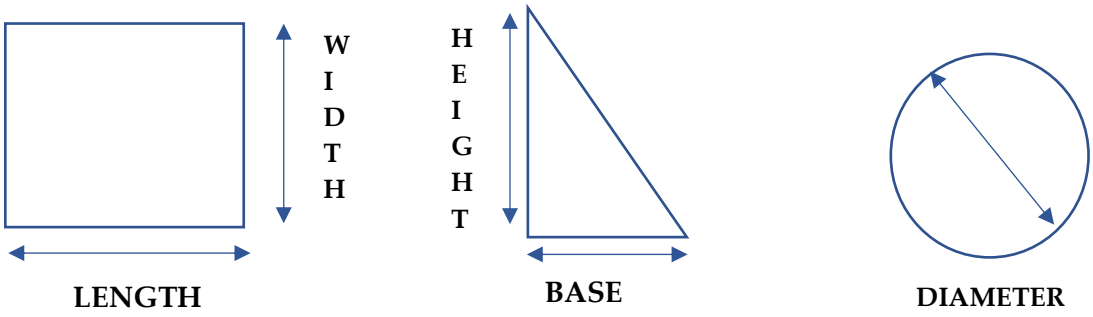
4. Force Main
   i. If the spill is from a ruptured force main, control the power using the written Energy Control Procedures (ECP), located in the door panel at the station. A qualified electrician shall perform the switching of any panel breakers.
   ii. Contain the spill from the pipe break using the containment procedures in Section IV.
   iii. Monitor and control the wet well levels using bypass pumping or hydro-vac units until the repair is completed.
   iv. If the station is equipped with dual force mains, transfer flows to the additional force main to continue normal lift station operation.

6.2.7 Final Volume Estimate (WWC Personnel)

The final overflow volume is estimated to determine if additional reporting to regulatory agencies is required and for the City of Roseville's records when reporting to CIWQS. A minimum of five (5) pictures are required for every spill response, and locations are noted on the field spill report. Place an object in the photo for contrast. The following methods are approved for determining the gallons spilled during an overflow event.

Eyeball Estimation- Estimate the overflow rate out of a clean out by estimating the time needed to fill up a known volume, such as a five-gallon bucket. Imagine the amount of water that would spill from this bucket. This method is useful on spills that occur on hard surfaces such as concrete or asphalt

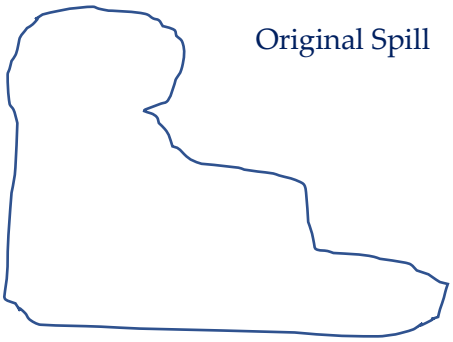
Measured Volume- The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions and depth of the contained wastewater are needed. This information is used to calculate area and volume of the spills.

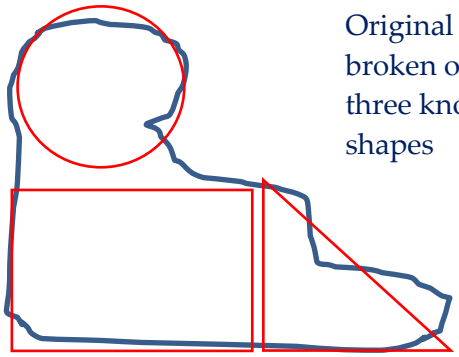


1. Determine the shape of the spill
2. Measure or pace off the dimensions. Measure the depth at several locations and calculate the average. Convert all dimensions to feet.
3. To calculate the area square footage, use the following:
   a. Rectangle: Length (ft.) x Width (ft.)

b. Triangle: Height (ft.) x Base (ft.) x .5
c. Circle: Diameter (ft.) x Diameter (ft.) x .785
d. Multiply the area (sq. ft.) by the depth (feet), to get the volume in cubic feet. Multiply your volume by 7.48 to convert to gallons.

Not all SSO's will conform to the shapes above. If this occurs, break the area up as much as possible into known shapes and calculate the volume in each.

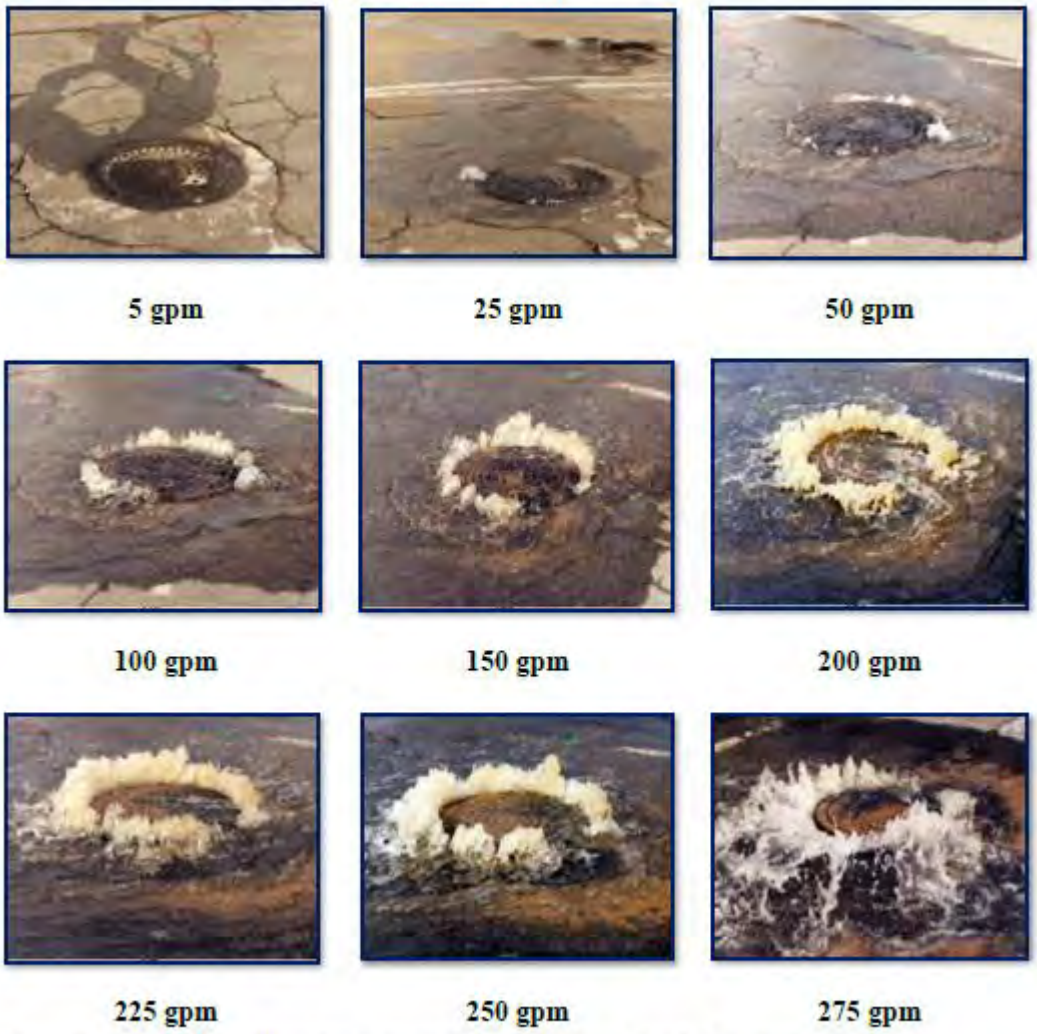




Calculating large volume spills is challenging because the area and depth are difficult to measure, and chances are these spills are not fully contained. Several methods are available to determine the volume.

Flow Estimation Chart- The table below (Section 5 of the SSOERP binder) presents pictures with varying flowrates of sewage overflowing from a manhole. Estimate the overflow rate by comparing the overflowing manhole with the pictures shown below.

Estimating Sewer Flow Rates from Overflowing Sewer Manholes[1]



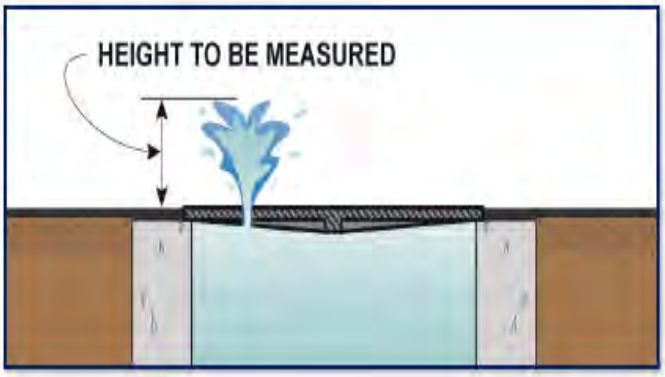
[1] Sourced from City of San Diego Metropolitan Wastewater Department "Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes" (April 1999).

Flow Rate and Duration- Overflow volume can be estimated by multiplying the overflow duration by the overflow rate. The overflow rate can be determined by pick hole or vent hole spill height (section 5, SSOERP binder), flow meter data, SCADA information and pump data from lift stations.

The overflow volume can be estimated with the following formula:

Volume (gal)= estimated flow rate (gpm) x duration of overflow (minutes)

The charts below represent measurement point and flow rates based off height of water column measured.



Height of Spout Above Manhole Frame, H (inches)	SSO Flow Rate, Q (gpm)	Height of Spout Above Manhole Frame, H (inches)	SSO Flow Rate, Q (gpm)
1/8	1.0	5 1/8	6.2
1/4	1.4	5 1/4	6.3
3/8	1.7	5 3/8	6.3
1/2	1.9	5 1/2	6.4
5/8	2.2	5 5/8	6.5
3/4	2.4	5 3/4	6.6
7/8	2.6	5 7/8	6.6
1	2.7	6	6.7
1 1/8	2.9	6 1/8	6.8
1 1/4	3.1	6 1/4	6.8
1 3/8	3.2	6 3/8	6.9
1 1/2	3.4	6 1/2	7.0
1 5/8	3.5	6 5/8	7.0
1 3/4	3.6	6 3/4	7.1
1 7/8	3.7	6 7/8	7.2
2	3.9	7	7.2
2 1/8	4.0	7 1/8	7.3
2 1/4	4.1	7 1/4	7.4
2 3/8	4.2	7 3/8	7.4
2 1/2	4.3	7 1/2	7.5
2 5/8	4.4	7 5/8	7.6
2 3/4	4.5	7 3/4	7.6
2 7/8	4.6	7 7/8	7.7
3	4.7	8	7.7
3 1/8	4.8	8 1/8	7.8
3 1/4	4.9	8 1/4	7.9
3 3/8	5.0	8 3/8	7.9
3 1/2	5.1	8 1/2	8.0
3 5/8	5.2	8 5/8	8.0
3 3/4	5.3	8 3/4	8.1
3 7/8	5.4	8 7/8	8.1
4	5.5	9	8.2
4 1/8	5.6	9 1/8	8.3
4 1/4	5.6	9 1/4	8.3
4 3/8	5.7	9 3/8	8.4
4 1/2	5.8	9 1/2	8.4
4 5/8	5.9	9 5/8	8.5
4 3/4	6.0	9 3/4	8.5
4 7/8	6.0	9 7/8	8.6
5	6.1	10	8.7

Unrestrained manhole cover will start to lift

Figure 1- Flow Rate Exiting MH Pick Hole

Estimated Flow EDU Chart – This method can be used for overflows from residential properties when enough information has been gathered through interviewing the resident. Be clear with your questions and explanation for the interview. Only interview residents from the household contributing to the SSO. The table below is based off our design criteria of 190 gpd and is included on the Field Spill report. It is a quick way to estimate volume from small overflows.

Figure 8 – EDU Flow Chart

Time Period	Estimated City Flow Rate Per EDU (190 gpd)				Spill	
	A	B	C	D	E	F
	Gallons Per Period	Hours Per Period	A÷B = Gallons Per Hour	C÷60 = Gallons Per Minute	Minutes Spill Was Active	D x E= Gallons Spilled Per Period
6am -Noon	75	6	12.5	.21		
Noon – 6pm	55	6	9.16	.15		
6pm - Midnight	50	6	8.33	.14		
Midnight - 6am	10	6	1.67	.03		
					Total Estimated Spill Volume	

However, if a large spill occurs with multiple homes, commercial or mixed-use involved, and there isn't sufficient information to calculate an estimate, use the City of Roseville Design Standard 9-2, Average Dry Weather Unit Flow Factors chart below. Count the units that are affecting the overflow and multiply by the flow factors on the chart below based on the land use designation.

Table 1 – Average Dry Weather Unit Flow Factors

Land Use Designation	Units	Flow Factor (gpd/unit)[1,3]
Commercial	gpd per acre	850
Heavy Industrial	gpd per acre	850
Light Industrial	gpd per acre	850
Mixed Use	gpd per acre	2,300
Public/Quasi-Public	gpd per acre	660
Schools	gpd per acre	170
Residential 1 DU	gpd per DU	190
Residential 2 DU	gpd per DU	190
Residential 3 DU	gpd per DU	190
Residential Multiple DU[2]	gpd per acre Or gpd per DU	2,040 Or 130
Open Space	gpd per acre	0
Parks> 10 Acres	gpd per acre	10
Vacant	gpd per acre	0

6.2.8 Initiate Cleanup (WWC Personnel)

Disinfection of contaminated soil or drainage ways is only performed when directed by appropriate agencies such as Placer County Environmental Health and CA Dept of Fish and Wildlife

A. Flooded building or structure

1. If building or structure is flooded due to a failure in the city's collection system, contact Risk Management or Dave Rawe after hours. Risk Management will respond and assess and notify restoration companies on contract with the city.
2. Storm Drain or Drainage Way
    i. Pump out or vacuum any ponded water present
    ii. Remove debris
    iii. Wash concrete and contain all wash water and remove
    iv. Remove contaminated soil and plants
    v. High pressure clean affected storm drains and vacuum all water
    vi. Remove all containment and finish flushing and vacuuming area
3. Street, Curb or Gutter
    i. Remove debris with Vactor
    ii. Wash pavement, curb and gutter area , and vacuum all water with Vactor
    iii. If Vactor decant pump is used, utilize decant apparatus to alleviate possibility of secondary spill and provide fall protection at open manhole.

6.2.9 Receiving Water Sampling (Industrial Waste Section)

To comply with subsection D.7(v) of the SSS WDRs, the enrollee shall develop and implement an SSO Water Quality Monitoring Program to assess impacts from SSOs to surface waters in which 50,000 gallons or greater are spilled to surface waters. The SSO Water Quality Monitoring Program, shall, at a minimum:

I. Contain protocols for water quality monitoring
II. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions)
III. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.
IV. Require instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration to ensure their continued accuracy.
V. Within 48 hours of the enrollee becoming aware of the SSO, require water quality sampling for, at a minimum, the following constituents
    a. Ammonia
    b. Appropriate Bacterial indicator(s) per the applicable Basin Plan water quality objective or Regional Board direction which may include total and fecal coliform, enterococcus, and e- coli.

6.2.10 Notification Requirements (Superintendent/Supervisor)

All overflows are required by law, to be promptly reported to regulatory agencies. The Legal Responsible Official (s) or their designee will make all notifications to regulatory agencies regarding reportable SSOs. All SSOs are tracked in the City of Roseville's CMMS.

- **A.** Prompt notification to regulatory agencies will be achieved by using the SSO Notification Guide (Tab 4)
- **B.** All information regarding the spill will be documented on the SSO Field Report Form
- **C.** Documentation and Data Tracking
    1. All SSOs are tracked with a service request module in the City of Roseville's CMMS. Completed service requests, work order requests and any overtime tags are turned into Superintendent/Supervisor for QA/QC. These are all resolved in the CMMS. Service requests for after-hours call will be generated the following business day.
    2. Follow up PM work orders are generated to CCTV inspect affected lines and recommendations from CCTV crew are reviewed by Superintendent or Supervisor. Further recommendations regarding repair, replacement, or preventative maintenance schedule adjustment are made on the System Failure Analysis Form.
    3. Field report forms are turned into Supervisor or Superintendent, who enters data into the CIWQS website. A minimum of 5 pictures is required for every SSO
- **D.** Ensure that all appropriate documentation has been completed in the CMMS.
    1. Private commercial spills, crew will provide a work order request to Supervisor documenting hours worked, equipment used and actions taken for billing purposes.
    2. Private residential spills, crew will provide a work order request to Supervisor documenting hours worked, equipment used and actions taken.

6.3 Staff and Contractor Training

To train WWC Employees on the importance of the SSOERP, Supervisors created a Powerpoint Presentation as a training resource. The interactive presentation covers the written SSOERP in a classroom setting. This setting allows employees to clarify any elements within the procedure. The annual training is followed by a competency test and classroom spill simulation. In addition, WWC employees built a spill simulator in the training yard at the DCWWTP to test employees' skills in estimating spills. If desired, supervisors can create spills from either a manhole, cleanout, or both. The water is metered and creates an accurate simulation within the confines of the WWTP.

Contractors are provided with the City's wastewater collection system policies and procedures. Per the contract, they are required to train all their employees on the City's wastewater collection system policies and procedures before performing work on the City's wastewater collection and conveyance system.

6.4 Spill Mitigation and Containment

The WWC Division has written the attached SOP for spill mitigation and containment. The plan is described throughout the SSOERP and in the Table 6-1 flowchart. Whenever a Sanitary Sewer Overflow (SSO) occurs, the highest priority is to contain the overflow and minimize the exposure to the public or the environment. This procedure will address the specific processes available to contain an SSO. Containment of an SSO becomes more difficult once the overflow reaches storm drain systems or a waterway. The quicker the source and the extent of the overflow can be identified, contained, or controlled, reduces the SSO's impact exponentially. Following the Sewer System Management Plan (SSMP) goals, quick response and containment will protect public health and safety while minimizing the environment's negative impacts.

The assessed hazards that may exist when responding to an SSO are:

- Traffic control
- Bloodborne pathogens
- Slips, trips, and falls
- Atmospheric conditions
- Pneumatic plugs
- Sprains and back injuries

Upon arrival to the location, survey the scene to determine the potential overflow location and source. There are times when called for a sewer overflow, and the source is potable water or storm drainage. Once determined, the water source is the sewer, mobilize the necessary wastewater collection personnel and equipment needed for assistance. Determine the category of the overflow, discharge points, and whether the SSO can reach Water of the State. Immediate notification to the Office of Emergency Services is required, should the overflow reach waters of the state. If the spill cannot be eliminated by controlling water flow from a residential or commercial building, more than likely, this spill is either a plugged main, structural deficiency, or an inoperable lift station. The area impacted by the spill and the potential work area shall be secured to divert vehicle traffic and pedestrians away from the area by using any combination of signs, cones, delineators, barricades, arrow boards, or caution tape. Multiple techniques are identified to contain the spill depending on the circumstances, spill category, and material available. In no order, the list below is possible containment options.

Containment Situation	Options for Containment
Curb and Gutter	• Create berm with rubber berm, dry sweep, dirt, or sandbags; Utilize natural low spots or grade deviations • Use hydro-vac to control overflow
Lift Station Failure	• Use hydro-vac to contain • Backup generator • Bypass pumping
Open Space	• Dig a trench for containment • Sandbag berm • Dirt berm
Creek	• Plug all affected storm drain inlets
Storm Drain System (Dry)	• Plug all affected storm drain inlets; plug outfall if necessary • Contain using the hydro-vac • Request additional hydro-vac support if necessary
Storm Drain System (Storm Event)	• Plug all affected storm drain inlets • Emergency bypass pumping • Turn off stormwater pump station if applicable
Building	▪ Evacuate residents if needed ▪ Pop cleanout cap off; If no city cleanout, attempt to locate ▪ Pop private cleanout if available ▪ Contain outside if overflow is relieved by locating/removing cleanout cap

Containment with Hydro-Vac

Determine a location downstream of the spill appearance point where the hydro-vac unit can be set up and capture all water, including wash down water. Ensure no storm drain inlets are between the containment point you choose and the overflow point. Continue vacuuming overflow until the blockage has been cleared. Once cleared, wash remaining spill water to the vac tube to be vacuumed up.

Containment Using Berms and Mats

Utilize dirt, rubber berm, dry sweep, or other obstructing material to block drain inlets and pond the spill to a low natural area to contain and minimize the spill's effects. If possible, divert the spill to a downstream manhole that is not affected by the blockage.

Attempt containment by covering the affected storm drain inlet with rubber mats. Secure the mat in place with sandbags, dirt, or other heavy objects to keep in place.

Containment Using Pneumatic Plugs

Plugging the affected drain inlet or multiple drain inlets with a pneumatic plug can be effective. A pneumatic plug in the storm drain outfall would prevent the overflow from reaching the waterway. However, depending on the location within the City, drain inlets will vary in size, so utilizing plugs may not be the best option.

SSOERP SSO Start Time Policy

Upon receiving call, note exact time that call received from answering service or administrative staff. This time will be used as a **base** for when the SSO started. Notify resident or business to stop using all water if possible.

A. Upon arrival, note if spill location point is or is not actively spilling. If not spilling from spill location point, but there is clear evidence of spill that requires a Vactor for cleanup effort, then document occurrence as a spill.
B. Initiate SSOERP to ensure that the SSO is contained, and the cause is corrected.
C. Photograph all affected areas, during the SSO, demonstrating containment and after cleanup. Use something in picture to gauge size of area features (i.e. tape measure, 5 gal bucket, etc) Email pictures to the Superintendent after completing necessary paperwork.
D. Provide detailed description of the SSO event, including exact times of arrival, SSO stop time, containment procedures, and names of collection personnel assisting you in the overflow.
E. The following questions should be asked of the resident or the individual reporting the potential SSO:
    1. Did you notice water coming from the cleanout at the property line or manhole in the street? If so, what was the approximate time?
    2. Were your drains running slowly at any time prior to you calling? If so, what was the approximate time?
    3. If there were neighbors outside, close to the area of the SSO, did they notice water spilling? If so, what was the approximate time?
    4. Be prepared to provide a brief summary of how you determined the start time, describing the steps you took while coming to your decision.
F. If the above questions do not produce an accurate account for the SSO start time, use the time the call was received by either the office personnel or the after-hours answering service, and subtract 15 minutes. Record this time as actual start time on the SSO Field Report Form.
G. If the evidence of the spill travels a farther distance than the logic of the 15 minutes, the field crew/responders shall try to recreate the spill the following day, using clean water.
H. In the event of an SSO from a sewer lift station, the start time will be determined using information gathered from the SCADA system.
I. SSO Stop time will be determined by either:
    1. The arrival time of the service worker if the overflow had stopped prior to their arrival.
    2. Clearing the blockage.
    3. Interview of resident or witnesses

SSOERP Flooded Structure Procedures

In the event a failure in the City's wastewater collection system causes a Sanitary Sewer Overflow in a resident's home or business, instruct them to:

1. Keep people and pets away from the affected area(s), and do not track contamination throughout non-affected areas.
2. Don't attempt to clean up the overflow. Instruct them the city has restoration companies available and will respond.
3. Turn off all central heat and air-conditioning systems and prevent flow from reaching any floor vents with towels or blankets.
4. Leave these items in the affected areas for restoration companies to cleanup.

Contact Risk Management at (916)774-5420 or (916)774-5202 during normal business hours. After hours, of if no answer, contact Virginia Bolmsn, Risk Manager at (916)501-2073. They will assess and notify restoration companies on contract with the city to respond. If the resident refuses the offered clean-up services, ask them to sign the declination letter, refusing the service.
If the resident chooses to file a claim for damages, instruct them they must fill out a Government Claim Form.

A claim form can be obtained in the following ways:

- In person at the Roseville Civic Center, City Clerks Department and Risk Management Division, 311 Vernon St., Roseville, CA .
- By mail, by contacting the Risk Management Division at (916)774-5202 or e-mailing the request to riskmanagement@roseville.ca.us
- Electronically by following this link: http://www.roseville.ca.us/hr/risk_management/how_to_file_a_claim.asp
- Completed forms must be returned by mail or in person to the City Clerk's office at the Roseville Civic Center.

SSOERP Water Quality Sampling

This water quality sampling procedure describes the process and the sampling methodology to be used in the event of a sanitary sewer overflow exceeding 50,000 gallons. The water quality sampling results will enable the division to prioritize areas of concern regarding water quality impacts. Surface water samples will be collected using a grab sample technique. Employees are required to wear new sterile powder free surgical gloves when collecting all samples.

Trigger for Sampling -Water quality sampling is required within 48 hours of initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.

Safety and Access- Water quality sampling should only be performed if it is safe to do so, and access is not restricted or unsafe. Unsafe conditions include traffic, heavy rains, slippery or steep creek banks, visibility issues, high flowing creeks and limited access due to soil conditions or poor terrain.

Where to Sample-

1. Source of SSO - Determine the entry point (source) of the SSO into the creek, and move downstream approximately 10 feet downstream.
2. Upstream Sample – Sample at a point 100 feet upstream from the source.
3. Downstream Sample – Sample at a point 100 feet downstream from the source. Determine the water velocity present in the creek or body of water during the SSO. Dropping debris in the creek, and timing how long the debris takes to travel a known distance is a good indicator of the water velocity present. Use this information to determine the next downstream sampling point. Multiply the water velocity by the spill duration to figure the furthest point downstream to sample.

Sampling Procedure-

1. Put on required PPE (safety glasses and latex gloves)
2. ***Collect Upstream Sample*** - Move approximately 100 feet upstream of the source.
    - **a.** Label the bottle accordingly and take a picture of the location you are sampling.
    - **b.** Sample away from the bank and avoid any debris or scum layer from the surface.
    - **c.** Fill the bottle against the direction of flow, replace the cap and secure the sample to avoid contamination.
    - **d.** Use a thermometer to measure the temperature of the upstream sample location and record the results.
3. ***Collect Source Sample-*** Move approximately 10 feet downstream of the source location.
    - **a.** Label the bottle accordingly and take a picture of the location you are sampling.
    - **b.** Sample away from the bank and avoid any debris or scum layer from the surface.

c. Fill the bottle against the direction of flow, replace the cap and secure the sample to avoid contamination.
d. Use a thermometer to measure the temperature of the source sample location and record the results.

4. ***Collect Downstream Sample*** – Move approximately 100 feet downstream of the source.
   a. Label this sample "Downstream 1" and take a picture of the location you are sampling.
   b. Sample away from the bank and avoid any debris or scum layer from the surface.
   c. Fill the bottle against the direction of flow, replace the cap and secure the sample to avoid contamination.
   d. Use a thermometer to measure the temperature of the downstream sample 1, and record the results
5. ***Collect Downstream Final Sample*** – After using the velocity and distance to determine the furthest downstream sample point, move to that location.
   a. Label this sample "Downstream Final" and take a picture of the location you are sampling.
   b. Sample away from the bank and avoid any debris or scum layer from the surface.
   c. Fill the bottle against the direction of flow, replace the cap and secure the sample to avoid contamination.
   d. Use a thermometer to measure the temperature of the sample, and record the results

Required Water Quality Analyses – As detailed in section C-5 of Monitoring and Reporting Program (MRP), Order WQ- 2013-0058, a Technical Report shall be submitted in CIWQS online database with 45 calendar days. All samples will be immediately transported to the nearest certified water quality laboratory for analysis (DCWWTP or PGWWTP labs). The sample analysis, at a minimum will include the following:

1. Ammonia
2. pH
3. Electrical Conductivity
4. Bacterial indicators, such as total and fecal coliform enterococcus and e-coli, per the regional Basin Plan or as directed by SWRCB
5. Temperature

Equipment and Supplies – The following items and PPE are required for sampling:

1. Cooler with Blue Ice
2. Sterile sampling bottles
3. Powder free latex gloves
4. Safety glasses
5. Marking pen
6. Field log forms

SSOERP Sewer Call For Service

When dispatched to a home experiencing sewer problem, the following procedures should be adhered to provide the resident with the best possible customer service and quickly correct the problem causing the SSO.

Residential

1. Contact the homeowner or resident upon arrival. Explain the process you will use to determine the problem. Resident should have already been instructed to stop all water use, so if water is still spilling from cleanout, check the nearest upstream manhole on the mainline for a blockage.
2. If no cleanout is visible, look in CMMS for cleanout location, look for an "S" marked in the curb, or other information that might indicate a cleanout.
3. If a city cleanout is found, clear the lateral blockage using the eel and a root cutting head, do not use a hand tape. CCTV to ensure line is clear, and all blockages have been removed. Record all time and pertinent information you have found on a work order, service request, or for after-hours calls, your overtime tag.
4. If no cleanout is found, locate the closest downstream manhole, and call for Vactor assistance, and run the main.
5. If the residence does not have a city cleanout, and the above procedures did not alleviate the blockage, we will use our equipment to run a "Viable" cleanout that belongs to the resident. This "viable" cleanout should be a factory fitting 4" cleanout, either a wye or combo wye, that we can easily get our equipment into and service the line. Once the line has been cleared, we will CCTV through this same cleanout, and determine where the blockage was located.
6. If the blockage was located below the location a city cleanout should be installed, we will schedule a cleanout installation during normal business hours.
7. If the blockage is located within the customer's service line, notify them that the problem is in their portion of the lateral, the location and severity of the problem. Advise the resident of the City's policy for cleanout installation, and let them know this is a one-time service, and the city will not clear future blockages from the homeowner's cleanout.
   Document all information in the CMMS under activity code- SPHCC, (Sewer Plug Homeowner City Cleared) on a service request.

Private Commercial *– When dispatched to a commercial property experiencing an SSO, start containment of the spill immediately. Notify the manager to stop using water and to call a plumber. Make sure the manager understands City staff will be containing the spill until their plumber responds, and they will be billed for staff and equipment. If after 60 minutes, the plumber doesn't show, notify Placer County Health Department. Notify your supervisor that the health department has been called and to discuss possibly clearing the main or service.*

SSOERP Sewer Lift Station Failure Response

The purpose of this procedure is to define strategies necessary to prevent an SSO from a lift station, in the event of a power or component failure within a lift station. The City of Roseville operates and maintains 17 neighborhood lift stations. Each station is equipped with SCADA, monitored 24 hours per day by wastewater treatment plant personnel. Each station has the maximum allowable downtime posted inside the door of each control panel. This identifies the retention time and the storage capacity in the collection system assets, before an SSO will occur. The lowest identified manhole is also identified to assist on call personnel in determining the remaining downtime. In the event of a lift station failure, the plant operator will notify the answering service that an alarm has been activated at a station, and the on-call service worker will respond and assess the alarm.

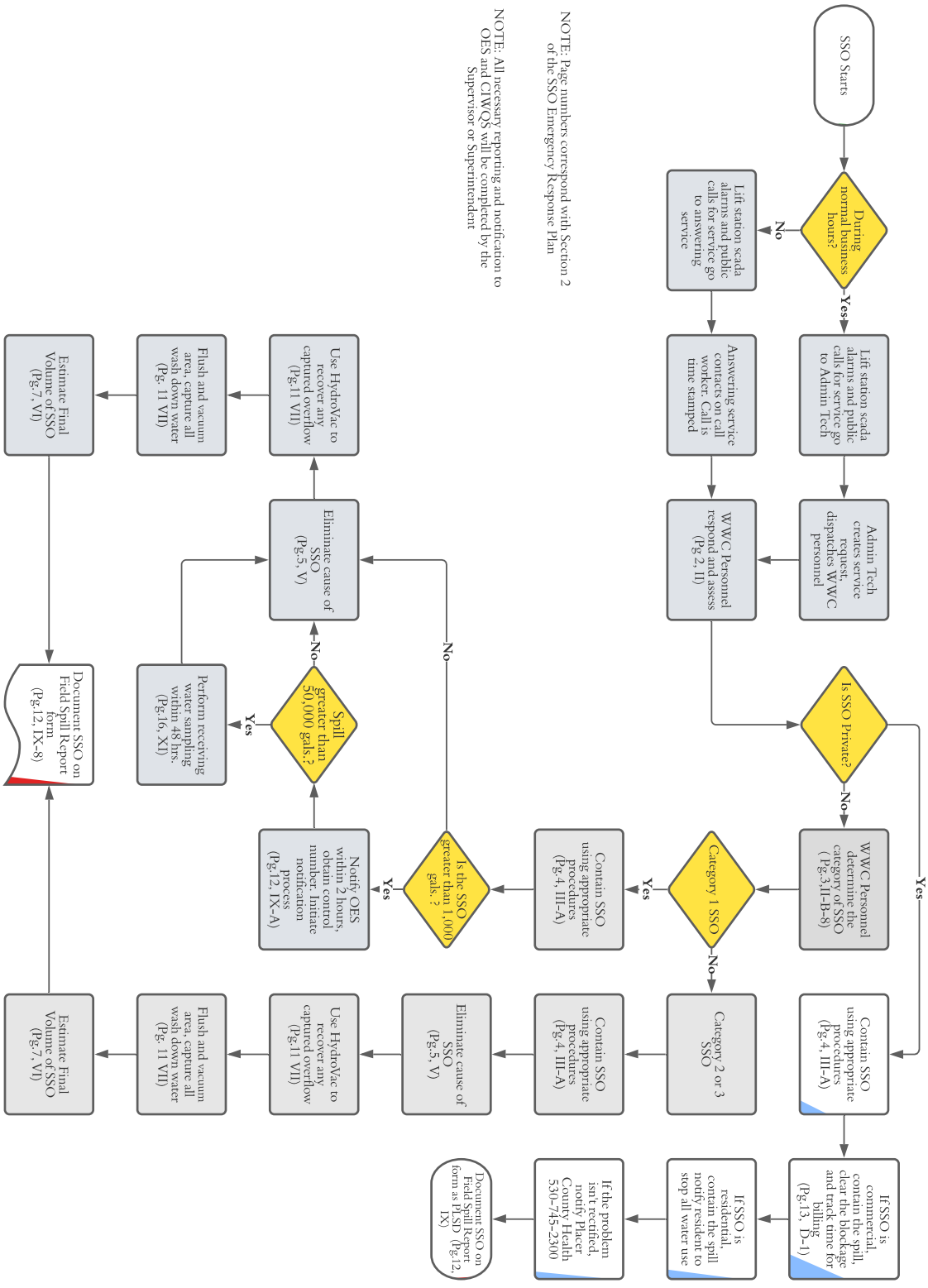
If no power is present in the panel, the service worker will:

1. Contact Roseville Electric at (916)774-5620, to verify they are aware of the outage.
2. Determine the level, and remaining downtime left in the station.
3. If downtime will be more than the maximum allowable retention, the on call service worker will call collection system personnel off the standby list, to get a Vactor in route. The Vactor will decant water at an identified point in the system, which won't affect the left station levels. If it appears that one Vactor won't keep up with flows, the on call service worker will call in additional personnel with Vactor to maintain levels in the station.
4. If outage appears to be a lengthy process, contact supervisor. Portable generator may be needed. In this event, an electrician will be needed.
5. Once flows are maintained, contact Supervisor to make them aware of the situation.

If Power is present in station, but pumps are not operating, the service worker will:

1. Attempt to operate the pumps in "hand" mode to eliminate the possibility of an SSO
2. If the pump operates in "hand", continue operating and monitor the levels in the wet well. Contact the On Call Electrician (916)532-0612 and continue to monitor.
3. If station will not operate in hand mode, call additional personnel in with Vactor to monitor wetwell levels. Vacuum and decant accordingly, until the problem is rectified.
4. If it appears that one Vactor won't keep up with the amount of flow into the wet well, the service worker will call in a second Vactor to maintain the levels in the station.
5. Standby and assist on call electrician, until the station is operational.

SSOERP SSO Chain of Communication



THIS PAGE LEFT INTENTIONALLY BLANK

7 Sewer Pipe Blockage Control Program

Att. D-7	The SSMP must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed. The procedures must include, at minimum: An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances; A plan and schedule for the disposal of pipe-blocking substances 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 substances generated within a sanitary sewer system service area; The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages; Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements; Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance; An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.

The City of Roseville's Pipe Blockage Control Program focuses on public outreach, proper disposal practices, and preventive maintenance to manage and reduce blockages caused by FOG, roots, non-dispersible wipes and other pipe-blocking materials. The City uses social media, newsletters, and public events to educate residents and businesses on the correct disposal of FOG, offering free collection and disposal services for residents.

The City relies on two major components to control or eliminate the amount of these pipe blocking materials entering the wastewater system, 1) cleaning and inspection of the collection system on a prescribed maintenance schedule and 2) inspection, enforcement, and education for FSEs and controlling Fats, Oils and Grease (FOG) from entering its system.

In addition to a strong focus on eliminating FOG in its system, the City's Wastewater Collection Division implements an effective chemical root control program. Vaporooter products are used to restrict or eliminate root growth in the City-owned portion of the lower lateral. The division holds two Qualified Applicators' Licenses (QAL), enabling the City to chemically treat laterals and allowing for a more efficient root control program without outsourcing.

The City operates two wastewater treatment plants with FOG receiving stations to handle materials collected from the public. The City has legal authority within the Roseville Municipal Code (RMC) to regulate and restrict harmful discharges, mainly targeting food service establishments (FSEs), through an established FOG program to prevent sewer blockages and ensure efficient sewer system operation. The City addresses areas prone to blockages by maintaining a "Hot Spot List" of sewer mains identified through historical data, field observations, and CCTV inspections.

These areas are tracked using GIS tools, and the cleaning frequencies range from 1 to 6 months based on need. Reducing hot spots through capital improvement and rehabilitation projects is a top priority for the City.

7.1 Public Education Outreach

The City, in partnership with neighboring agencies developed the website, Live Sewer Smart. The website provides links to valuable information to educate and encourage proper ways to reduce impacts on the sewer system from FOG, roots and flushable wipes. The website is located at Live Sewer Smart. The Wastewater Collection Division actively participates in Earth Night events, Big Trucks Day Big Trucks Day, and other community activities to educate residents on proper sewer system use and promote practices that minimize the impacts of FOG and flushable wipes on the system. In addition, the City of Roseville's Utility Exploration Center (UEC) offers insight to the City's utility systems. The recently remodeled center, holds special events, hosts school programs and provides workshops to help the community learn how to live Sewer Smart. The webpage can be found at Utility Exploration Center

WWC and Industrial Waste Division personnel developed public outreach materials and handouts that are distributed to all food service facilities managers during the facility inspection. In addition, all FSEs are required by RMC Section 14.14 to apply for a FOG Discharge Permit. The permit application includes references to RMC 14.14, which provides Frequently Asked Questions, Maintenance and Pumping Requirements, and Best Management Practices (BMPs) for the managers to follow. Finally, the City's website offers links for public outreach at FSE Public Outreach

7.2 FOG Disposal Plan

Food Service Establishments and FOG generators are responsible for hiring private service providers to pump and haul FOG from their grease removal device at scheduled intervals. The requirement of the permittee is to keep all records, manifests, receipts and invoices for the cleaning and maintenance of the device, which includes final disposal location. These records shall be provided to any City of Roseville inspector or enforcement officer upon request. Although City does not endorse or recommend services provided by any one service provider, the City will provide a list of service providers that are commonly used by businesses in the area.

7.3 Legal Authority

The WWC Division of Environmental Utilities manages the FOG control program, issuance of permits and performs inspection of all FSEs within its service area. In addition, RMC Chapter 14.14 includes all legal authority necessary to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG. All FSEs are required to provide wastewater that is acceptable to the city, before discharging to the public sewer. A summary of the legal authority is included in Table 8.

Table 8 – FOG Legal Authority

RMC Chapter Number	RMC Chapter Title
14.14.010 (A)	General Provisions- Purpose
14.14.030	FOG-Waste Discharge Permit Required
14.14.040	FOG-Discharge Limitation
14.14.050	Public Sewer Overflow; Nuisance abatement
14.14.070(F)	Prohibitions
14.14.190	FOG Discharge Permit Conditions
14.14.320	Harmful Discharge
14.14.360	Violation-Penalty

7.4 GRD, Design Standards, BMPs, Recordkeeping and Reporting

7.4.1 Requirement to Install GRD

Every FSE at the time of construction, remodel or change in operation is required to install and maintain an approved and adequately sized grease removal device. In addition, at the EU Directors' discretion, may require an FSE that has caused or contributed to a grease-related blockage, install a grease removal device. Depending on the type of facility, certain FSEs may require a grease interceptor, grease trap(s), or may not require a grease removal device (GRD). If during the plan review process, an FSE enrollee does not believe that their operation needs the designated GRD, they can request a variance from the ordinance. The final determination of the variance request is at the sole discretion of the EU Director.

7.4.2 Design Standards

The City Design Standard section 9-10. (G) indicates grease removal device sizing and installation shall conform to the current edition of the California Uniform Plumbing Code. Grease interceptors shall be constructed following the design approved by the director and shall have a minimum of two compartments with fittings designed for grease retention. A 24" access manhole shall be installed over each interceptor chamber. The frame and cover shall be watertight and set to finish grade, making inspection, sampling, and grease removal activities available.

In addition, the grease interceptor shall be installed at a location where it shall always be easily accessible for inspection, cleaning, and removal of accumulated grease. The minimum size of a grease interceptor for a new FSE is 1,000 gallons.

7.4.3 Best Management Practices

Every FSE shall implement BMPs in its operations to minimize the discharge of FOG to the grease control device and/or the public sewer. Detailed requirements for BMPs shall be specified in the FOG WDP and all FSEs are required, at a minimum, to comply with the permit BMPs as well as any additional BMPs established by the director. BMPs may include, but are not limited to, kitchen practices and employee training procedures that are essential in minimizing FOG discharge to the public sewer. Additional BMP practices are available on the City's website at FOG BMP's

7.4.4 Records and Reporting Requirements

The permittee shall be required to keep all manifests, receipts, and invoices of all cleaning, maintenance, grease removal of/from the grease control device, disposal carrier, and disposal site location for no less than three years. In addition, the permittee shall, upon request, make the manifests, receipts, and invoices available to the director, any inspector, or an enforcement officer. These records may include an on-site logbook of grease interceptor, grease trap or grease control device cleaning and maintenance practices, a description of BMPs being implemented, including employee training, and copies of records and manifest of waste hauling interceptor contents.

7.5 Authority to Inspect

RMC section 14.14.290 grants the Director, an inspector, or an enforcement officer access to all parts of a wastewater generating and disposal facilities for purposes of inspection and sampling during all times the FSE is open and operating. No person shall interfere, resist or refuse entrance to the Director, an inspector, or enforcement officer attempting to inspect the facility. Any violation of this chapter, or the orders, rules, regulations, and permits issued under this chapter, is unlawful and shall be an infraction or misdemeanor as determined by the city attorney

7.6 Hot Spot Identification and PM Schedule

The WWC Division's CMMS maintains all records for maintenance, inspection, and construction work orders for the collection system. Sewer mains subject to blockages from FOG or mains that require higher cleaning frequency are added to the division's Hot Spot List. These mainline segments tend to have more frequent backups due to sluggish flows, poor grades, and sags, which allow solids to settle and FOG to form. The hot spot list has been compiled based on historical data, field crew observations, and CCTV condition assessments. These mainlines are also identified in a GIS layer in the Roseville GeoViewer, so field crews can access them while performing maintenance in the field. The frequency of Hot Spot cleaning ranges from 1-6 months, depending on history and CCTV inspection data. The WWC division strives to reduce and eliminate these hot spot areas during CIP projects or rehabilitation projects performed by City crews.

Mainline segments get added to the Hot Spot list based on conditions noted during CCTV inspection and the current frequency of cleaning. Currently, 276 mainline segments are identified as Hot Spots.

7.7 FOG Source Control Measures

One of the more significant additions to the WWC FOG program was the requirement of a FOG Waste Discharge Permit (WDP). Ordinances in the RMC require that before discharging any wastewater from an FSE into the wastewater system, the enrollee must obtain a WDP. The WWC division performs facility inspections before the FSE can discharge. The terms and condition of the WDP are as follows.

- Grease interceptors/traps are required for food handling facilities unless the Environmental Utilities Director has issued a waiver or variance (RMC 14.14.130).
- An FSE with a waiver or variance that has caused or contributed to a grease-related Sanitary Sewer Overflow (SSO) will be required to install a grease removal device. In the event it is not practical or feasible to install a grease removal device, the FSE will be subjected to an Annual Grease Mitigation Fee
- Grease removal devices shall be designed, constructed, and installed following California Plumbing Code Title 24, Part 5 and the City of Roseville Design and Construction Standards.
- Grease removal devices shall be maintained by pumping the entire contents when grease and sludge have exceeded 25% of the capacity of the interceptor, including removal of entire contents each time the interceptor is pumped. The interceptor shall be pumped out at a minimum of 6-month intervals or more frequently, depending on grease load from FSE. The grease hauler shall be licensed with the California Department of Food and Agriculture.
- The permittee shall retain pumping and maintenance records for a minimum of 3 years. These records shall be submitted quarterly to the City of Roseville and shall be readily available to City personnel inspecting the facility. At a minimum, the following information is required for the reporting records:
    - Date of Service
    - Volume removed
    - Grease Hauler Permit number
    - FOG disposal destination records
- The permittee shall implement Best Management Practices (BMPs) in its operation to minimize the discharge of FOG to the sewer system under RMC 14.14.060
- The permittee shall notify the City of Roseville Wastewater Collection Division at 916-746-1890 of any of the following:
    - Sale, lease, or transfer of the operation for which the permit was issued.
    - Change of facility name
    - Changes to grease removal device or remodels, additions, or alterations to FSE greater than $20,000
    - Any SSO or blockage that would contribute to an SSO

THIS PAGE LEFT INTENTIONALLY BLANK

8 System Evaluation and Capacity Assurance Plan and Capital Improvements

Att. D - 8	The plan must include procedures and activities for: (1) Routine evaluation and assessment of system conditions; (2) Capacity assessment and design criteria; (3) Prioritization of corrective actions; and (4) A Capital Improvement Plan.

8.1 System Evaluation and Condition Assessment

Two hydraulic models were developed and used by the WWC Division (Roseville Model Project and South Placer Wastewater Authority (SPWA) Wastewater Systems Evaluation Project) to identify peak flows in each collection system component (pipe and pump station). In 2007, a hydraulic model of the City's sewer collection system was developed using the H2OMap Sewer modeling platform (2007 Model Development Project), parallel with a trunk sewer model for the combined Roseville, SPMUD, and Placer County systems. However, the City's sewer model was updated in 2017 to reflect existing and future demands within the City and upgrade the modeling platform to the fully dynamic InfoWorks ICM software. In addition, for the current Systems Evaluation Update, the City's model was updated in December 2020 to reflect existing, and future projected flows from Placer County and SPMUD.
EU Engineering staff will periodically run the hydraulic model for development, the Wastewater Principal Engineer will review and update the system evaluation and capacity assurance plan every ten years, looking for deficiencies and opportunities for improvement.

The City developed a project for easement mainline condition assessment to evaluate system accessibility and identify critical areas based on condition and environmental impact in case of a blockage or spill. The project will provide a comprehensive understanding of the system's condition, recommend improvements for access to the offsite segments, and prioritize areas for action with a ranking system from 1 to 10, guiding the City's efforts to address the most critical issues.

The City began its condition assessment of the collection system in 2006. At that time, the collection system was divided into 24 groups based on the age of the sewer main installation. The first group of pipes and manholes were inspected and included in the Rehabilitation and Replacement plan developed shortly after. To date, City crews have completed inspections in 18 of those 24 groups, which has led to the development of numerous CIPP and replacement projects.

The City inspects the wastewater collection system using three CCTV vans, with operators using NASSCO's PACP coding system to document and rank the condition of sewer mains and laterals. This inspection data is archived in the Granite Net Software system for easy access. To improve system reliability, the division has added Electroscan technology into a CCTV inspection truck, enabling the detection and measurement of infiltration and inflow (I&I) by identifying pipe leaks through electrical measurements. This technology helps prioritize targeted CCTV inspections, plan repairs, and evaluate the quality of CIPP rehabilitation projects.

8.2 Capacity Assessment and Design Criteria

The WWC Division established 10-year 24-hour peak wet weather storm design criteria for the evaluation of existing collection system components and sizing of new collection system in the Roseville Model Project and the SPWA Wastewater Systems Evaluation Project. This included the development of wastewater flow generation factors based on water use records and flow monitoring data in the City of Roseville.

The SPWA Wastewater Systems Evaluation included the identification of short and long-term Capital Improvement Projects (CIP) to meet current and future build-out flow projections for trunk sewers larger than 15 inches. Several deficiencies were identified in non-regional facilities which resulted in model-predicted overflows for one or more of the scenarios. Within the regional system, seven areas have been identified that either have deficiencies or could be impacted when upstream deficiencies are relieved. The System Evaluation and Capacity Assurance Report developed by the South Placer Wastewater Authority, in conjunction with Regional Partners Placer County and South Placer Municipal Utility District is located on the City's webpage at System Evaluation Report

8.3 Prioritization of Corrective Action

The WWC Division Condition Assessment CIP divided the collection system manholes and pipes into 24 groups. The first group of pipes and manholes was inspected starting in 2006 and was included in the Rehabilitation and Replacement plan developed shortly after. The city continuously inspects pipelines using NASSCO's PACP coding standard to develop a list of assets that need rehabilitation. When defects are identified, the city evaluates the risk of failure and assigns a priority ranking to each asset. Prioritizing those assets relies on several factors, including:

- Severity and extent of the defects (PACP Score).
- Maintenance records and SSO occurrences
- Hydraulic capacity needs and projection.
- The estimated remaining useful life of the infrastructure

The goal of the CIP is to develop annual project bundles of approximately $1.5 million. Using the priority rank of the pipe segment, the CIP prioritization includes one additional factor, street repairs. To minimize disruption to newly paved streets, those streets that the City anticipates repairing in the upcoming fiscal year are highest priority.

Condition assessments will be continually performed, and the CIP will be adjusted after each evaluation as follows:

- Emergency repairs will be done immediately and not be included in the CIP.
- Priority will be given to those assets which lie in the street to be paved such that the repair is done before street repaving
- Pipe segments will continue to be rated on the 1 to 5 scale, with 5 being the highest priority and 1s being the lowest. So, a 5 from the previous year's assessment would be prioritized over a 4 from the current assessment.

In addition to condition assessment, the WWC division schedules with Public Works to inspect wastewater infrastructure ahead of residential and arterial street paving projects. This process enables the WWC division to perform necessary system improvements before completing the overlay project. The City maintains a 5-year list of planned R&R CIP projects

8.4 Capital Improvement Plan

Proposed improvement projects have been developed, and verified using the hydraulic model, to alleviate surcharging. Each proposed project was reviewed on aerial mapping to identify potential design and constructability issues. These improvement projects were developed to sequentially decrease surcharging in downstream sewers. Capital Improvement Projects identified for the wastewater collection system in FY 2024-2025 are summarized in Table 9.

Table 9 – Capital Improvement Projects

CW Project Number	Project Name	Project Budget
400078	Sewer Collection System Cured in Place Rehabilitation	$3,967,428
500191	63-inch and 66-inch Interceptor Rehabilitation	$2,500,000
500341	Church Street Wet Weather Upgrades	$4,950,000
	Pump Station #26	$926,000
	Critical Sewer Manhole Access Study	$45,000

THIS PAGE LEFT INTENTIONALLY BLANK

9 Monitoring, Measurement and Program Modification

Att. D-9	The SSMP must include an Adaptive Management section that addresses Plan implementation effectiveness and the steps for necessary Plan improvement, including: (1) Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities; 2) Monitoring the implementation and measuring the effectiveness of each Plan Element; (3) Assessing the success of the preventive operation and maintenance activities; (4) Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and (5) Identifying and illustrating spill trends, including spill frequency, locations and estimated volumes.

9.1 Metrics to Prioritize SSMP Activities

The WWC Division has developed Key Performance Indicators to assess their progress in maintenance, operations, and sanitary sewer collection system management. The entire KPI worksheet is included as Appendix 9-1. The metrics were developed to identify successes and challenges in reducing SSO frequency and impacts, improving collection system reliability, and providing capacity in the system to convey peak flows. Establishing specific KPIs for each element allows the WWC Management team to determine the degree of success of each component. Measurable performance indicators, e.g., number of SSO occurrences, length of lines cleaned, spill response times, number of capital projects completed, etc., are used. Additionally, the KPI benchmarking metrics worksheet includes the following categories of metric information:

- System Information
- Financial Information
- Sewer Maintenance
- Performance Measures

The City tracks detailed information about spills. While the number of spills has fluctuated up and down over the past four years, the average volume per spill has decreased. This metric demonstrates the City's proactive efforts to contain and control spills and mitigate them efficiently. In addition, the City consistently shows a significantly lower spill rate per 100 miles of pipe versus the State and Regional averages. These measurements indicate a successful sewer management program, employee training, emergency response, and a dedication to mitigating the effects of spills.

9.2 Monitor and Measure Element Effectiveness

The WWC Division implements all elements of this SSMP and has been effective in minimizing spills and controlling the volume of those spills when they occur. The WWC Division evaluates the performance of its wastewater collection system at least annually using the developed KPIs. The City will then initiate changes to this SSMP and the related programs based on the results of the KPI evaluation. In addition, the Review of the SSMP and its elements is an assigned annual training for all WWC employees. A summary of the tracked KPIs and the relation to the SSMP elements are in Table 10.

Table 10 – KPI Summarization

SSMP Element	Purpose	Performance Indicator
Goals	Sets Priorities for Division	Goals are listed in Chapter 1 of SSMP
Organization	Documentation of Chain of Command	Continually update Chain of Command Org. chart as changes occur
Legal Authority	Ensures Ordinances Are Upheld Protecting Integrity of the System	Roseville Municipal Code
Operations and Maintenance	Reduce & Eliminate SSOs through PM, CM and Emergency Response	▪ Manhole inspections performed ▪ Miles of sewer mains flushed per year ▪ Average cost of hydro cleaning ▪ Miles of sewer main and laterals CCTV per year ▪ Sewer cleanouts installed ▪ Sewer laterals rehabilitated ▪ Total miles rehabbed or replaced- mains and laterals
Design and Construction Standards	Ensures Infrastructure Is Designed, Installed and Tested Properly	▪ %Of new sewer main inspected vs. accepted ▪ % of new lateral inspected vs. accepted
Overflow Emergency Response	Provide Swift Response, Minimize Effects of an SSO, And to Meet Regulatory Requirements	▪ Average response time to SSO ▪ Average SSO duration mains and laterals
Pipe Blockage Control Program	Ensure Illicit Discharges of FOG Aren't Entering the Wastewater System, Reduces FOG Blockages And Overflows	▪ Public outreach events per year ▪ Gallons of FOG curbside pickup ▪ % of FSEs with grease removal device ▪ FSE FOG inspections per year ▪ Number of spills & volume spilled from hot spots ▪ Number of sewer laterals CIPP lined
System Evaluation & Capacity Assurance	Evaluate and Ensure System Capacity is Sufficient.	Hydraulic Model developed and run for new development and special projects,
Monitoring, Measurement & Program Modifications	Evaluate The Effectiveness of The SSMP and the Maintenance Activities Necessary to be Compliant	▪ Total SSOs and volume spilled (mains and laterals) ▪ % Of total volume recovered ▪ Total number of wet-weather spills ▪ Repeat spills within two years ▪ Spills per 100 miles of pipe/year ▪ Number of Category 1 spills ▪ % of spills caused by rags, roots, debris and FOG ▪ # of Lift station failures
Program Audits	Measures SSMP Effectiveness and Necessary Changes	Audits are performed on schedule, by an outside independent Engineering Firm
Communication Plan	Communication With the Public and Satellite Agencies on SSMP Performance	Regional partner meetings, City Website.

9.3 SSMP Performance Monitoring and Update Process

The WWC Division will monitor sewer performance metrics monthly and review the status of each SSMP element annually, with formal audits conducted every three years. As a "living document," the SSMP allows the Wastewater Superintendent to initiate corrective actions whenever deficiencies are identified between audits. Proposed modifications to the SSMP will primarily come from WWC Supervisors or input from field crews, while the review and approval of amendments, whether major or minor, will be the responsibility of the WWC Superintendent. The field crews and supervisors regularly communicate regarding field issues found in the field. Management uses this information to evaluate the success of the preventative maintenance programs and the frequency they are performed. This strategy fosters buy-in from the field crews as they continually check their effectiveness and identify potential areas for improvement in their performance. Open communication and feedback is essential for the City's success and meeting the SSMP goals.

9.4 Spill Trends

The KPI Benchmarking worksheet includes sixty-three data points to track preventative maintenance activities, enabling management staff to develop spill trends. Based on these trends, Supervisors will adjust the preventative maintenance programs to address trends that aren't in alignment with the SSMP goals. The KPI worksheet is populated using data from completed work orders stored in the City's CMMS, Maximo. Assigned personnel complete data entry on a semi-annual basis minimum to keep the KPI sheet updated.

9.5 Monitoring, Measurement & Modification

Refer to Appendices 9-1 and 9-2 that include the following documents:

Appendix 9-1 KPI Benchmarking Metrics Sheet
Appendix 9-3 Spill Historical Summary

THIS PAGE LEFT INTENTIONALLY BLANK

10 Program Audit and Annual Report

Att. D-10	The SSMP shall include internal audit procedures, appropriate to the size and performance of the system, for enrollees to comply with section 5.4 (SSMP Audits) of this General Order

10.1 Audit Process Summary

The City audits and updates its SSMP every three years based on the General Order. Updates may occur more frequently if the Superintendent discovers modifications or regulations changes between audits. The purpose of the audit is to evaluate the effectiveness of the SSMP, primarily through evaluating system metrics and performance measures. In addition, the audit evaluates the City's compliance with the SSMP requirements.

The City has invested in the resources of a local engineering firms and private consultants to perform the biennial audit for the last three audit cycles. The consultants administer the audit much like an RWQCB audit would be. The process starts with gathering information utilizing the Water Boards Pre-Inspection Questionnaire. This Audit Process has proven successful for the City, as significant changes have been made based on audit findings. The City will continue with this process for future audits.

10.2 SSMP Audit Documents

Refer to Appendices 10-1 through 10-6 that include the following audit forms and reports for the previous six audits:

Appendix 10-1 SSMP Internal Audit FY 10-11
Appendix 10-2 SSMP Audit FY 11/12-FY 12/13
Appendix 10-3 SSMP Audit FY 13/14-FY 14/15
Appendix 10-4 SSMP Audit FY 15/16-FY 17/18
Appendix 10-5 SSMP Audit FY 18/19-FY 20/21
Appendix 10-6 SSMP Audit FY 21/22-FY 23-24

THIS PAGE LEFT INTENTIONALLY BLANK

11 Communication Program

Att. D-11	The SSMP must include procedures for the Enrollee to communicate with the Public for: (1) spills and discharges resulting in closures of public areas; (2) The development, implementation and update of the SSMP, including opportunities for public input to SSMP implementation and updates. Owners/operators of systems in the enrollee's system, including satellite systems for system operation, maintenance and capital improvement related activities.

11.1 Purpose of the Communication Program

The purpose of the Communication Program is to describe how the City will inform, educate and engage with its stakeholders, regional partners, and the public on the development, implementation, and performance of the SSMP. Another aspect of this program is to increase public awareness of services provided by the City. Raising awareness of the significance of the sewer system and the impacts businesses and residents can make on the system is of utmost importance.

11.2 SSMP Development and Implementation

There were several opportunities for public comment during the development and implementation process at City Council meetings. In addition, the SSMP has been certified by the City Council on three occasions, 2009, 2014, and again in 2019. Since certification by the City Council, the division's SSMP has been audited on five occasions. This effort on re-writing the SSMP in its entirety will be on the City Council agenda for approval. Once approved, the document is available for download and review on the City's website at: City of Roseville Sewer

11.3 Public Outreach

The City's website is the central hub of communication for the businesses and residents of Roseville. The division's website offers many links to assist the public with any sewer issues, explain the importance of the City's wastewater collection system and summarize all the provided services. The division's motto is to "Call us First" with all sewer problems. Our emergency response service van is wrapped with the Call Us First motto. Since the City owns and maintains the lower lateral from the property line to the City main, calling us first to investigate a potential blockage may save residents from an unnecessary plumbing bill. Environmental Utilities in partnership with Roseville electric publishes a monthly print newsletter, Utility News, which goes out monthly to all customers who receive a printed bill. This newsletter includes information about all aspects of utilities and how customers can reduce impacts to infrastructure. Additionally, customers get an electronic version of similar stories sent to their emails, adding to the number of messaging opportunities the city provides.

The WWC Division is expanding the use of the website and social media to deliver proactive and deliberate messaging on WDR/SSMP requirements and program status to residential, commercial, industrial, and public stakeholders.

11.3.1 Utility Exploration Center

The Wastewater Division in partnership with the Utility Exploration Center, hosts high school students from surrounding areas at locations within the city. These events provide students with the opportunity to explore a wide range of careers within the utility industry. Stations are staffed by utility workers, specialists, and supervisors who conduct demonstrations showcasing typical and challenging field scenarios. Crews highlight the tools and equipment used in their specialties and explain how they collaborate as a team to deliver effective service to Roseville's Wastewater Utility customers.

11.3.2 Live Sewer Smart

The City belongs to a multi-jurisdictional group named Live Sewer Smart. The Live Sewer Smart website contains information for residents of Roseville and the surrounding communities to educate and encourage proper ways to reduce impacts on the sewer system. For example, the website provides residents with timely information regarding wipes in the pipes, how to properly dispose of FOG, and contact information for all agencies belonging to the program, should they have questions. In addition, there are several links to videos presenting more details that affect residential and commercial sewer systems. Live Sewer Smart can be located at: Live Sewer Smart

11.4 Tributary/Satellite Communication

The WWC Division routinely communicates with their satellite partners and often supports them with mutual aid sharing in terms of equipment and resources. The City has three formal agreements with tributary and satellite systems in place and currently working on a mutual aide agreement with the County of Placer Wastewater Division. The listed agreements below are included as appendices in Chapter 3:

- The Joint Exercise of Powers Agreement for the SPWA – Appendix 3-2
- The agreement regarding the operation of and use of the South Placer Regional Wastewater Facilities – Appendix 3-3.
- The Contract and Operating Agreement with Sacramento Area Sewer District and Sacramento Regional County Sanitation District – Appendix 3-4

Appendix 3-1

Pretreatment Enforcement Response Plan

CITY OF
ROSEVILLE
TRADITION • PRIDE • PROGRESS

Environmental Utilities
Laboratory / Industrial Waste
1800 Booth Road
Roseville, California 95747-9708

RECEIVED
SACRAMENTO
CVRWQCB
05 OCT 31 PM 12:41

October 31, 2005

Regional Water Quality Control Board
Attn: Richard McHenry
11020 Sun Center Dr., #200
Rancho Cordova, CA 95670-6114

Re: CITY OF ROSEVILLE ENFORCEMENT RESPONSE PLAN

Dear Richard,

As per our September 9, 2005 response to the Report of Recent Inspection, Industrial Pretreatment Program, Wastewater Treatment Plants, City of Roseville, Placer County, enclosed is the City of Roseville's revised Enforcement Response Plan (ERP).

If you have any questions, please call me at (916) 746-1876.

Sincerely,

Kim Spear
Lab/IW Manager

cc: A. O'Brien, City of Roseville

CITY OF ROSEVILLE

PRETREATMENT PROGRAM

ENFORCEMENT RESPONSE PLAN

October 27, 2005
Prepared by,

Kim Spear
Lab/IW Supervisor

Table of Contents

1. Introduction/Personnel 3

2. Industrial User Inventory 3

3. Compliance Monitoring Procedure 4

4. Enforcement Response Guide 6

5. Legal Authority 10

Forms: City of Roseville Water Quality Laboratory Chain of Custody
Caltest Analytical Laboratory Chain of Custody
Application for Non-Domestic Wastewater Discharge
Wastewater Discharge Permit
Industrial User Inspection Report Form
Warning Notice of Violation
Notice of Violation

1. INTRODUCTION

The City of Roseville's Pretreatment Program Enforcement Response Plan (ERP) outlines operational procedures intended to ensure that the Significant Industrial Users (SIUs), and the small Commercial/Industrial dischargers to the sanitary sewer system are appropriately permitted and monitored. The Industrial Waste Division of the Environmental Utilities Department administers the ERP. To assure compliance by these dischargers, the Industrial Waste Division implements enforcement procedures specified by the U.S. Environmental Protection Agency in accordance with 40CFR 403.5 (f) (5). The ERP specifies criteria by which Industrial Waste personnel determine the enforcement action most appropriate to the nature of the violation. The Industrial Waste Division consists of the following personnel:

Industrial Waste / Laboratory Supervisor (1)
Laboratory/Industrial Waste Technician (1)
Data Management Specialist (0.2)

Dry Creek Wastewater Treatment Plant (DCWWTP) and Pleasant Grove Wastewater Treatment Plant (PGWWTP) are Regional facilities that not only service the City of Roseville but also service the South Placer Municipal Utility District and parts of the unincorporated areas of south Placer County. As a result, the City of Roseville also administers the Pretreatment Program on behalf of these Regional partners.

2. INDUSTRIAL USER INVENTORY

The development of the Industrial User Inventory (IUI) was originally developed at the time of Pretreatment Program approval in 1983. This is divided between Significant Industrial Users (SIUs) and small Commercial/Industrial Users.

A. Significant Industrial Users are defined as:

1. All categorical industrial users.

2. Any non-categorical industrial user that:

   - Discharges 25,000 gallons per day or more of process wastewater (process wastewater excludes sanitary, non-contact cooling and blowdown wastewater).

   - Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic (BOD, TSS, etc.) capacity of the treatment plant.

   - Has a reasonable potential, in the opinion of the City or Approval Authority, to adversely affect the treatment plant (inhibition, pass-through of pollutants, sludge contamination, or endangerment of POTW and collection system workers).

B. Small Commercial/Industrial Users are non-domestic dischargers, small businesses such as auto repair, radiator repair, restaurants, dentist, etc. The list is continually updated using the following means:

1. City of Roseville Business License Department and Regional Partners forward business license applications list to the Industrial Waste Division (IW) on a monthly basis.

2. Periodic review of the City of Roseville and Regional Partners phone books.

3.Inspection of new and existing commercial areas is performed.

4. All users identified as "small Commercial/ Industrial" and most users identified as "Non Residential" inspected a minimum of one time per year to assure dry processes remain dry and to ascertain whether new processes have been added.

5. Annual inspection of commercial and industrial areas by IW inspectors for new business operations.

6. Periodic review of legal notices/ DBA's in the local newspaper.

3. COMPLIANCE MONITORING

The City personnel perform compliance monitoring for all SIU's and the small Commercial/Industrial Users. Compliance monitoring is performed as follows:

1. All SIUs are inspected at least 1 per year and sampled one (1) to four (4) times per year as required in their discharge permits. All Commercial/Industrial Users are inspected at least 1 per year and sampled as needed.
2. Samples area transported to laboratory in 4^0C ice chests along with appropriate documentation (date, time, location of sample, sampler, type of sample, i.e. grab or composite, chain of custody form, type of preservation and analyses requested.)
3. Analyses not performed by City personnel are sent out to the analytical labs with proper chain of custody and on ice.
4. Upon completion of analyses, results are entered into the IU's computer file and hard file.
5. The following compliance schedule is followed for sampling all Industrial Users:

    a) 1 week after results are received –
    - In compliance – no further action.
    - Noncompliance – a Warning Notice of Violation (WNOV) is issued

    b) 2 weeks after WOV is issued, the IU is resampled and inspected –

c) 1 week after results are received –
- In compliance – no further action
- Noncompliance – Notice of Violation (NOV) issued and letter of request for proposed compliance time schedule

d) 3 weeks after NOV and compliance schedule, IU is resampled and inspected

e) 1 week after results are received –
- In compliance – no further action
- Noncompliance – Final NOV issued and Mandatory meeting with the City of Roseville Wastewater Utility Manager, Lab/IW Supervisor and City Staff

f) Final Date of Compliance Schedule is issued and IU is resampled and inspected.

g) 1 week after report and sample results are received –
- In compliance – no further action
- Noncompliance–the Environmental Utilities Director issues Notice of Enforcement hearing to the IU, City Attorney, Wastewater Utility Manager and the Lab/IW Supervisor

h) 3 weeks – the following actions will be taken: Civil Action, Criminal Action, Impose Fines, Terminate Service

4. ENFORCEMENT RESPONSE GUIDE

Sampling, Monitoring or Reporting Violations

Noncompliance	Circumstances	Range of Response	City Personnel
Failure to sample, monitor or report (routine reports and BMR's)	Isolated or infrequent	Phone call or Notice of Violation (NOV) requiring report within 10 days.	Lab/IW Supervisor
Failures to sample, monitor, report or notify.	IU does not respond to letters, doesn't follow through on verbal or written agreement or frequent violation	NOV, follow Compliance Monitoring -Section 3	Lab/IW Supervisor, Wastewater Utility Manager
Failure to notify of effluent limit violation or slug discharge.	Isolated or infrequent. No known effects	Phone call, WNOV	Lab/IW Supervisor
Failure to notify of effluent limit violation or slug discharge.	Frequent or continue violation – Significant Non-Compliance (SNC)	NOV. Follow Compliance Monitoring (Section 3)	Lab/IW Supervisor, Wastewater Utility Manager
Failure to notify of effluent limit violation or slug discharge	Known environmental or POTW damage results – (SNC)	NOV, Notice of Enforcement, hearing issued, Civil/Criminal actions, Fined, Terminate Service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Minor sampling, monitoring, reporting deficiencies, (computational or typographical errors).	Isolated or infrequent	Phone call or WNOV. Corrections to made and forward to IW Division	Lab/IW Supervisor
Major or gross sampling, monitoring, or reporting deficiencies, (missing or falsified data)	Isolated or infrequent	NOV. Corrections forwarded to IW Division	Lab/IW Supervisor

Major or gross reporting deficiencies	Continued. Remains uncorrected 30 days or more - SNC	Notice of Enforcement, judicial action	Wastewater Utility Manager, EU Director, City Attorney

Compliance Schedules

Noncompliance	Circumstances	Range of Response	City Personnel
Reporting false information	Any instance – SNC	Request for investigation, jurisdictional action, fines, terminate service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Missed interim date	Will not cause late final date or other Interim dates	NOV	Lab/IW Spervisor
Missed interim date	Will result in other missed interim dates. Violation fro good or valid cause	NOV	Lab/IW Supervisor, Wastewater Utility Manager
Missed final date	90 days or more outstanding. Failure or refusal to comply without good or valid cause	Judicial action, fines	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Missed final date	Less than 30-day delay	NOV	Lab/IW Supervisor
Failure to install monitoring equipment	Less than 30-day delay	NOV	Lab/IW Supervisor
Failure to install monitoring equipment	30 days or more delay	Judicial action to begin monitoring, fines, terminated service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney

Effluent Limits

Noncompliance	Circumstances	Range of Response	City Personnel
Exceeding final limits (categorical, local or prohibited)	Infrequent or isolated minor violations	WNOV, Compliance Monitoring-section 3	Lab/IW Supervisor
Exceeding final limits (categorical, local or prohibited)	Infrequent or isolated significant (no harm)	NOV, Compliance Monitoring-section 3	Lab/IW Supervisor
Exceeding final limits (categorical, local or prohibited)	Frequent resulting in harm to collection system, POTW receiving waters	Notice of enforcement, judicial action, fines, terminate service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Exceeding interim limit (categorical or local)	Without known damages	NOV	Lab/IW Supervisor
Reported slug load	Isolated without known damage	Show cause, WNOV	Lab/IW Supervisor
Reporting slug load	Recurring – SNC	Notice of Enforcement, judicial action, fines, terminate service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Discharge without permit or approval	One time without known environmental impact or POTW damage	Phone call, NOV, send application for non-domestic discharge	Lab/IW Supervisor
Discharge without permit or approval	One time that results in environmental damage or continuing violation. IU unaware of requirement - SNC	Notice of Enforcement, judicial action, fines	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Discharge without permit or approval	Continuing violation with known environmental or POTW damage – SNC	Judicial action, fine, terminate service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Discharge without permit or approval	IU does not submit application with 90 days	Phone call, WNOV	Lab/IW Supervisor

Inspections and Field Investigations

Noncompliance	Circumstances	Range of Response	City Personnel
Entry denial	Entry denied, copies of records denied	NOV, judicial action, fine, terminate service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney, Police
Minor violation of analytical procedures	Any instance	WNOV	Lab/IW Supervisor
Major violation of analytical procedures	No evidence of intent	NOV	Lab/IW Supervisor
Major violation of analytical procedures	Evidence of negligence or intent - SNC	Notice of Enforcement, judicial action, fines, terminate service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Minor violation of permit condition	No evidence of negligence or intent	NOV. Immediate correction	Lab/IW Supervisor
Minor violation of permit condition	Evidence of negligence or intent – SNC	NOV, judicial action, fines, terminate service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Major violation or permit condition	Evidence of negligence or intent – intent	NOV, judicial action, fines, terminate service	Lab/IW Supervisor, Wastewater Utility Manager, EU Director, City Attorney
Failure to report additional monitoring	Inspection finds additional files	NOV	Lab/IW Supervisor

5. LEGAL AUTHORITY

Legal authority for the actions in the ERP is outlined in the City of Roseville Municipal Code Industrial Wastewater section 14.26:

Section 14.26.010 Purpose and policy.

A. This chapter sets forth uniform requirements for direct and indirect contributors into the wastewater collection and treatment system for the city and enables the city to comply with all applicable state and federal laws required by the Clean Water Act of 1977 and the General Pretreatment Regulations (40 CFR, Part 403.)

B. The objectives of this chapter are:

1. To prevent the introduction of pollutants into the municipal wastewater system which will interfere with the operation of the system or contaminate the resulting sludge;
2. To prevent the introduction of pollutants into the municipal wastewater system which will pass through the system, inadequately treated, into receiving waters or the atmosphere or otherwise be incompatible with the system;
3. To improve the opportunity to recycle and reclaim wastewaters and sludges from the system; and
4. To provide for equitable distribution of the cost of the municipal wastewater system.

C. This chapter provides for the regulation of direct and indirect contributors to the municipal wastewater system through the issuance of permits to certain nondomestic users and through enforcement of general requirements for the other users, authorizes monitoring and enforcement activities, requires user reporting, assumes that existing customers' capacity will not be preempted, and provides for the setting of fees for the equitable distribution of costs resulting from the program established in this chapter.

D. This chapter shall apply to persons in the city and to persons outside the city who are users of the city Publicly-Owned Treatment Works.

(Ord. 1718 § 1 (part), 1983.)

Section 14.26.020 Administration.

Except as otherwise provided, the Environmental Utilities Director shall administer, implement and enforce the provisions of this chapter. (Ord. 3798 § 7, 2002: Ord. 1718 § 1 (part), 1983.)

Section 14.26.030 Definitions.

Unless the context specifically indicates otherwise, the following terms and phrases, as used in this chapter, shall have the meanings designated in this section:

1. "Act" or "the act" means the Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, 33 U.S.C. 1251, et seq.
2. "Approval Authority" means the Director of Region 9, United States Environmental Protection Agency.
3. "Authorized Representative of Industrial User" means an authorized representative of an Industrial User, who may be:

a. A principal or officer if the Industrial User is a corporation;
b. A general partner or proprietor if the Industrial User is a partnership or proprietorship respectively;
c. A duly authorized representative of the individuals designated above if such representative is responsible for the overall operation of the facilities from which the indirect discharge originates.

4. "Biochemical Oxygen Demand (BOD)" means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure, five (5) days at twenty (20) degrees centigrade expressed in terms of weight and concentration (milligrams per liter (mg/l)).

5. "Building Drain" means that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer, beginning two (2') feet outside the inner face of the building wall.
6. "Building Sewer" means the extension from the building drain to the public sewer or other place of disposal.
7. "City" means the City of Roseville.
8. "Cleanout" means a small vertical pipe or shaft extending from the surface of the ground to the sewer provided for the purpose of permitting cleaning of the sewer in any direction.
9. "Combined Sewer" means a sewer receiving both surface runoff and sewage.
10. "Cooling Water" means the water discharged from any use such as air conditioning, cooling or refrigeration, or to which the only pollutant added is heat.
11. "Control Authority" means the "Approval Authority", or the California Regional Water Quality Control Board (the "CRWQCB").
12. "Direct Discharge" means the discharge of treated or untreated wastewater directly to the waters of the State of California.
13. "Director" means the Environmental Utilities Director or the Director's authorized representative.
14. "Environmental Protection Agency" or "EPA" means the U.S. Environmental Protection Agency. Where appropriate, the term may also be used as a designation for the Administrator or other duly authorized official of the EPA.
15. "Garbage" means solid wastes from the domestic and commercial preparation, cooking, and dispensing of food, and from the handling, storage and sale of produce.
16. "Grab Sample" means a sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time.
17. "Grit" means the heavy suspended mineral matter present in water or wastewater such as sand, gravel, or cinders.
18. "Health Officer" means the Placer County Health Officer.
19. "Holding Tank Waste" means any waste from bolding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump tank trucks.
20. "Indirect Discharge" means the discharge or the introduction of nondomestic pollutants from any source regulated under Section 307(b) or (c) of the Act (33 U.S.C. 1317), into the POTW (including Holding Tank Waste discharged into the POTW).
21. "Industrial User" means a source of Indirect Discharge which does not constitute a discharge of Pollutants under regulations issued pursuant to Section 402 of the Act, (33 U.S.C. 1342).
22. "Industrial Wastes means the liquid wastes from industrial manufacturing processes, trade, or business.
23. "Interference" means the inhibition or disruption of the POTW treatment processes or operations which contribute to a violation of any requirements of the city's NPDES Permit. The term includes prevention of sewage sludge use or disposal by the POTW in accordance with Section 405 of the Act (33 U.S.C. 1345), or any criteria, guidelines, or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), the Clean Air Act, the Toxic Substances Control Act, or more stringent state criteria (including those contained in any State sludge management plan prepared pursuant to Title IV of SWDA) applicable to the method of disposal or use employed by the POTW.
24. "National Categorical Pretreatment Standard" or "Categorical Pretreatment Standard" means any regulation containing Pollutant discharge limits promulgated by the EPA in accordance with Section 307 (b) and (c) of the Act (33 U.S.C. 1317), which applies to a specific category of Industrial Users.
25. "National Prohibitive Discharge Standard" or "Prohibitive Discharge Standard" means any regulation developed under the authority of Section 307 (b) of the Act or 40 CFR, Section 403.5.
26. "Natural Outlet" means any outlet into a watercourse, pond, ditch, lake or other body of surface or groundwater.
27. "New source" means a facility from which there is, or may be, a discharge of pollutants, construction of which facility began after the publication of the proposed pretreatment standards pursuant to Section 307(c) of the Clean Water Act.
28. "National Pollution Discharge Elimination System Permit" or "NPDES permit" means a permit issued pursuant to Section 402 of the Act (33 U.S.C. 1342).
29. "Pass through" means a discharge which exits the POTW into waters of the United States in quantities which may serve to cause a violation of the POTW's NPDES Permit.
30. "Permit" means a Wastewater Contribution Permit.

31. "Person" means any individual, partnership, copartnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine and the singular shall include the plural where indicated by the context.
32. "pH" means the logarithm (base 10) of the reciprocal of the concentration of hydrogen ions expressed in grams per liter of solution.
33. "Pollution" means the manmade or man induced alteration of the chemical, physical, biological, and radiological integrity of water.
34. "Pollutant" means any dredged spoil, solid waste, incinerator residue, Sewage, Garbage, petroleum products or by products, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt and industrial, municipal, or agricultural waste discharged into water.
35. "Pretreatment" or "Treatment" means the reduction of the amount of Pollutants, the elimination of Pollutants, or the alteration of the nature of Pollutant properties in Wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such Pollutants into the POTW. The reduction or alteration can be obtained by physical, chemical or biological processes, or process changes by other means, except as prohibited by 40 CFR Section 403.6 (d).
36. "Pretreatment Requirements" means any substantive or procedural requirement related to Pretreatment, other than a National Categorical Pretreatment Standard imposed on an Industrial User.
37. "Pretreatment Standard" or "National Pretreatment Standard" means any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act, which applies to any user, including prohibited discharge and local limitations established pursuant to 40 CFR 403.5.
38. "Properly Shredded Garbage" means the wastes from the preparation, cooking, and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (1.27 centimeters) in any dimension.
39. "Publicly-owned Treatment Works (POTW)" means a wastewater treatment plant as defined by Section 212 of the Act (33 U.S.C. 1291), which is owned in this instance by the City. This definition includes any sewers, pipes, ponds, pumps or other devices that connect to, or convey Wastewater to the wastewater treatment plant. POTW also includes any sewers, pipes, ponds, pumps or other devices that convey Wastewaters to the POTW from persons outside the corporate limits of the City who are users of the City's POTW.
40. "Public sewer" means a Sewer which is controlled by public authority.
41. "POTW Treatment Plant" or "Wastewater Treatment Plant" means that portion of the POTW designed to provide treatment to Wastewater.
42. "Rate-of-flow Controller" means an automatic device that controls the rate of flow of a fluid.
43. "Sanitary Sewer" means a sewer which carries Sewage and to which storm, surface and groundwaters are not intentionally admitted.
44. "Sewage" means a combination of the water-carried waste from residences, business buildings, institutions, and industrial establishments, together with such ground, surface, and storm waters as may be present.
45. "Sewage Treatment Plant" means any arrangement of devices and structures used for treating sewage.
46. "Sewage Works" means all facilities for collection, pumping, treating and disposing of sewage.
47. "Sewer" means a pipe or conduit for carrying Sewage.
48. "Shall" is mandatory; "may" is permissive.
49. "Significant Commercial User" means any Commercial User of the POTW, which discharges nondomestic and nonindustrial wastewater containing waste chemicals, solvents, oils, or other Pollutants capable of adversely impacting the sewer system or POTW if left unregulated.
50. "Significant Industrial User" means any Industrial User of the POTW who:
a. Discharges twenty five thousand (25,000) gallons or more of process wastewater per day; or
b. Contributes a process wastewater which makes up five (5%) percent or more of the dry weather average hydraulic or organic capacity of the POTW; or
c. Is subject to a National Categorical Pretreatment Standard; or

d. Is designated as such by the City, the CRWQCB, or the EPA on the basis that it has a reasonable potential, either alone or in combination with other users, to affect the POTW's operation adversely or to violate a pretreatment standard or requirement.

51. "Slug" means any discharge of water, Sewage, or industrial waste which, in concentration of any given constituent or in quantity of flow, exceeds for any period of duration longer than fifteen (15) minutes more than five (5) times the average twenty-four (24) hour concentration or flows during normal operation.

52. "Standard Industrial Classification (SIC)" means a classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget, 1972.

53. "State" means the State of California.

54. "Storm Drain" or "Storm Sewer" means a Sewer which carries storm and surface waters and drainage, but excludes Sewage and industrial wastes, other than unpolluted cooling water.

55. "Stormwater" means any flow occurring during or following any form of natural precipitation and resulting therefrom.

56. "Suspended Solids" means the total suspended matter that floats on the surface of, or is suspended in, water, wastewater or other liquids, and which is removable by laboratory filtering.

57. "Toxic Pollutant" means any Pollutant or combination of Pollutants listed as toxic in regulations promulgated by the EPA or identified in section 307(a) of the Act.

58. "User" means any Person who contributes, causes or permits the contribution of Wastewater into the city's POTW.

59. "Wastewater" means the liquid and water carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, whether treated or untreated, which is contributed into or permitted to enter the POTW.

60. "Watercourse" means a channel or depression in which a flow of water occurs, either continuously or intermittently.

61. "Waters of the State" means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the State of California or any portion thereof.

62. "Wastewater Contribution Permit" means that permit that must be obtained from the City before a Significant Industrial User may connect to or contribute to the POTW.

(Ord. 2707 § 1, 1993: Ord. 2360 § 2, 1990: Ord. 2280 § I, 1989: Ord. 1718 § 1 (part), 1983.)

Section 14.26.040 Abbreviations.

The following abbreviations shall have the designated meanings:

A. "BOD" means biochemical oxygen demand.
B. "CFR" means Code of Federal Regulations.
C. "COD" means chemical oxygen demand.
D. "CWA" means Clean Water act, 33 USC 1251 et seq.
E. "EPA" means Environmental Protection Agency.
F. "l" means liter.
G. "mg" means milligrams.
H. "mg/l" means milligrams per liter.
I. "NPDES" means National Pollutant Discharge Elimination System.
J. "O & M" means Operation and Maintenance.
K. "POTW" means Publicly-Owned Treatment Works.
L. "SIC" means Standard Industrial Classification.
M. "SWDA" means Solid Waste Disposal Act, 42 U.S.C. 6901, et seq.
N. "USC" means United States Code.
O. "SS" means suspended solids.

(Ord. 1718 § 1 (part), 1983.)

Section 14.26.110 General Discharge Prohibitions.

A. It is unlawful for any user to contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which will interfere with the operation of performance of the POTW. These general prohibitions apply to all such users of the POTW, whether or not the user is subject to National Categorical Pretreatment Standards or any other national, state, or local pretreatment standards or requirements.

B. It is unlawful for any user to contribute the following substances to the POTW:

1. Any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the POTW or to the operation of the POTW. At no time shall two successive readings on an explosion hazard meter (or at any point in the system) be more than five (5%) percent nor any single reading over ten (10%) percent of the Lower Explosive Limit (LEL) of the meter. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, sulfides, or any other wastestream with a closed cup flashpoint of less than one hundred and forty (140 °) degrees Fahrenheit or sixty (60 °) degrees Centigrade using the test methods specified in 40 CFR 261.21;
2. Solid or viscous substances which may cause obstruction to the flow in a sewer or other interference with the operation of the POTW such as, but not limited to: grease, garbage, (except properly shredded garbage), animal guts or tissues, paunch manure, bones, hair, hides, fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, gas, tar, asphalt residues, residues from refining, or processing of fuel or lubricating oil, mud, or glass grinding or polishing wastes;
3. Any wastewater having a pH less than 5.0, or wastewater having any other corrosive property cable of causing damage or hazard to structures, equipment and/or personnel of the POTW;
4. Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the POTW, or to exceed the limitation set forth in a Categorical Pretreatment Standard;
5. Any noxious or malodorous liquids, gases, or solids which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair;
6. Any substance which may cause the POTW's effluent or any other product of the POTW such as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or disposal criteria, guidelines or regulations developed under section 405 of the Act, the Clean Air Act, the Toxic Substances Control Act or state criteria applicable to the sludge management method being used;
7. Any substance which will cause the POTW to violate its NPDES permit and/or state disposal system permit or the receiving quality standards;
8. Any wastewater with objectionable color not removed in the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions;
9. Any wastewater having a temperature which will inhibit biological activity in the POTW treatment plant resulting in interference, but in no case wastewater with a temperature at the introduction into the POTW which exceeds forty (40 °) degrees centigrade or one hundred and four (104 °) degrees Fahrenheit;
10. Any pollutants, including, oxygen demanding pollutants (BOD, etc.), released at a flow rate and/or pollutant concentration which will cause interference to the POTW. In no case shall a slug load have a flow rate or contain concentration or qualities of pollutants that exceed for any time period longer than fifteen (15) minutes more than five (5) times the average twenty-four (24) hour concentration, quantities, or flow during normal operation;
11. Any wastewater containing any radioactive wastes or isotopes of such halflife or concentration as may exceed limits established by the director in compliance with applicable state or federal regulations;
12. Any wastewater which causes a hazard to human life or creates a public nuisance;
13. Any other substance with the potential to create a hazardous condition in the POTW.
14. Any trucked or hauled wastes, except at discharge points designated by the Director.

(Ord. 2707 § 2 (part), 1993: Ord. 2280 § 2, 1989: Ord. 1718 § 1 (part), 1983.)

Section 14.26.120 Federal Categorical Pretreatment Standards.

Upon the promulgation of the Federal Categorical Pretreatment Standards for a particular industrial subcategory, the Federal Standard, if more stringent than limitations imposed under this chapter for sources in that subcategory, shall immediately supersede the limitations imposed under this chapter. The National categorical standards found in 40 CFR Chapter 1, Subchapter N, Parts 405-471, are hereby incorporated into this chapter and made part hereof. The director shall notify all affected users of the applicable reporting requirements under 40 CFR, Section 403.12. (Ord. 2707 § 2 (part), 1993: Ord. 2280 § 3, 1989: Ord. 1718 § 1 (part), 1983.)

Section 14.26.130 Modification of Federal Categorical Pretreatment Standards.

Where the city's wastewater treatment system achieves consistent removal of pollutants limited by Federal Pretreatment Standards, the city may apply to the approval authority for modification for specific limits in the Federal Pretreatment Standards. "Consistent removal" shall mean reduction in the amount of a pollutant or alteration of the nature of the pollutant by the wastewater treatment system to a less toxic or harmless state in the effluent which is achieved by the system in ninety-five percent of the samples taken when measured according to the procedures set forth in Section 403.7 (c) (2) of Title 40 of the Code of Federal Regulations, Part 403 "General Pretreatment Regulations for Existing and New Sources of Pollution" promulgates pursuant to the Act. The city may then modify pollutant discharge limits in the Federal Pretreatment Standards of the requirements contained in 40 CFR, Part 403, Section 403.7 are fulfilled and prior approval from the approval authority is obtained. (Ord. 1718 § 1 (part), 1983.)

ection 14.26.140 Specific Pollutant Limitations.

A. Unless otherwise authorized under a wastewater contribution permit, no person or user shall discharge wastewater containing in excess of:

20.0 mg/l Ammonia
0.19 mg/l Arsenic
0.01 mg/l Beryllium
0.025 mg/l Cadmium
0.56 mg/l Chromium
0.25 mg/l Copper
0.13 mg/l Cyanide
32.0 mg/l Fluoride
50.0 mg/l Hydrocarbon solvents (as detected by State Water Resources Control Board (SWRCB) method M8015)
0.06 mg/l Lead
0.002 mg/l Mercury
1.3 mg/l Nickel
100.0 mg/l Oil and grease
500.0 mg/l Phenol
0.04 mg/l Silver
0.006 mg/l Selenium
2.0 mg/l TTO (Total Toxic Organics, defined as sum of all compounds detected by EPA method 624 and 625, excluding phenol)
2.4 mg/l Zinc

B. Where, in the opinion of the Director, and in conformance with the City's RWQCB approved local limits allocation program, users may discharge at levels above those specified in Section 14.26.140A if sufficient excess capacity exists at the POTW, and the discharge is covered under a wastewater contribution permit.
(Ord. 2707 § 2 (part), 1993: Ord. 2360 § 4, 1990: Ord. 2278 § 1, 1989: Ord. 1718 § 1 (part), 1983.)

Section 14.26.150 State requirements.

State requirements and limitation on discharges shall apply in any case where they are more stringent than federal requirements and limitations or those in this chapter. (Ord. 1718 § 1 (part), 1983.)

Section 14.26.160 City's right of revision.

The city reserves the right to amend this chapter in order to establish more stringent limitations or requirements on discharges to the wastewater disposal system if deemed necessary to comply with the objectives of this chapter. (Ord. 1718 § 1 (part), 1983.)

Section 14.26.170 Excessive discharge.

No user shall increase the use of process water or in any way attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in the Federal Categorical Pretreatment Standards, or in any other pollutant-specific limitation developed by the city or state. (Ord. 1718 § 1 (part), 1983.)

Section 14.26.180 Accidental discharges.

A. Each user shall provide protection from acci-dental discharge of prohibited materials or other substances regulated by this chapter. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner or user's own cost and expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the city for review, and shall be approved by the city before construction of the facility. All existing users shall complete such a plan within one year of the effective date of this chapter.

No user who commences contribution to the POTW after July 1, 1983 shall be permit-ted to introduce pollutants into the system until accidental discharge procedures have been ap-proved by the city. Review and approval of such plans and operating procedures shall not relieve the industrial user from the respon-sibility to modify the user's facility as necessary to meet the requirements of this chapter.

B. In the case of an accidental discharge, it is the responsibility of the user to immediately tele-phone and notify the POTW of the incident. The notification shall include location of discharge, type of waste, concentration and volume, and corrective actions.

1. Written Notice. Within five days following an accidental discharge the user shall submit to the director a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage, or other liabil-ity which may be incurred as a result of damage to the POTW, fish kills, or any other damage to person or property nor shall such notification relieve the user of any fines, civil penalties, or other liability which may be imposed by this article or other applicable law.

2. Notice to Employees. A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees whom to call in the event of a dangerous discharge. Employers shall insure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedures.

(Ord. 1718 § 1 (part), 1983.)

Section 14.26.190 Hazardous waste discharge.

Pursuant to 40 CFR 403.12(-), the user shall notify, in writing, the POTW, Cal-EPA, and EPA of any discharge into the POTW of a substance, which, if otherwise disposed of, would be a hazardous waste under 40 CFR 261. (Ord. 2707 § 5, 1993.)

Section 14.26.210 Purpose.

It is the purpose of this article to provide for the recovery of costs from users of the city's waste-water disposal system for the implementation of the program established in this chapter. (Ord. 1718 § 1 (part), 1983.)

Section 14.26.220 Charges and fees.

A. The city may adopt charges and fees by resolution which may include:
1. Fees for reimbursement of costs of setting up and operating the city's pretreatment program;
2. Fees for consistent removal by the city of pollutants otherwise subject to Federal Pretreatment Standards;
3. Other fees as the city may deem necessary to carry out the requirements contained in this chapter.
B. Costs incurred by the city as a result of required on-site sampling and analysis shall be reimbursed to the city by the user.
C. Total program costs, including administrative overhead, shall be recovered by the city via a 20 percent industrial wastewater surcharge on the monthly sewer bill for significant industrial users, and a 10 percent non-domestic waste-water surcharge on the monthly sewer bill for significant commercial users. The surcharge will be applied to a maximum of 15,000 sewer units per user per year, subject to annual evaluation by the Environmental Utilities Director.
(Ord. 2714 § 1, 1993: Ord. 2360 § 5, 1990: Ord. 2134 § 1, 1988: Ord. 1718 § 1 (part), 1983.)

Section 14.26.310 Wastewater dischargers.

It is unlawful for any significant industrial use to discharge any wastewater without a city waste-water contribution permit to any natural outlet within the City, or in any area under the jurisdiction of the City, and/or to the POTW except as authorized by the director in accordance with the provisions of this chapter. The user is required to notify the City prior to any substantial change in the discharge or the introduction of any new pollutant. The City may deny or condition new or increased discharges, or contributions of pollutants, or changes in the nature of pollutants, to the POTW by a user where such contributions do not meet applicable pretreatment standards or requirements or where such contributions would cause the POTW to violate its NPDES permit. (Ord. 2707 § 3 (part), 1993: Ord. 1718 § 1 (part), 1983.)

Section 14.26.320 Wastewater contribution permit in general.

All significant industrial users proposing to connect to or to contribute to the POTW shall obtain a wastewater contribution permit before connecting to or contributing to the POTW. All existing significant users connected to or contributing to the POTW shall obtain a wastewater contribution permit within one hundred eighty days after the effective date of this chapter. (Ord. 1718 § 1 (part), 1983.)

Section 14.26.330 Permit application.

A. Users required to obtain a wastewater contribution permit shall complete and file with the city an application in the form prescribed by the director. In support of the application the user shall submit, in units and terms appropriate for evaluation, the following information:

1. Name, address, and location (if different from the address);
2. SIC number according to the Standard Industrial Classification Manual, Bureau of the Budget, 1972, as amended;
3. Wastewater constituents and characteristics including but not limited to those mentioned in Article II of this chapter, as determined by a reliable analytical laboratory. Sampling and analysis shall be performed in accordance with procedures established by the EPA pursuant to Section 304 (g) of the Act and contained in 40 CFR, Part 136, as amended;
4. Time and duration of contribution;
5. Average daily and three minutes peak wastewater flow rates, including daily, monthly and seasonal variations if any;
6. Site plans, floor plans, mechanical and plumbing plans and details to show all sewers, sewer connections, and appurtenances by the size, location and elevation;
7. Description of activities, facilities and plant processes on the premises including all materials which are or could be discharged;
8. Where known, the nature and concentration of any pollutants in the discharge which are limited by any city, state, or federal pretreatment standards, and a statement regarding whether or not the pretreatment standards are being met on a consistent basis and if not, whether and what additional actions and/or additional pretreatment is required for the user to meet applicable pretreatment standards. New users who have not commenced discharge shall provide estimates of the nature and concentration of pollutants in the discharge;
9. If additional pretreatment or actions will be required to meet the pretreatment standards, the shortest schedule by which the user will provide such additional pretreatment or actions. The completion date in this schedule shall not be later than the compliance date established for the applicable pretreatment standard. The following conditions shall apply to this schedule:

a. The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment or actions required for the user to meet the applicable pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.).

b. No increment referred to in this subsection (A)(9)(a) of this section shall exceed nine months.

c. Not later than fourteen calendar days following each date in the schedule and the final date or compliance, the user shall submit a progress report to the director including, as a minimum, whether or not it complied with the increment progress to be met on such date and, if not, the date on which it expects to comply with this increment of progress, the reason for delay, and the steps being taken by the user to return the construction to the schedule established. In no event shall more than nine months elapse between such progress reports to the director;

10. Each product produced by type, amount, process or processes and rate of production;
11. Type and amount of raw materials processed (average and maximum per day);
12. Number and type of employees, and hours of operation of plant and proposed or actual hours of operation of pretreatment system;
13. Any other information as may be deemed necessary by the city to evaluate the application.

B. The city may evaluate the data furnished by the user and may require additional information. After evaluation and acceptance of the data furnished, the city may issue a wastewater contribution permit subject to terms and conditions provided in this chapter.

C. Wastewater contribution permit applications shall be accompanied by a nonrefundable fee of twenty-five dollars.

D. If a permit application is denied, the applicant may within twenty calendar days of the decision appeal the decision to the city council. An ap-peal shall be accompanied by a nonrefundable fee of seventy-five dollars.

(Ord. 2280 § 4, 1989: Ord. 2134 § 2, 1988: Ord. 1718 § 1 (part), 1983.)

Section 14.26.335 Baseline monitoring.

Within one hundred and eighty days after the effective date of a categorical pretreatment standard, or one hundred and eighty calendar days after the final administrative decision made upon a category determination submission under 40 CFR 403.6(a)(4), whichever is later, existing industrial users subject to such categorical treatment standards and currently discharging to or scheduled to discharge to the POTW shall submit to the city a baseline monitoring report which contains the information listed in paragraphs (b)(1) through (7) of 40 CFR 403.12., and Section 14.26.330(A) of this code. This report shall be signed and certified by an authorized representative of the industrial user, as required by 40 CFR 403.12(1) and 40 CFR 403.6(a)(2)(ii) respectively. (Ord. 2280 § 5, 1989.)

Section 14.26.340 Permit Modifications.

Upon promulgation of a National Categorical Pretreatment Standard, the wastewater contribution permit of users subject to such standards shall be revised as soon as possible to require compliance with such pretreatment standard within the time frame prescribed by such pretreatment standard. Where a user subject to a categorical pretreatment standard has not previously submitted an application for a wastewater contribution permit as required by Section 14.26.320, the user shall apply for a wastewater contribution permit within one hundred eighty (180) calendar days after the promulgation of the applicable National Categorical Pretreatment Standard. In addition, the user with an existing wastewater contribution permit shall submit to the director within one hundred eighty (180) calendar days after the promulgation of an applicable categorical pretreatment standard, the information required by Section 14.26.330(A)(8) and (9). (Ord. 2707 § 3 (part), 1993: Ord. 2280 § 6, 1989: Ord. 1718 § 1 (part), 1983.)

Section 14.26.350 Permit conditions.

Wastewater contribution permits shall be expressly subject to all provisions of this chapter and all other applicable regulations, user charges and fees established by the city. Wastewater contribution permits may contain the following:

A. The unit charge or schedule of user charges and fees for the wastewater to be discharged to the POTW;
B. Limits on the average and maximum wastewater constituents and characteristics;
C. Limits on average and maximum rate and time of discharge or requirements for flow regulations and equalization;
D. Requirements for installation and maintenance of inspection and sampling facilities;
E. Specifications for monitoring programs which may include sampling locations, frequency of sampling, number, types, and standards for tests and reporting schedule;
F. Compliance schedules;
G. Requirements for submission of technical reports or discharge reports pursuant to Section 14.26.380;
H. Requirements for maintaining and retaining records relating to wastewater discharge as specified by the city, and affording city access to such records;
I. Requirements that the city be notified and that the user receive city approval before any new introduction of wastewater constituents or any substantial change in the volume or character of the wastewater constituents are introduced into the POTW;
J. Notification of slug discharges;
K. Other conditions as deemed appropriate by the city to ensure compliance with this chapter.

(Ord. 2280 § 7, 1989: Ord. 1718 § 1 (part), 1983.)

Section 14.26.360 Permits duration.

Permits shall be issued for a specified time period, not to exceed five years. The user shall apply for permit reissuance a minimum of one hundred eighty days prior to the expiration of the user's existing permit. The terms and conditions of the permit may be subject to modification by the city during the term of the permit as limitations or requirements as identified in Article II are modified or other just cause exists. The user shall be informed of any proposed changes in his permit at least thirty days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance. (Ord. 1718 § 1 (part), 1983.)

Section 14.26.370 Permit transfer.

Wastewater contribution permits are issued to a specific user for a specific operation. A wastewater discharge permit shall not be reassigned or transferred or sold to a new owner, new user, different premises, or a new or changed operation without the approval of the city. Any succeeding owner or user shall also comply with the terms and conditions of the existing permit. (Ord. 1718 § 1 (part), 1983.)

Section 14.26.380 Reporting Requirements for Permittee.

Within ninety (90) calendar days following the date for final compliance with applicable pretreatment standards or, in the case of new source, following commencement of the introduction of wastewater into the POTW, any user subject to pretreatment standards shall submit to the director a report indicating the nature and concentration of all pollutants in the discharge from the regulated process which are limited by such pretreatment standards or requirements. The report shall state whether the applicable pretreatment standards are being met on a consistent basis and, if not, what additional pretreatment or action is necessary to bring the user into compliance with the applicable pretreatment standards. This report shall be signed and certified by an authorized representative of the industrial user, as required by 40 CFR 403.12(1) and 40 CFR 403.6(a)(2)(ii) respectively. If sampling performed by a user indicates a violation, the user shall notify the POTW within twenty-four (24) hours of becoming aware of the violation. The user shall repeat the sampling and analysis and submit the results of the repeat analysis to the POTW within thirty (30) days after becoming aware of the violation. (Ord. 2707 § 3 (part), 1993: Ord. 2280 § 8, 1989: Ord. 1718 § 1 (part), 1983.)

Section 14.26.390 Periodic compliance reports.

A. Any user subject to a pretreatment standard, after compliance date of such pretreatment standard, or in the case of a new source, after commencement of the discharge into the POTW, shall submit to the director during the months of June and December, unless required more frequently in the pretreatment standard or by the director, a report indicating the nature and concentration of pollutants in the effluent which are limited by such pretreatment standards. In addition, this report shall include a record of all daily flows which during the reporting period exceeded the average daily flow reported in Section 14.26.350(B).

At the discretion of the director and in consideration of such factors as local high or low flow rates, holidays, budget cycles, etc., the director may agree to alter the months during which the above reports are to be submitted.

B. The director may impose mass limitations on users which are using dilution to meet applicable pretreatments standards, or in other cases where the imposition of mass limitations are appropriate. In such cases, the report required by subsection (A) of this section shall indicate the mass of pollutants regulated by pretreatment standards in the effluent of the user. These reports shall contain the results of sampling and analysis of the discharge, including the flow and the nature and concentration, or production and mass where requested by the director, of pollutants contained therein which are limited by the applicable pretreatment standard. The frequency of monitoring shall not be less than prescribed in the pretreatment standard. All periodic compliance reports shall be signed and certified by an authorized representative of the industrial user, as required by 40 CFR 403.12(1) and 40 CFR 403.6(a)(2)(ii) respectively.

(Ord. 2280 § 9, 1989: Ord. 1718 § 1 (part), 1983.)

Section 14.26.410 Harmful Contributions.

A. The City may suspend the wastewater treatment service or revoke a wastewater contribution permit when such suspension or revocation is necessary, in the opinion of the director, in order to stop an actual or threatened discharge which presents or may present an imminent or substantial endangerment to the health or welfare of persons, to the environment, causes interference to the POTW or causes the city to violate any condition of its NPDES permit.

B. Any person notified of a suspension of the wastewater treatment service and/or revocation of a wastewater contribution permit shall immediately stop or eliminate the contribution. In the event of a failure of the person to comply voluntarily with the suspension order, the director shall take such steps as deemed necessary including immediate severance of the sewer connection, to prevent or minimize damage to the POTW system or endangerment to any individuals. The director shall reinstate the wastewater contribution permit and/or the wastewater treatment service only upon proof of the elimination of the nonconforming discharge. A detailed written statement submitted by the user describing the causes of the harmful contribution and the measures taken to prevent any future occurrence shall be submitted to the director within fifteen (15) days of the date of occurrence.

(Ord. 2707 § 4, 1993: Ord. 1718 § 1 (part), 1983.)

Section 14.26.420 Revocation of permit.

Any user who violates the following conditions of this chapter or applicable state and federal regulations is subject to having his permit revoked:

A. Failure of a user to factually and accurately report the wastewater constituents and characteristics of his discharge;

B. Failure of the user to report significant changes in operations, or wastewater constituents and characteristics;

C. Refusal of reasonable access to the user's premises for the purpose of inspection or monitoring; or

D. Violation of conditions of the permit.

(Ord. 1718 § 1 (part), 1983.)

Section 14.26.430 Violation--Penalty.

A. Any violation of this chapter, or the orders, rules, regulations and permits issued under this chapter, is unlawful and shall be an infraction or misdemeanor as determined by the city attorney.

B. Any user in violation of this chapter, or the orders, rules, regulations and permits issued under this chapter, may be ordered by the director to cease and desist operations until the violation is cured. Continuance of operations after notice to cease and desist has been furnished to user shall be unlawful and an infraction or misdemeanor as determined by the city attorney. Each day in which any such violation shall continue shall be deemed a separate offense.

C. The violation of any of the provisions of this chapter, or the orders, rules, regulations and permits issued under this chapter, or the doing of any act prohibited or the failure or omission to do any act required by this chapter, or the orders, rules, and regulations and permits issued under this chapter, is a public nuisance and may be enjoined by the city attorney.

D. If any violation of this chapter, or the orders, rules, regulations and permits issued under this chapter, causes damage to the POTW, the director may seek to recover civil damages from the user causing such damage.

E. The director is authorized to levy against any person administrative fines of up to ten thousand dollars per day for each violation of the rules, regulations, and permits issued under this chapter. The notice shall provide information as to the reason for the administrative fine and the authority. And the notice shall also specify the person's right to appeal.

1. The director shall provide written notice of such levy to the person by certified mail, user has the right to appeal the administrative action to the Roseville Public Utilities Commission by filing an appeal with the city clerk.
2. The appeal shall be submitted within twenty days of receipt of the notice and shall be accompanied by a nonrefundable fee of seventy-five dollars.
3. The user has the right to appeal the decision of the Roseville Public Utilities Commission to the city council. The appeal shall be submitted to the city clerk within twenty days of the decision of the Roseville Public Utilities Commission and shall be accompanied by a nonrefundable fee of seventy-five dollars.
F. The remedies and provisions of this section are cumulative, and are in addition to any other remedy or provision of law.
(Ord. 2280 § 13, 1989: Ord. 2134 § 3, 1988: Ord. 1718 § 1 (part), 1983.)

Section 14.26.440 Falsifying information.

Any person who knowingly makes any false statements, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to this chapter or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this chapter, shall, upon conviction, be guilty of a misdemeanor. (Ord. 1718 § 1 (part), 1983.)

CITY OF ROSEVILLE
WATER/WASTEWATER LABORATORY

PROGRAM: _____ DATE RECEIVED: _____

REMARKS: _____ DATE SAMPLED: _____

SAMPLED BY: _____ TIME: _____ ANALYST: _____ TIME: _____

LAB NUMBER

SAMPLE						
pH						
cruc - vol.						
dry wt.						
tare wt.						
diff.						
TOTAL SUSPENDED SOLIDS mg/l						
Dilution						
abs.						
Factor						
mg/l						
flsk# - vol.						
dry wt.						
tare wt.						
diff.						
OIL & GREASE mg/l						
Dilution						
abs.						
Factor						
mg/l						

Sample vol.	12	6	3	12	6	3	12	6	3										
w/o X	25	50	100	25	50	100	25	50	100										
w/ DO_i																			
w/ DO_{i-s}																			
DO_s																			
factor _____ Diff																			
result																			
BOD mg/l																			

Relinquished by: _____ Received by: _____

Date: _____ Time: _____ Date: _____ Time: _____

Caltest ANALYTICAL LABORATORY

1885 N. KELLY ROAD • NAPA, CA 94558 • (707) 258-4000 • Fax (707) 226-1001 • www.caltestlab.com

SAMPLE CHAIN OF CUSTODY

PAGE _____ OF _____

LAB # _____

PROJECT #/ PROJECT NAME

P.O. #

CLIENT:

REPORT TO:

ADDRESS: CITY: STATE: ZIP:

BILLING ADDRESS:

PHONE #: FAX PHONE: SAMPLER (PRINT & SIGN NAME):

ANALYSES REQUESTED

TURN-AROUND TIME
☐ STANDARD
☐ RUSH
DUE DATE: _____

CALTEST #	DATE SAMPLED	TIME SAMPLED	MATRIX	CONTAINER AMOUNT/TYPE	PRESERVATIVE	SAMPLE IDENTIFICATION SITE	CLIENT LAB #	COMP. or GRAB	REMARKS

By submittal of sample(s), client agrees to abide by the Terms and Conditions set forth on the reverse of this document.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	RECEIVED BY

FOR LAB USE ONLY

Samples: WC_____ MICRO_____ BIO_____ AA_____ SV_____ VOA_____ TEMP:_____ SEALED: Y___ / N___ INTACT: Y___ / N___

BD: BIO_____ WC_____ AA_____

CC: AA_____ SV_____ VOA_____

SIL: HP_____ PT_____ QT_____ VOA_____

W/HNO_3_____ H_2SO_4_____ NaOH_____

PIL: HNO_3_____ H_2SO_4_____ NaOH_____ HCL_____

COMMENTS

MATRIX: AQ = Aqueous Nondrinking Water, Digested Metals; FE = Low R.L.s, Aqueous Nondrinking Water, Digested Metals; DW = Drinking Water; SL = Soil, Sludge, Solid; FP = Free Product

CONTAINER TYPES: AL = Amber Liter; AHL = 500 ml Amber; PT = Pint (Plastic); QT=Quart (Plastic); HG = Half Gallon (Plastic); SJ = Soil Jar; B4 = 4 oz. BACT; BT = Brass Tube; VOA = 40 mL.VOA; OTC = Other Type Container

R_____ PR_____ M_____ F_____

WHITE - LABORATORY YELLOW - CLIENT COPY TO ACCOMPANY FINAL REPORT PINK - CLIENT COPY AS RECEIPT REV-11/93

CITY OF ROSEVILLE
TRADITION • PRIDE • PROGRESS

APPLICATION FOR NON-DOMESTIC WASTEWATER DISCHARGE

Environmental Utilities
Laboratory / Industrial Waste
1800 Booth Road
Roseville, California 95747-9708

SECTION A – GENERAL INFORMATION

1. Company: Name _____
   Address _____
   _____
   Telephone _____

2. Facility: Name _____
   Address _____
   _____
   Telephone _____

3. Person authorized to represent this firm in official dealings with the City of Roseville:
   Name _____
   Title _____
   Telephone _____

4. Alternative contact person:
   Name _____
   Title _____
   Telephone _____

5. Identify the type of business (auto repair, machine shop, painting, printing, etc.):
   _____

Note to signing official: In accordance with Title 40 of the Code of Federal Regulations Part 403 Section 403.14, information and data provided in this questionnaire which identifies the nature and frequency of discharge shall be available to the public without restriction. Requests for confidential treatment of other information shall be governed by procedures specified in 40 CFR Part 2. The information in this questionnaire will be used to issue the permit.

This is to be signed by an authorized official of your firm after adequate completion of this form and review of the information by the signing official.

I have personally examined and am familiar with the information submitted in this document and attachments. Based upon my inquiry of those individuals immediately responsible for obtaining the information reported herein, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment.

_____ _____
Signature of Official/ Title Date

SECTION A -- GENERAL INFORMATION

6. Describe the manufacturing, production, or service activities your firm conducts:

_____

_____

_____

_____

7. Standard Industrial Classification Number (s) (SIC) for your facility:

_____ _____ _____ _____ _____

8. This facility generates the following types of wastes (check all that apply):

	Average gallons/day		
☐ Domestic wastes (restrooms, etc.)	_____	☐ estimate	☐ measured
☐ Cooling water, non-contact	_____	☐ estimate	☐ measured
☐ Cooling water, contact	_____	☐ estimate	☐ measured
☐ Boiler/Tower blow down	_____	☐ estimate	☐ measured
☐ Process	_____	☐ estimate	☐ measured
☐ Equipment/ Facility Wash down	_____	☐ estimate	☐ measured
☐ Air Pollution Control Unit	_____	☐ estimate	☐ measured
☐ Stormwater runoff to sewer	_____	☐ estimate	☐ measured
☐ Other (specify) _____	_____	☐ estimate	☐ measured
Total	_____		

9. Wastes are discharged to (check all that apply):

	Average gallons/day		
☐ Sanitary sewer	_____	☐ estimate	☐ measured
☐ Storm sewer	_____	☐ estimate	☐ measured
☐ Surface water	_____	☐ estimate	☐ measured
☐ Ground waters	_____	☐ estimate	☐ measured
☐ Waste haulers	_____	☐ estimate	☐ measured
☐ Evaporation	_____	☐ estimate	☐ measured
☐ Other (specify) _____	_____	☐ estimate	☐ measured

Provide name and address of waste hauler (s):

_____

_____

10. Is a Spill Prevention Control and Countermeasure Plan prepared for facility?

☐ Yes ☐ No

SECTION B – FACILITY OPERATION CHARACTERISTICS

1. Number of employee shifts worked per 24-hour day _____
   Average number of employees per shift _____
   Starting times of shift (s) 1st _____ am/pm 2nd _____ am/pm 3rd _____ am/pm

SECTION B – FACILITY OPERATION CHARACTERISTICS

Note: The following information in this section must be completed for each product line.

2. Principal product produced: _____
3. Raw materials and process additives used:
   _____
   _____

4. Production process is: ☐Batch ☐Continuous ☐Both: _____% Batch ____% Continuous
   Average number of batches per 24-hour day: _____

5. Hours of Operation: _____am to _____pm ☐continuous

6. Is production subject to seasonal variation? ☐yes ☐no
   If yes, briefly describe the seasonal production cycle: _____
   _____

7. Are any process changes or expansions planned during the next three years? ☐yes ☐no
   If yes, attach a separate sheet to this form describing the nature of the planned changes and or expansion.

SECTION C – WASTEWATER INFORMATION

1. If your facility employs processes in any of the 34 industrial categories or business activities listed below and any of these processes generate wastewater or waste sludge, place a check mark beside the category or business activity (check all that apply):
   a. 34 Industrial Categories:

1. ☐Adhesives	18. ☐Ore Mining
2. ☐Aluminum Forming	19. ☐Organic Chemicals
3. ☐Auto/Other Laundries	20. ☐Paint & Ink
4. ☐Battery Manufacturing	21. ☐Pesticides
5. ☐Coal Mining	22. ☐Petroleum Refining
6. ☐Coil Coating	23. ☐Pharmaceuticals
7. ☐Copper Forming	24. ☐Photographic Supplies
8. ☐Electric/Electronic Components	25. ☐Plastic/Synthetic Materials
9. ☐Electroplating	26. ☐Plastics Processing
10. ☐Explosives Manufacturing	27. ☐Porcelain Enamel
11. ☐Foundries	28. ☐Printing & Publishing
12. ☐Gum & Wood Chemicals	29. ☐Pump & Paper
13. ☐Inorganic Chemicals	30. ☐Rubber
14. ☐Iron & Steel	31. ☐Soaps & Detergents
15. ☐Leather Tanning & Finishing	32. ☐Steam Electric
16. ☐Mechanical Products	33. ☐Textile Mills
17. ☐Nonferrous Metals	34. ☐Timber

   b. Other Business Activity
   ☐Dairy Products
   ☐Slaughter/Meat Packing/ Rendering
   ☐Food/Edible Products Processor
   ☐Beverage Bottler

SECTION C – WASTEWATER INFORMATION

2. Pretreatment devices or processes used for treating wastewater or sludge (check all that apply):

☐ Air Flotation	☐ Neutralization, pH correction
☐ Centrifuge	☐ Ozonation
☐ Chemical Precipitation	☐ Reverse Osmosis
☐ Chlorination	☐ Screen
☐ Cyclone	☐ Sedimentation
☐ Filtration	☐ Septic Tank
☐ Flow Equalization	☐ Solvent Separation
☐ Grease Interceptor	☐ Spill Protection
☐ Ion Exchange	☐ Sump

☐ Grease or oil separation, type _____
☐ Biological Treatment, type _____
☐ Rainwater diversion or storage _____
☐ Other chemical treatment, type _____
☐ Other physical treatment, type _____
☐ Other, type _____
☐ No pretreatment provided

3. If any wastewater analyses have been performed on the wastewater discharge (s) from your facilities, attach a copy of the most recent data to this questionnaire. Be sure to include the data of the analysis, name of laboratory performing the analysis, and location(s) from which sample(s) were taken. (Attach sketches, plans, etc. as necessary).

SECTION D – OTHER WASTES

1. Are any liquid wastes or sludges from this firm disposed of by means other than discharge to the sewer system?
☐ Yes ☐ No

If "no" skip remainder of Section D.
If "yes", complete items 2 and 3.

2. These wastes may best be described as:

	Estimated gallons or pounds per year
☐ Acids and Alkalies	_____
☐ Heavy Metal Sludges	_____
☐ Inks/Dyes	_____
☐ Oil and/or Grease	_____
☐ Organic Compounds	_____
☐ Paints	_____
☐ Pesticides	_____
☐ Plating Wastes	_____
☐ Pretreatment Sludges	_____
☐ Solvents/Thinners	_____
☐ Other Hazardous Wastes (specify) _____	_____
☐ Other Wastes (specify) _____	_____

SECTION D – OTHER WASTES

3. For the above checked wastes, does your company practice:
   - ☐ on-site storage
   - ☐ off-site storage
   - ☐ on-site disposal
   - ☐ off-site disposal

   Briefly describe the methods of storage or disposal utilized:

   _____
   _____
   _____
   _____
   _____

If you have any questions concerning this application, please contact the City of Roseville Industrial Waste Division at 774-5676.

PRIORITY POLLUTANT INFORMANTION

Mark all the chemicals that are "known or suspected to be present" or "known or suspected to be absent" in your manufacturing or service activity, or generated as a by-product:

Chemical Compound	Known Present	Suspect Present	Known Absent	Suspect Absent	Known/Suspected Concentration/day
I. METAL AND INORGANICS					
1. Antimony					
2. Arsenic					
3. Asbestos					
4. Beryllium					
5. Cadmium					
6. Chromium					
7. Copper					
8. Cyanide					
9. Lead					
10. Mercury					
11. Nickel					
12. Selenium					
13. Silver					
14. Thallium					
15. Zinc					
PHENOLS & CRESOLS					
16. Phenol (s)					
17. Phenol, 2-chloro					
18. Phenol, 2,4-dichloro					
19. Phenol, 2,4,6-trichloro					
20. Phenol, pentachloro					
21. Phenol, 2-nitro					
22. Phenol, 4-nitro					
23. Phenol, 2,4-dinitro					
24. Phenol, 2,4-dimethyl					
25. m-Cresol, p-chloro					
26. O-Cresol, 4,6-dinitro					
III. MONOCYCLIC AROMATICS (EXCLUDING PHENOLS, CRESOL, PHTHALATES)					
27. Benzene					
28. Benzene, chloro					
29. Benzene, 1,2-dichloro					
30. Benzene, 1,3-dichloro					
31. Benzene, 1,4-dichloro					

Chemical Compound	Known Present	Suspect Present	Known Absent	Suspect Absent	Known/Suspected Concentration/day
32. Benzene, 1,2,4-trichlor					
33. Benzene, hexachloro					
34. Benzene, ethyl					
35. Benzene, nitro					
36. Toluene					
37. Toluene, 2,4-dinitro					
38. Toluene, 2,6-dinitro					
IV. PCB's & RELATED COMPOUNDS					
39. PCB - 1016					
40. PCB - 1221					
41. PCB - 1232					
42. PCB - 1242					
43. PCB - 1248					
44. PCB - 1254					
45. PCB - 1260					
46. 2 - Chloronaphthalene					
V. ETHERS					
47. Ether, bis(chloromethyl)					
48. Ether, bis(2-chloroethyl)					
49. Ether, bis(2-chloroisopropyl)					
50. Ehter, 2-chloroethyl vinyl					
51. Ether, 4-bromophenyl phenyl					
52. Ether, 4-chlorophenyl phenyl					
53. Bis (2-chlorethoxy) methane					
VI. NITROSAMINES & OTHER NITROGEN-CONTAINING COMPOUNDS					
54. Nitrosamine, dimethyl					
55. Nitrosamine, diphenyl					
56. Nitrosamine, di-n-propyl					
57. Benzidine					
58. Benzidine, 3,3'-dichloro					
59. Hydrazine, 1,2-diphenyl					
60. Acrylonitrile					

CITY OF ROSEVILLE
TRADITION · PRIDE · PROGRESS

Environmental Utilities
Laboratory / Industrial Waste
1800 Booth Road
Roseville, California 95747-9708

INDUSTRIAL WASTE PROGRAM -- SIGNIFICANT INDUSTRIAL USER INSPECTION REPORT

1) Inspector(s)/Date/Time: _____

Inspector(s) _____ Signature(s): _____

2) Company Name: _____

3) Address: _____

4) Contact Person: _____
Title/Phone: _____

5) City Permit No. _____ IW Flow _____
Category _____

6) Inspection/Type/Purpose: Unannounced _____ Scheduled _____
New Company _____ Complaint _____ Spill _____
Violation _____ Other _____

Purpose of Inspection:
_____
_____
_____

7) Last City Actions (Type/Date): Inspection: _____
Sample: _____
Violation: _____
Enforcement: _____

8) Nature of Operation: _____
_____

Number of Employees: _____

9) Wastestreams to POTW:

_____
_____
_____

10) Pretreatment System: Flow-Through _____ Batch
Condition/Operation = Good_____ Fair _____ Poor

Description of pretreatment system:

_____
_____
_____
_____
_____

Inspection notes/comments/observations:

_____
_____
_____

11) Process Areas Inspected:

_____
_____
_____
_____

Condition/Operation = Good _____ Fair _____ Poor
General Housekeeping = Good _____ Fair _____ Poor

Inspection notes/comments/observations:

_____
_____
_____
_____
_____

12) Wastestreams to Surface/Groundwater: _____

13) Chemical/Waste Storage Areas:

_____
_____
_____
_____

Condition = Good _____ Fair _____ Poor

Inspection notes/comments/observations:

14) Hazardous Waste Drums/Labels/Manifests:

All drums/containers clearly labeled? : Yes _____ No _____

Do manifests indicate balance between chemicals in/waste out?
Yes _____ No _____ If not, why not?: Evaporation
Incomplete records ____ Possible prohibited discharge?

Inspection notes/comments/observations:

15) Description of samples collected:

Sampling notes/comments/observations (sample appearance):

****

INSPECTION RESULTS (complete after lab results are in):

Complied with City Permit? Yes _____ No _____ N/A
Comments:

Recommended Action By: City _____ RWQCB _____ EPA
Priority: ASAP _____ High _____ Medium _____ Low

Comments:

_____
_____
_____
_____
_____

CITY OF ROSEVILLE
TRADITION · PRIDE · PROGRESS

Environmental Utilities
Laboratory / Industrial Waste
1800 Booth Road
Roseville, California 95747-9708

Permit Number: _____

CITY OF ROSEVILLE
WASTEWATER DISCHARGE PERMIT

Company Name: _____

Division Name (If Applicable): _____

Mailing Address: _____
Street or P.O. Box

_____
City, State and Zip Code

Facility Address: _____
Street Address

_____
City, State and Zip Code

The above Industrial User is authorized to discharge industrial wastewater to the City of Roseville's sewer system in compliance with the City of Roseville Municipal Code Chapter 14.26, any applicable provisions of Federal or State law or regulation, and in accordance with discharge point(s), effluent limitations, monitoring requirements, and other conditions set forth herein.

This permit is granted in accordance with the application filed on,_____,_ with the City of Roseville Utility Engineering Division, and in conformity with plans, specifications, and other data submitted to the City in support of the above application.

Effective Date: _____

Expiration Date: _____

_____
City of Roseville Representative

WASTEWATER PERMIT FOR NON-DOMESTIC DISCHARGE

PART I - Wastewater Discharge Limitations and Monitoring Requirements

1. The Industrial User under this permit is subject to the discharge requirements stated in the City of Roseville Municipal Code Chapter 14.26 regarding industrial wastewater and Federal Categorical Standards Section(s) _____.

a. Flow Rate _____

b. Authorized Discharge. All other waste streams are unauthorized and strictly prohibited:

c. Local limits: (see Attachment C for applicable limits).

d. Categorical Limits. See Attachment A, if applicable.

e. Compliance Schedule. See Attachment B, if applicable.

f. Effluent Monitoring Program. See Attachment C.

WASTEWATER PERMIT FOR NON-DOMESTIC DISCHARGE

PART II - Reporting Requirements

1. The Industrial User shall notify the City immediately upon any accidental or slug discharge to the sanitary sewer as outlined in the City of Roseville Municipal Code Chapter 14.26. Formal written notification discussing circumstances and mitigation shall be submitted to the City within five (5) days of the occurrence.

2. The Industrial User shall notify the City prior to the introduction of new wastewater or pollutants or any substantial change in the volume or characteristics of the wastewater being introduced into the POTW from the User's industrial processes. Formal written notification shall follow within thirty(30)days of such introduction.

3. Any upset experienced by the Industrial User of its treatment that places it in a temporary state of noncompliance with wastewater discharge limitations contained in this permit or other limitations specified in the City's Ordinance shall be reported to the City within twenty-four (24) hours of first awareness of the commencement of the upset. A detailed report shall be filed within five (5) days.

4. The Industrial User is required to submit to the City _____ reports per year____ on results of its sampling of pollutants specified in Part I of this permit. This report shall also contain the required flow measurement data. Pursuant to 1989 amendments to the federal pretreatment regulations, the City has the option of conducting required self-monitoring for the industrial user. See Effluent Monitoring Program Attachment.

5. If the Industrial User has submitted an approved Compliance Time Schedule with the City, the Industrial User shall submit a progress report to the City no later than fourteen (14) days following each date in the compliance schedule. This report must indicate whether or not the increment of progress was met on the date, the reason(s) for any delay, and what steps are being taken by the User to return to the schedule established. In no event shall more than twelve (12) months elapse between such progress reports to the City.

6. Within ninety(90)days following the final compliance date specified in Section I of this permit, the Industrial User shall submit a final compliance report. The Industrial User will be required to sample its wastewater for the pollutants specified in Section I, and report compliance. Any reasons for not complying and any steps being taken by the User to comply shall be part of the report.

7. An Annual Report will be submitted to the City, on the second Monday in January. This report will summarize violations, problems, treatment changes, and any other pertinent information from the previous calendar year.

8. Attached to this permit is a map showing the 1 locations from which samples will be taken. Protocol for these samples are stated in Section III.5.

9. All reports shall be submitted to the following address:

City of Roseville
Attn: Industrial Waste Division
1800 Booth Rd.
Roseville, CA 95747

PART III - Standard Conditions

1. The Industrial User shall comply with all the general prohibitive discharge standards in City of Roseville Municipal Code Chapter 14.26.

2. **RIGHT OF ENTRY**

The Industrial User shall, with or without prior notification by the City, allow the City or its representative to enter upon the premises of the User, at all reasonable hours, for the purposes of inspection, sampling, or records inspection. Reasonable hours in the context of inspection and sampling includes any time the Industrial User is operating any process which results in a process wastewater discharge to the City's sewage system.

3. **RECORDS RETENTION**

The Industrial User shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analyses made by or in behalf of the User in connection with its discharge.

All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the City shall be retained and preserved by the Industrial User until all enforcement activities have concluded, and all periods of limitation with respect to any and all appeals have expired.

4. **CONFIDENTIAL INFORMATION**

Except for data determined to be confidential under City of Roseville Municipal Code Section 14.26.390.4, all reports required by this permit shall be available for public inspection.

5. **RECORDING OF RESULTS (Chain of Custody)**

For each measurement of sample taken pursuant to the requirements of this permit, the User shall record the following information:

a) The exact place, date, and time of sampling;

b) The dates the analyses were performed;

c) The person(s) who performed the analyses;

d) The analytical techniques or methods used; and

e) The results of all required analyses.

6. **DILUTION**

No Industrial User shall increase the use of potable or process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

7. **PROPER DISPOSAL OR PRETREATMENT SLUDGE AND SPENT CHEMICALS**

The disposal of sludge and spent chemicals generated shall be done in accordance with Section 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act. Industrial User shall maintain records and manifests of all disposals for a period of three (3) years.

8. **SIGNATORY REQUIREMENTS**

All reports required by this permit shall be signed by a principal executive officer of the User, or his designee.

9. **REVOCATION OF PERMIT**

The permit issued to the Industrial User by the City may be revoked when, after inspection, monitoring or analysis it is determined that the discharge of wastewater to the sanitary sewer is in violation of Federal, State, or local laws, ordinances, or regulations. Additionally, falsification or intentional misrepresentation of data or statements pertaining to the permit application or any other required reporting form, shall be cause for permit revocation.

10. **LIMITATION ON PERMIT TRANSFER**

Wastewater discharge permits are issued to a specific User or a specific operation and are not assignable to another User nor are they transferable to any other location without prior approval from the City. If the Industrial Discharger changes ownership, the new owner must apply for a new discharge permit.

11. **FALSIFYING INFORMATION OR TAMPERING WITH MONITORING EQUIPMENT**

Knowingly making any false statement on any report or other document required by this permit or knowingly rendering any monitoring device or method inaccurate may result in punishment under criminal laws of the City, as well as being subjected to civil penalties and relief.

12. **MODIFICATION OR REVISION OF THE PERMIT**

a) The terms and conditions of this permit are subject to modification by the City at any time as limitations or requirements are identified by City Staff or pursuant to City of Roseville Municipal Code Section 14.26.340.

b) This permit may also be modified to incorporate special conditions resulting from the issuance of a special order.

c) The terms and conditions may be modified as a result of EPA promulgating new federal pretreatment standards.

d) Any permit modification which result in new conditions in the permit shall include a reasonable time schedule for compliance, if necessary.

13. **DUTY TO REAPPLY**

The City shall notify a User one hundred and eighty (180) days prior to the expiration of the User's Permit. Within ninety(90)days of the notification, the User shall reapply for re-issuance of the permit on a form provided by the City.

14. **SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

15. **PROPERTY RIGHTS**

The issuance of this permit does not convey any of its property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of Federal, State or Local regulations.

16. **OPERATION AND MAINTENANCE**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of this permit. Proper operation and maintenance includes, but is not limited to, effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls. This provision requires the operation of back-up or auxiliary facilities only when necessary to achieve compliance with the conditions of the permit.

17. **PENALTY PROVISION**

Any violation of this permit or City of Roseville Municipal Code Chapter 14.26, may subject the permittee to revocation of this permit, civil penalties of not less than $500 per day per violation, and/or administrative penalties not to exceed $10,000 per day of violation. In addition, since both EPA and RWQCB have the authority to enforce any portion of the City's pretreatment program, any violation may subject the permittee to Federal or State civil penalties not to exceed $25,000 per day of violation or administrative penalties not to exceed $10,000 per day per violation up to $125,000 per day.

18. **BYPASS PROHIBITION**

Bypass of any portion of the pretreatment plant is prohibited, and the City may take enforcement action for bypass, unless: (1) the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, (2) there were no feasible alternatives to the bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime, or (3) upon notice submitted by the permittee.

19. **BACK CHARGE FOR EXPENSES**

Any expenses relating to the Industrial User incurred by the City for operating the Industrial Pretreatment Program will be back charged to the User.

20. **SPCC SUBMITTAL**

As required by City of Roseville Municipal Code Section 14.26.180, the Industrial User is required to provide adequate spill prevention for any above-ground hazardous waste or oil tanks. A minimum being a berm surrounding the area which will hold the entire volume of the tank(s).

ATTACHMENT A

CATEGORICAL LIMITS

ATTACHMENT B

COMPLIANCE SCHEDULE

ATTACHMENT C

EFFLUENT MONITORING PROGRAM

The sampling frequencies listed below refer to the frequency of monitoring to be performed by the City. Effluent samples to be analyzed for pollutants specified in the local limits section shall be collected downstream from the last connection through which wastes can be admitted to the City's collection system. Samples to be analyzed for pollutants specified in the Categorical limits section shall also be collected at this point if the Combined Wastestream Formula has been applied. If the Combined Wastestream Formula has not been applied, these samples shall be taken from the undiluted effluent of the regulated process.

Time of collection of grab samples shall be recorded. Composite samples shall be flow-proportional and shall be collected over at least an 8hour period.

If the discharge is intermittent rather than continuous, samples shall be taken during the discharge. The following shall constitute the effluent monitoring program:

TO MAINTAIN COMPLIANCE WITH LOCAL STANDARDS:

Constituents	Limit	Sample Type	Frequency
Ammonia	20.0 mg/l	composite	
Arsenic	0.19 mg/l	"	
Beryllium	0.01 mg/l	"	
Cadmium	0.025 mg/l	"	
Chromium, total	0.56 mg/l	composite	
Chemical Oxygen Demand	600.0 mg/l	"	
Copper	0.25 mg/l	composite	
Cyanide, total	0.13 mg/l	grab	
Fluoride	32.0 mg/l	composite	
Lead	0.06 mg/l	"	
Mercury	0.02 mg/l	"	
Nickel	1.3 mg/l	"	
Oil and Grease	100.0 mg/l	grab	
Silver	0.04 mg/l	composite	
Suspended Solids	200.0 mg/l	"	
TTO (note 1)	2.0 mg/l	624/625	
Zinc	2.4 mg/l	"	
pH within the range of 5.5 to 12.5		grab	

EFFLUENT MONITORING PROGRAM

NOTE 1 -- Total Toxic Organics (TTO) which is the summation of all quantifiable values greater than 0.01 milligrams per liter (0.01mg/l) for the following constituents:

Acenaphthene
Acrolein
Acrylonitrile
Benzene
Benzidine
Carbon tetrachloride
Chlorobenzene
1,2,4-trichlorobenzene
Hexachlorobenzene
1,2-dichloroethane
1,1,1-trichloreothane
Hexachloroethane
1,1-dichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
Chloroethane
Bis(2-chloroethyl) ether
2-chloroethyl vinyl ethers
2-chloronaphthalene
2,4,6-trichlorophenol
4-Chloro-3-methylphenol
Chloroform
2-chlorophenol
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichlorobenzene
3,3-dichlorobenzidine
1,1-dichloroethene
1,2-trans-dichloroethene
2,4-dichlorophenol
1,2-dichloropropane
1,2-dichloropropylene
2,4-dimethylphenol
2,4-dinitrotuluene
2,6-dinitrotoluene
1,2-diphenylhydrazine
Ethylbenzene
Fluoranthene
4-chlorophenyl phenyl ether
4-bromophenyl phenyl ether
Bis(2-chloroisopropyl) ether
Bis(2-chloroethoxy) methane
Methylene chloride
Methyl chloride
Methyl bromide
Bromoform
Dichlorobromomethane
Chlorodibromomethane
Hexachlorobutadiene
Hexachlorocyclopentadiene
Isophorone
Naphthalene
Nitrobenzene
2-nitrophenol
4-nitrophenol
2,4-dinitrophenol
4,6-dinitro-o-cresol
N-nitrosodimethylamine
N-nitrosodiphenylamine
N-nitrosodi-n-propylamine
Pentachlorophenol
Phenol
Bis(2-ethylhexyl) phthalate
Butyl benzyl phthalate
Di-N-Butyl Phthalate
Di-n-octyl phthlate
Diethly Phthlate
Dimethly phthalate
benzo(a) anthracene
Benzo(a)pyrene
Benzo(b) fluoranthene
Benzo(b) fluoranthene
Chrysene
Acenaphthylene
Anthracene
Benzo(ghi) perylene
Fluorene
Phenanthrene
Dibenzo(,h) anthracene
Indeno (1,2,3-cd) pyrene
Pyrene
Tetrachloroethene
Toluene
Trichloroethene
Vinyl chloride
Aldrin
Dieldrin
Chlordane
4,4-DDT
4,4-DDE
4,4-DDD
Alpha-endosulfan
Beta-endosulfan
Endosulfan sulfate
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Alpha-BHC
Beta-BHC
Gamma-BHC
Delta-BHC
PCB-1242
PCB-1254
PCB-1221
PCB-1232
PCB-1248
PCB-1260
PCB-1016

ATTACHMENT C (continued)

EFFLUENT MONITORING PROGRAM

TO MAINTAIN COMPLIANCE WITH CATEGORICAL STANDARDS:

CITY OF ROSEVILLE
TRADITION • PRIDE • PROGRESS

Environmental Utilities
Laboratory / Industrial Waste
1800 Booth Road
Roseville, California 95747-9708

****

WARNING NOTICE OF VIOLATION

****

1. DISCHARGER _____

2. ADDRESS OF WASTEWATER DISCHARGE _____
_____

3. TIME OF VIOLATION (Date, Hour) _____

4. PERMIT NO. _____

5. VIOLATION OF ROSEVILLE MUNICIPAL CODE, SECTION _____

6. DESCRIPTION OF VIOLATION _____
_____
_____
_____

7. IMPORTANT: VIOLATION MUST CEASE AND DESIST PRIOR TO: _____
_____

8. RECEIPT OF NOTICE ACKNOWLEDGED BY DISCHARGER

_____ _____
PRINTED NAME DATE

_____ _____
TITLE SIGNATURE

9. NOTICE ISSUED BY:

_____ _____
PRINTED NAME DATE

_____ _____
TITLE SIGNATURE

CITY OF ROSEVILLE
TRADITION • PRIDE • PROGRESS

Environmental Utilities
Laboratory / Industrial Waste
1800 Booth Road
Roseville, California 95747-9708

***** NOTICE OF VIOLATION *****

1. DISCHARGER:

2. ADDRESS OF WASTEWATER DISCHARGE:

3. DATE OF VIOLATION:

4. PERMIT NO.:

5. VIOLAITON OF ROSEVILLE MUNICIPLE CODE:

6. DESCRIPTION OF VIOLATION:

7. IMPORTANT: *VIOLATION MUST CEASE AND DESIST IMMEDIATELY*

8. RECEIPT OF NOTICE ACKNOWLEDGED BY DISCHARGER:

PRINTED NAME	DATE
TITLE	SIGNATURE

9. NOTICE ISSUED BY:

NAME	DATE
TITLE	SIGNATURE

Appendix 3-2

Joint Exercise of Power Agreement for the South Placer Wastewater Authority

JOINT EXERCISE OF POWERS AGREEMENT
FOR THE
SOUTH PLACER WASTEWATER AUTHORITY

THIS JOINT EXERCISE OF POWERS AGREEMENT (the "Agreement") is made effective as of the 1st day of October, 2000, by and among the **CITY OF ROSEVILLE**, a charter city duly organized and existing under the laws of the State of California (the "City"), the **SOUTH PLACER MUNICIPAL UTILITY DISTRICT**, a municipal utility district duly organized and existing under the laws of the State of California (the "District"), and the **COUNTY OF PLACER**, a political subdivision duly organized and existing under the laws of the State of California (the "County")

RECITALS

A. WHEREAS, the City, the District, and the County have the common powers to acquire real property and to plan, finance, acquire, construct, own, and operate wastewater facilities; and

B. WHEREAS, the City, the District, and the County have determined that the public interest will be served by the joint exercise of these powers through this Agreement and the creation of a joint powers authority with the power to plan for, finance, acquire, construct, own and operate Regional Wastewater Facilities; and

C. WHEREAS, as soon as practicable after the date first above written, the City, the District, the County, and the Authority will enter into the Funding Agreement and the Operations Agreement (defined hereinafter), to provide for the funding and operation of the Regional Wastewater Facilities.

NOW THEREFORE, the parties hereto agree as follows:

AGREEMENT

1 Definitions. Words and phrases used in this Agreement shall have the following meanings:

Authority is defined in Section 3

Board is defined in Subsection 7 a.

City is defined in the preamble

County is defined in the preamble

District is defined in the preamble

Dry Creek Plant means the regional wastewater treatment plant owned and operated by the City for the mutual benefit of the Participants and known as the "Dry Creek Wastewater Treatment Plant "

Funding Agreement means an agreement among the Authority and the Participants relating to the funding of Regional Wastewater Facilities The Funding Agreement shall be in the form of Exhibit A, attached hereto, subject to such changes as may be (a) necessary to facilitate the issuance of bonds for the planning, design, acquisition, and construction of Regional Wastewater Facilities, or (b) otherwise agreed upon by the Participants

Law is defined in Section 2 hereof

Operations Agreement means an agreement among the Authority and the Participants relating to the operation of Regional Wastewater Facilities The Operations Agreement shall be in the form of Exhibit B, attached hereto, subject to such changes as may be (a) necessary to facilitate the issuance of bonds for the planning, design, acquisition, and construction of Regional Wastewater Facilities, or (b) otherwise agreed upon by the Participants

Participant means, individually, the City, the County, or the District Participants means, collectively, the City, the County and the District

Pleasant Grove Plant means the regional wastewater treatment plant to be owned and operated by the City for the mutual benefit of the Participants and to be known as the Pleasant Grove Wastewater Treatment Plant

Regional Connection Fees means the connection fees imposed and collected by the Participants pursuant to the applicable provisions of the Roseville Municipal Code, District ordinances, and County ordinances, for the purpose of funding expansions or modifications of, and/or improvements to, Regional Wastewater Facilities

Regional Wastewater Facilities means the Pleasant Grove Plant, the Dry Creek Plant, any other regional treatment plants constructed by the Authority or any of the Participants in the future to facilitate wastewater treatment, collection, conveyance, recycling, discharge, and disposal services collectively to all of the Participants, and all Related Regional Infrastructure

Related Regional Infrastructure means trunk sewers, interceptor lines, force mains, pump stations, reclaimed/recycled water infrastructure, and all other wastewater infrastructure, constructed in conjunction with the Pleasant Grove Plant, the Dry Creek Plant, and/or other

regional wastewater treatment plants constructed in the future, as appropriate and necessary to facilitate wastewater collection, conveyance, treatment, recycling, discharge, and disposal services collectively to all of the Participants. "Related Regional Infrastructure" shall not include trunk sewers, interceptor lines, force mains, pump stations, reclaimed/recycled water infrastructure, or any other wastewater infrastructure that (a) facilitate such services to only one or two of the Participants, or (b) are otherwise covered by other agreements providing for the apportionment of construction, operation and maintenance costs therefor, except for the agreements that are expressly superceded by the Funding Agreement and the Operations Agreement.

2. Authority and Purpose. This Agreement is made pursuant to Chapter 5 of Division 7 of Title 1 of the California Government Code (commencing with section 6500) (the "Law") relative to the joint exercise of powers common to the Participants. The purpose of this Agreement is to provide for the planning, financing, acquisition, ownership, construction, and operation of Regional Wastewater Facilities.

3. Creation of Authority and Jurisdiction. The Participants hereby create the South Placer Wastewater Authority ("Authority"), a public entity separate from the City, the District, and the County. The jurisdiction of the Authority shall be the service areas served by Regional Wastewater Facilities, as those areas may be modified from time to time.

4. Term and Termination. This Agreement shall be effective as of the date first above written. It shall remain in effect until terminated in accordance with the Law by two (2) or more of the Participants; provided, however, that this Agreement may not be terminated, and no Participant may withdraw its membership, until all bonds or other instruments of indebtedness issued by the Authority, if any, have been paid in full.

5. Powers. The Authority shall have all powers necessary or reasonably convenient to carry out the purposes stated in Section 2, including, but not limited to, the following:

a. to secure administrative office space and furnishings;

b. to make and enter into contracts;

c. to contract for, or employ, administrative, technical and support staff, and consultants and contractors of any kind;

d. to acquire and maintain insurance of all types;

e. to lease, acquire, hold, or dispose of real property by negotiation, dedication, or eminent domain;

f. to lease, acquire, operate, maintain and dispose of materials, supplies, and equipment of all types;

g. to construct and operate buildings and facilities of any kind, including, without limitation, Regional Wastewater Facilities;

h. to accept, hold, invest (pursuant to the Law, including, without limitation, section 6509 5 thereof), manage, and expend monies;

i. to levy fees and taxes, to enter into lease purchase agreements, and to issue bonds and incur other forms of indebtedness, as provided for in the Law, including, without limitation, sections 6547, 6547 1, 6547 5, and 6547 6 thereof, or any other applicable law;

j. to form a special assessment district under any legal authority that exists now or in the future, including, without limitation, the Improvement Act of 1911 (Streets & Highways Code section 5000 *et seq.*), the Municipal Improvement Act of 1913 (Streets & Highways Code section 10000 *et seq.*), the Improvement Bond act of 1915 (Streets & Highways Code section 8500 *et seq.*), or any other authority that exists now or in the future;

k. to form a special tax district under the Mello-Roos Community Facilities District Act or any other authority that may exist now or in the future;

l. to negotiate and enter into reimbursement agreements when monies to construct Regional Wastewater Facilities are available;

m. to sue and be sued; and

n. to exercise all powers incidental to the foregoing.

6. Duties. The Authority shall have the duty to do the following within the times specified or, if no time is specified, within a reasonable time:

a. to retain legal counsel for all Authority business, including litigation;

b. to evaluate the need for, and acquire and maintain if necessary, liability, errors and omissions, or other insurance;

c. to finance Regional Wastewater Facilities; and

d. to conduct an annual audit as required by the provisions of Subsection 7 d(3)

7 Administration

a Governing Board -- Membership The Authority shall be administered by a board of directors ("Board") consisting of five directors Two directors shall be appointed by the City, one director shall be appointed by the District, and two directors shall be appointed by the County One County-appointed director shall be a member of the County Board of Supervisors and must represent a supervisorial district which includes all or a portion of the City of Roseville; such County-appointed director shall be selected annually by the County Board of Supervisors, and shall be subject to confirmation by the Roseville City Council

b Meetings

(1) Regular Meetings The Board shall by resolution establish the number of regular meetings to be held each year and the date, hour and location at which such regular meetings shall be held; provided, that the Board shall meet at least once every six (6) months

(2) Special Meetings Special meetings of the Board may be called in accordance with the provisions of the Ralph M Brown Act (California Government Code section 54950 *et seq.*).

(3) Conduct of Meetings All meetings of the Board shall be held in accordance with the Ralph M Brown Act (California Government Code section 54950 *et seq.*)

(4) Minutes The Secretary of the Authority shall cause minutes of all meetings of the Board to be kept and shall, as soon as possible after each meeting, cause a copy of the minutes to be forwarded to each member of the Board, and to the City, District, and County

(5) Quorum Three (3) directors of the Board shall constitute a quorum for the transaction of business Except as provided in Section 8, actions of the Board shall require the affirmative vote of a majority of the entire Board (i e , three (3) affirmative votes)

c Procedures

(1) The Board shall elect a chair from among its membership to preside at meetings and shall select a secretary who may, but need not, be a member of the Board The Board may, from time to time, elect such other officers as the Board shall deem necessary or convenient to conduct the affairs of the Authority

(2) The Board may adopt by resolution rules of procedure, not inconsistent with the provisions of this Agreement, to govern the conduct of its meetings

(3) Members of the Board shall comply with Title 9 of the California Government Code, commencing with section 81000 (Political Reform Act of 1974).

d. Fiscal Matters.

(1) Treasurer and Auditor.

(A) Except as provided in Subsection (B), below, the treasurer and finance director of the City, respectively, are designated the treasurer and auditor of the Authority with the powers, duties, and responsibilities specified in the Law, including, without limitation, sections 6505 and 6505 5 thereof.

(B) In lieu of the designations in Subsection (A)., above, the Board may appoint one or more of its employees to either or both of the positions of treasurer or auditor as provided in the Law, including, without limitation, section 6505.6 thereof.

(2) Custodian of Property. The treasurer and auditor of the Authority shall be the public officers who have charge of, handle, and have access to, the Authority's property and shall file with the Authority an official bond in the amount set by the Board.

(3) Accounts and Reports. The Board shall establish and maintain such funds and accounts as may be required by good accounting practice. The books and records of the Authority shall be open to inspection at all reasonable times to the County, the City and the District, and their respective representatives. The accounts shall be prepared and maintained by the treasurer and auditor of the Authority. The Authority, within one hundred twenty (120) days after the close of each fiscal year, shall cause an independent audit of all financial activities for such fiscal year to be prepared by an independent certified public accountant employed by the Authority. The Authority shall promptly deliver copies of the audit report to the Participants.

(4) Budgets. The Board shall adopt a budget no later than ninety (90) days after the effective date of this Agreement and no later than June 30th of each year thereafter.

(5) Contributions. The Participants shall pay to the Authority the contributions to be specified in the Funding Agreement.

8 Voting. Notwithstanding Subsection 7 b, the following actions may only be taken as set forth below:

a. The affirmative vote of at least four (4) Board members is required to set reserves, or authorize expenditures, for future expansions of Regional Wastewater Facilities.

b The affirmative vote of at least five (5) Board members is required:

(1) to authorize the issuance and sale, refinancing, or early redemption, of bonds; or

(2) to impose fees or assessments (other than the Regional Connection Fee), levy taxes, or order the formation of an assessment or special district.

9. Exercise of Powers. The powers and duties which (a) are common to the Participants, and (b) are vested in the Authority only by virtue of this Agreement, and are not independent powers and duties which arise by virtue of the Law, shall be exercised and carried out subject only to such restrictions upon the manner of exercising such powers or carrying out such duties as are imposed upon the City of Roseville in the exercise of similar powers or in carrying out similar duties, as provided in section 6509 of the Law.

10. Fiscal Year. The fiscal year of the Authority shall be the period from July 1st of each year to and including the following June 30th.

11 Debts, Liabilities and Obligations. The debts, liabilities, and obligations of the Authority shall not constitute debts, liabilities, or obligations of the County, the City, or the District, either jointly or severally.

12. Liability of Board, Officers and Employees.

a The members of the Board, officers, and employees of the Authority shall use ordinary care and reasonable diligence in the exercise of their powers, and in the performance of their duties pursuant to this Agreement. They shall not be liable to the Participants for any mistake of judgment or other action made, taken, or omitted by them in good faith, nor for any action made, taken, or omitted by any agent, employee, or independent contractor selected with reasonable care, nor for loss incurred through the investment of the Authority's funds, or failure to invest the same.

b To the extent authorized by California law, no member of the Board, officer, or employee of the Authority shall be responsible for any action made, taken, or omitted, by any other member of the Board, officer, or employee. No member of the Board, officer, or employee of the Authority shall be required to give a bond or other security to guarantee the faithful performance of his or her duties pursuant to this Agreement, except as provided in Subsection 7.d(2).

c. The funds of the Authority shall be used to defend, indemnify, and hold harmless the Authority and any member of the Board, officer, or employee of the Authority for actions taken in good faith and within the scope of his or her authority. Nothing herein shall limit the right of the Authority to purchase insurance to provide coverage for the foregoing indemnity.

13. Liberal Construction. The provisions of this Agreement shall be liberally construed as necessary or reasonably convenient to achieve the purposes of the Authority.

14. Disposition of Property. Upon termination of this Agreement, the Authority shall convey all assets of the Authority to the City. Thereafter, the City shall use such assets of the Authority for the benefit of the City, District and County, as set forth in the Operations Agreement and the Funding Agreement.

15. Severability. Should any part, term, or provision of this Agreement be decided by the courts to be illegal or in conflict with any law of the State of California, or otherwise be rendered unenforceable or ineffectual, the validity of the remaining portions or provisions shall not be affected thereby.

16. Successors; Assignment. This Agreement shall be binding upon and shall inure to the benefit of the successors of the Participants. No Participant may assign any rights or obligations hereunder without the consent of the other Participants; provided, further, that no such assignment may be made if it would materially and adversely affect (a) the rating of bonds issued by the Authority, or (b) bondholders holding such bonds.

17. Amendments. This Agreement may be amended only by the unanimous written agreement of the Participants. So long as any bonds of the Authority are outstanding and unpaid, or funds are not otherwise set aside for the payment or redemption thereof in accordance with the terms of the bonds and the documentation relating thereto, this Agreement shall not be amended, modified or otherwise revised, changed or rescinded, if such action would (a) materially and adversely affect (1) the rating of bonds issued by the Authority, or (2) bondholders holding such bonds, or (b) limit or reduce the obligations of the Participants to make, in the aggregate, the payments under the Funding Agreement which are for the benefit of the owners of the bonds.

18. Notices. Any notices to Participants required by this Agreement shall be delivered or mailed, U.S. first class, postage prepaid, addressed as follows:

SOUTH PLACER
WASTEWATER AUTHORITY
2005 Hilltop Circle
Roseville, CA 95747

Attention: Art O'Brien

with a copy to:
Authority's General Counsel
Hyde, Miller, Owen & Trost
428 J Street, Suite 400
Sacramento, CA 95814
Attention: Kirk E. Trost

CITY OF ROSEVILLE
Environmental Utilities Dept.
2005 Hilltop Circle
Roseville, CA 95747

Attention: Derrick Whitehead
Environmental Utilities Director

with a copy to:
Roseville City Attorney
311 Vernon Street, Suite 202
Roseville, CA 95678
Attention: Mark Doane

SOUTH PLACER MUNICIPAL
UTILITY DISTRICT
P O. Box 45
3671 Taylor Road
Loomis, CA 95650

Attention: Jerry Loscalzo
General Manager

with a copy to:
District's General Counsel
O'Brien & Brown LLP
2339 Gold Meadow Way, Suite 230
Gold River, CA 95670
Attention: Adam Brown

COUNTY OF PLACER
Department of Facilities Services
Special Districts Divisions
11476 "C" Avenue
Auburn, CA 95603
Attention: Tom Miller,
Director

with a copy to:
Placer County Counsel
175 Fulweiler Avenue
Auburn, CA 95603
Attention: Scott Finley

Notices under this Agreement shall be deemed given and received at the earlier of actual receipt, or the second business day following deposit in the United States mail, as required above. Any Participant may amend its address for notice by notifying the other Participants

19 Counterparts. This Agreement may be executed in any number of counterparts, and by different parties in separate counterparts, each of which, when executed and delivered, shall be deemed to be an original and all of which counterparts taken together shall constitute but one and the same instrument

IN WITNESS WHEREOF, the Participants have entered into this Agreement effective as of the date first above written.

CITY OF ROSEVILLE

BY: _____
Allen E. Johnson
City Manager

ATTEST:

BY: _____
Carolyn Parkinson
City Clerk

APPROVED AS TO FORM:

BY: _____
Mark J. Doane
City Attorney

RECD OCT 27 2000

APPROVED AS TO SUBSTANCE:

BY: _____
Derrick Whitehead
Environmental Utilities Director

SOUTH PLACER MUNICIPAL UTILITY DISTRICT

BY: _____
Frances E. Scheible
President, Board of Directors

APPROVED AS TO FORM:

BY: _____
William T. Sweigert
District Counsel

ATTEST:

BY: _____
Carol Bean
Secretary to the Board of Directors

COUNTY OF PLACER

BY: Harriet White
Harriet White
Chairman, Board of Supervisors

APPROVED AS TO FORM:

BY: Scott Finley
for Anthony J. LaBouff
County Counsel

ATTEST:

BY: Antoinette Sharp
Antoinette Sharp
Clerk, Board of Supervisors

Appendix 3-3

South Placer Wastewater Authority Operations Agreement

AGREEMENT REGARDING THE OPERATION AND USE OF THE SOUTH PLACER REGIONAL WASTEWATER FACILITIES

TABLE OF CONTENTS

1.	Definitions		2
2.	Operation and Maintenance of Regional Wastewater Facilities		5
3.	Charges for Regional Operation and Maintenance Costs		5
4.	Inflow and Infiltration; Maintenance of Participant Systems		6
	a.	Inflow and Infiltration Requirement	6
	b	Participant System Evaluation	6
	c.	Long Term Participant System Rehabilitation and Maintenance	6
	d	Construction Specifications	7
5.	Backup Power and Wet Well Capacity		7
6.	High Water Alarms		7
7.	Unauthorized Wastewater Discharges		7
8.	Flow Monitoring Equipment		7
9.	Ordinance Modification; Compliance with Discharge Permits		7
10.	Industrial Pretreatment Program		8
11.	Tax Exemption		8
12.	Major Dischargers		8
13.	Moratorium.		8
14.	City/County Provisions		9
	a.	Linda Creek Raw Water Bypass	9
	b.	Dry Creek - West Placer Community Plan Area Wastewater Facilities	9
	c.	Reclaimed Water	9
	d.	Sabre City Plant	11
15.	Indemnity		11
16.	Term and Termination		11

17. Amendments 11

18. Rights of Participants and Third Parties 11

19 Notices. 12

20. Counterparts 13

AGREEMENT REGARDING THE OPERATION AND USE OF THE SOUTH PLACER REGIONAL WASTEWATER FACILITIES

THIS AGREEMENT REGARDING THE OPERATION AND USE OF THE SOUTH PLACER REGIONAL WASTEWATER FACILITIES (the "Agreement") is made effective as of the 1st day of October, 2000, by and among the **SOUTH PLACER WASTEWATER AUTHORITY**, a joint powers agency ("Authority"), the **CITY OF ROSEVILLE**, a charter city duly organized and existing under the laws of the State of California (the "City"), the **SOUTH PLACER MUNICIPAL UTILITY DISTRICT**, a municipal utility district duly organized and existing under the laws of the State of California (the "District"), and the **COUNTY OF PLACER**, a political subdivision duly organized and existing under the laws of the State of California (the "County")

RECITALS

A. WHEREAS, effective October 1, 2000, the Participants entered into that certain "Joint Exercise of Powers Agreement for the South Placer Wastewater Authority" (the "JPA Agreement"), which JPA Agreement created the Authority; and

B WHEREAS, concurrently herewith, the Participants and the Authority entered into that certain Funding Agreement Relating to the South Placer Regional Wastewater Facilities (the "Funding Agreement"); and

C. WHEREAS, the Participants have previously entered into certain agreements referred to in the Funding Agreement as the Dry Creek Agreements, the Roseville/Placer County Agreement, the Preliminary Agreement, and the Settlement Agreement; and

D. WHEREAS, the Participants desire that this Agreement, the Funding Agreement, and the JPA Agreement, shall supersede the Dry Creek Agreements, the Roseville/Placer County Agreement, the Preliminary Agreement, and the Settlement Agreement (except for sections 5 through 13 thereof), and that the foregoing superseded agreements shall be of no further force or effect; and

E. WHEREAS, by entering into this Agreement the parties hereto desire to provide for (1) the operation and maintenance of Regional Wastewater Facilities, and (2) the ongoing funding necessary for the foregoing

AGREEMENT

NOW THEREFORE, the parties hereto agree as follows:

1. **Definitions.** Words and phrases used in this Agreement shall have the following meanings:

Average Dry Weather Flow means the average daily wastewater flow into the Regional Wastewater Facilities, measured from July 1st through September 30th of each year.

Bonds means, collectively, the Series A&B Bonds and any Parity Bonds, issued and at any time outstanding under the Indenture or any Parity Bonds Instrument, respectively.

Community Plan Area means the Dry Creek - West Placer Community Plan Area depicted on Exhibit "B," attached hereto and incorporated herein.

Discharge Permits means, collectively, the National Pollutant Discharge Elimination System Waste Discharge Requirements for the City of Roseville, issued by the Regional Water Quality Board, (a) on March 17, 2000, for the Pleasant Grove Plant (Order No. CA0084573), and (b) on June 16, 2000, for the Dry Creek Plant (Order No. CA0079502), and any amendments thereto.

Dry Creek Plant means the regional wastewater treatment plant owned and operated by the City for the mutual benefit of the Participants and known as the "Dry Creek Wastewater Treatment Plant."

Event of Default means:

(a) Default in the due and punctual payment of any amounts required to be paid hereunder by a party hereto, when and as the same shall become due and payable, and such default shall have continued for a period of ten (10) days after that party shall have been given notice in writing of such default by the Trustee, or any other party hereto; or

(b) Default by a party in the observance of any other covenants, agreements or conditions on its part in this Agreement, and such default shall have continued for a period of thirty (30) days after that party shall have been given notice in writing of such default by the Trustee, or any other party hereto; provided, however, that if any such default is not reasonably curable within such thirty (30) day period, the applicable party shall not be deemed to be in default if such party commences to cure the default within such thirty (30) day period and diligently pursues such cure to completion.

Fiscal Year means the period of time beginning on July 1st of any year and ending on June 30th of the following year, or any other twelve (12) month period agreed to in writing by all of

the Participants.

Funding Agreement is defined in Recital B

Indenture means that certain Indenture of Trust, dated as of October 1, 2000, between the Authority and the Trustee, under which the Series A&B Bonds are issued.

Inflow and Infiltration, or I&I, means direct and indirect discharges (other than normal authorized wastewater discharges) to the collection system serving Regional Wastewater Facilities. Such discharges include, without limitation, leaky joints and manholes, illegal storm drain connections, service laterals in need of repair, or wastewater lines located in the flood plain that are not watertight.

Parity Bonds means all bonds, notes or other obligations (including without limitation long-term contracts, loans, sub-leases or other legal financing arrangements) of the Authority, the proceeds of which are applied to the acquisition and construction of Regional Wastewater Facilities, payable from and secured by a pledge of and lien upon any of the Participant Net Revenues, and issued or incurred pursuant to Section 3 06 of the Indenture

Parity Bonds Instrument means the resolution, trust indenture or installment sale agreement adopted, entered into or executed and delivered by the Authority, and under which Parity Bonds are issued

Participant means, individually, the City, the County, or the District. Participants means, collectively, the City, the County and the District

Participant System or Participant's System means, as to each Participant, the facilities of such Participant (excluding Regional Wastewater Facilities, if any, owned by such Participant) for the collection, transmission and disposal of wastewater to or through the Regional Wastewater Facilities, together with necessary pipes, pumps, valves and machinery and lands, easements and rights of way therefor; and other works, properties or structures necessary or convenient for the collection, transmission and disposal of wastewater, including all additions, betterments, extensions and improvements to such facilities or any part thereof.

Pleasant Grove Plant means the regional wastewater treatment plant to be owned and operated by the City for the mutual benefit of the Participants and to be known as the "Pleasant Grove Wastewater Treatment Plant."

Proportional Volumetric Share means the proportion of total yearly wastewater volume entering the Regional Wastewater Facilities that is attributable to the City, the District or the County, as applicable. The City shall determine, using information supplied by all Participants, the total yearly wastewater volume and each Participant's Proportional Volumetric Share on a Fiscal Year basis

Regional Connection Fees means the connection fees imposed and collected by the Participants, pursuant to the applicable provisions of the Roseville Municipal Code, District ordinances, and County ordinances, for the purpose of funding expansions or modifications of, and/or improvements to, Regional Wastewater Facilities.

Regional Operation and Maintenance Costs means, for any given period, the reasonable and necessary costs (both direct and incidental) of operating and maintaining Regional Wastewater Facilities during such period, calculated on sound accounting principles, including (among other things) the reasonable expenses of management and repair and other expenses necessary to maintain and preserve Regional Wastewater Facilities in good repair and working order, and reasonable amounts for administration (including, without limitation, costs of administration of the Participants' industrial pretreatment programs by the City, but only to the extent such costs are not chargeable to significant industrial users pursuant to Roseville Municipal Code Chapter 14 26), overhead, insurance, taxes (if any), labor, materials, water, electricity, natural gas, chemicals, employee bonds, vehicles, communications equipment, improvements, replacements and rehabilitations, preventive maintenance, sludge disposal, environmental remediation, engineering services, analytical testing services, rents, right-of-way charges, recycled water operations costs, legal judgments and assessments (including, without limitation, enforcement actions of the Regional Water Quality Board), and other similar costs. Credit items, such as all salvage value of Regional Wastewater Facilities, and revenue from the sale of sludge or other products, including, without limitation, reclaimed and recycled water, shall be credited first to Regional Operation and Maintenance Costs and then to each of the Participants based on their Proportional Volumetric Share.

Regional Wastewater Facilities means the Pleasant Grove Plant, the Dry Creek Plant, any other regional treatment plants constructed by the Authority or any of the Participants in the future to facilitate wastewater collection, conveyance, treatment, recycling, discharge, and disposal services collectively to all of the Participants, and all Related Regional Infrastructure.

Related Regional Infrastructure shall mean trunk sewers, interceptor lines, force mains, pump stations, reclaimed/recycled water infrastructure, and all other wastewater infrastructure, constructed in conjunction with the Pleasant Grove Plant, the Dry Creek Plant, and/or other regional wastewater treatment plants constructed in the future, as appropriate and necessary to facilitate wastewater collection, conveyance, treatment, recycling, discharge, and disposal services collectively to all of the Participants. "Related Regional Infrastructure" shall not include trunk sewers, interceptor lines, force mains, pump stations, reclaimed/recycled water infrastructure, or any other wastewater infrastructure that (a) facilitate such services to only one or two of the Participants, or (b) are otherwise covered by other agreements providing for the apportionment of construction, operation and maintenance costs therefor, except for the agreements that are expressly superceded by this Agreement and the Funding Agreement.

Regional Water Quality Board means the California Regional Water Quality Control Board, Central Valley Region

Series A&B Bonds means the bonds of the Authority to be issued under the Indenture.

Trustee means the Trustee appointed under the Indenture, and any successor thereto. The term "Trustee" shall also mean trustee(s) under any Parity Bonds Instrument(s), as applicable.

User means any person or entity that discharges water or waste into a Participant System and/or the Regional Wastewater Facilities, and is subject to regulation under the provisions of Roseville Municipal Code Chapter 14 26 (entitled "Industrial Wastewater"), or similar ordinances enacted by the District and the County.

2. Operation and Maintenance of Regional Wastewater Facilities.

a. The City shall operate and maintain the Regional Wastewater Facilities for the mutual benefit of, and provide wastewater treatment services to, those areas depicted on Exhibit "A," attached hereto and incorporated herein, which areas are within the jurisdictional boundaries of the City, District, and County, so long as the District and County pay to the City their proportionate shares of the amounts required to be paid under this Agreement and the Funding Agreement.

b. Additional portions of the County Service Area No. 28, Zone No. 55 (Livoti Track), may be added to the areas served by Regional Wastewater Facilities upon County's compliance with all legal and administrative requirements therefor.

c. The City shall perform, and operate and maintain the Regional Wastewater Facilities in compliance with, all of the covenants of the Authority relating to the "Enterprise," set forth in Article V of the Indenture.

d. Each Participant shall have the right to (1) maintain connections between such Participant's System and the Regional Wastewater Facilities at all locations existing as of the date first above written, and (2) establish new connections to the Regional Wastewater Facilities as needed, subject to the City's prior written approval of the location of such connection, which approval shall not be unreasonably withheld.

3. Charges for Regional Operation and Maintenance Costs.

a. Each Participant's responsibility for Regional Operation and Maintenance Costs shall be based upon its Proportional Volumetric Share. The apportionment of the costs of administration of the Industrial Pretreatment Program for non-permitted Users shall be equitably allocated by future agreement among the Participants

b. During the month of June of each year, the City shall provide each Participant with an estimate of the Regional Operation and Maintenance Costs for the following Fiscal Year. Thereafter, the City shall bill the District and the County quarterly, in advance, for their respective

shares of the estimated Regional Operation and Maintenance Costs, which shares shall be in proportion to the Proportional Volumetric Share of each, as measured during the immediately preceding Fiscal Year.

c. (1) Within one hundred eighty (180) days after the close of each Fiscal Year, the City shall submit to each Participant a detailed statement of actual Regional Operation and Maintenance Costs, and the actual Proportional Volumetric Share of each Participant, for the Fiscal Year then ended. If the amount advanced for estimated Regional Operation and Maintenance Costs by any Participant is less than that Participant's share of actual Regional Operation and Maintenance Costs (based on that Participant's actual Proportional Volumetric Share), the City shall include the difference in a subsequent quarterly invoice for payment by that Participant. If the amount advanced for estimated Regional Operation and Maintenance Costs by any Participant is more than that Participant's share of actual Regional Operation and Maintenance Costs (based on that Participant's actual Proportional Volumetric Share), the City shall remit such excess amounts to that Participant, or credit that Participant's account, at the City's election.

(2) Each Participant may, at its sole cost and expense, inspect and/or audit the City's books and records concerning Regional Operation and Maintenance Costs, and the City shall cooperate reasonably with any such inspection and/or audit

d. Each Participant shall pay Regional Operation and Maintenance Costs within sixty (60) days after receipt of City's invoice therefor. Interest shall accrue on any delinquent amounts at the rate of return paid by the Local Agency Investment Fund plus one percent (1%), commencing one hundred eighty (180) days after receipt of the City's invoice

4. Inflow and Infiltration; Maintenance of Participant Systems.

a Inflow and Infiltration Requirement. The maximum allowable amount of I&I on any given day for any Participant shall be 2.5 times the Average Dry Weather Flow of that Participant.

b. Participant System Evaluation The Participants shall evaluate their respective Participant Systems periodically for I&I to determine those areas that need specific attention or repair. Participant System analysis may be accomplished by any reasonably effective method, including, without limitation, smoke testing, system flow monitoring and videotaping.

c. Long Term Participant System Rehabilitation and Maintenance Once the Participant Systems have been evaluated, and areas needing improvement have been identified, each Participant shall develop a Participant System rehabilitation program that will lower the amount of maximum daily I&I for that Participant to below 2.5 times that Participant's Average Dry Weather Flow.

d. Construction Specifications. The Participants shall meet and develop region-wide wastewater construction specifications to ensure that all new wastewater infrastructure is constructed to stringent standards that will reduce I&I, as required herein. Pressure testing of transmission mains and vacuum testing of manholes are a minimum requirement that must be contained in the specifications of any construction contracts let by the Participants with respect to Participant Systems and/or Regional Wastewater Facilities.

5. **Backup Power and Wet Well Capacity.** Each Participant shall install and maintain adequate backup power sources, and/or wet well capacity, at all pump stations to prevent overflow during power outages and pump failures

6. **High Water Alarms.** Each Participant shall install and maintain functional high water alarm and notification systems at each pump station.

7. **Unauthorized Wastewater Discharges.** Each Participant shall report any unauthorized discharges of wastewater to the Regional Water Quality Board within one (1) business day after the discovery of such discharge

8. **Flow Monitoring Equipment.** Each Participant shall, at its sole cost, maintain flow monitoring equipment at each major connection point between such Participant's System and the Regional Wastewater Facilities. Such equipment shall be capable of measuring peak wet weather flows as well as dry weather flows, and ultimate as well as interim flows, and data therefrom shall be telemetered to the Dry Creek Plant. Flow estimates may be used for smaller connection points, provided all Participants agree on the methodology used to estimate the flow. Otherwise, the applicable Participant shall install portable flow monitoring equipment semi-annually for two one-week periods, once during the wet season (January 1st through March 31st) and once during the dry season (July 1st through September 30th).

9. **Ordinance Modification; Compliance with Discharge Permits.**

a. The Participants shall adopt all applicable provisions of ordinances, statutes, rules and regulations, established by the City, regulating the use of, and discharge of waters and wastes into, the Regional Wastewater Facilities, including all applicable provisions of Roseville Municipal Code Chapters 14 12, 14.16, 14.26, and all later applicable amendments thereto, within ninety (90) days after receipt of the City's written request therefor. The Participants shall, on or before December 1, 2000, meet and determine the applicability of provisions of the foregoing City ordinances, statutes, rules and regulations, and shall thereafter adopt the same in accordance with this Agreement. The City will notify the other Participants of any proposed changes to such ordinances, statutes, rules and regulations, and invite the other Participants to participate in the formulation and drafting of any such changes to be adopted by the City which are applicable to the use of, and discharge of waters and wastes into, the Regional Wastewater Facilities, and are to be adopted by the Participants. In addition, the Participants shall meet and evaluate existing

ordinances to (1) incorporate provisions enforcing I&I reductions, and (2) ensure uniform methods of categorizing and calculating the Regional Connection Fee

b. Each Participant shall operate and maintain its Participant System in compliance with the requirements of the Discharge Permits and other applicable laws and regulations, and shall reasonably agree to amend this Agreement from time to time as necessary to comply with the requirements of the Discharge Permits or other applicable laws and regulations Each Participant shall cooperate with, and assist, the other Participants, as reasonably necessary to comply with the Discharge Permits, including, without limitation, making its Participant System available for any studies and inspections required by the Discharge Permits.

10. Industrial Pretreatment Program. The Agreement for Industrial Waste Pretreatment Program, made by and among the Participants effective August 19, 1988, a copy of which is attached hereto as Exhibit D, is hereby incorporated into this Agreement as if set forth in full

11. Tax Exemption. No Participant shall levy any tax or assessment, or any similar charge, on any real or personal property, or interest therein, that lies within such Participant's jurisdictional boundaries and is part of the Regional Wastewater Facilities, or another Participant's System.

12. Major Dischargers. For the purpose of assuring the availability of adequate regional wastewater treatment capacity, when the Regional Wastewater Facilities have reached seventy-five percent (75%) of their treatment capacity, no Participant shall permit, or agree to permit, any commercial or industrial applicant or entity whose Average Dry Weather Flow discharge during the useful life of the applicant's project is estimated to be Four Hundred Thousand (400,000) gallons per day or greater, to connect to that Participant's System, or otherwise provide wastewater treatment service, without first obtaining the written consent of the Authority and a majority of the Participants Such consent shall not unreasonably be withheld. Permission to connect is deemed to occur at the time a Participant gives an applicant a notice of willingness to serve, or otherwise authorizes an applicant to connect to that Participant's System, whether this occurs at the issuance of a construction permit, or the collection of the Regional Connection Fee, or prior thereto. The City shall promptly provide written notification to the Authority, the District, and the County, when the Regional Wastewater Facilities have reached seventy-five percent (75%) of capacity

13. Moratorium. At such time as insufficient capacity remains in the Regional Wastewater Facilities to treat additional flows, the Authority shall impose a moratorium on additional connections, pending the expansion of treatment capacity. Any moratorium necessitated by an exhaustion of treatment capacity shall apply equally and simultaneously to all Participants

14. City/County Provisions. The following provisions bind, and inure to the benefit of, the City and the County only:

a. Linda Creek Raw Water Bypass. The City shall provide a maximum of 0.8 cfs of supplemental flow to Linda Creek to replace discharge from the abandoned County SMD #2 wastewater treatment plant, provided that the County shall reimburse the City for the cost of such water, including wheeling, metering, and maintenance costs. Supplemental flow shall consist of a raw water bypass at the City's water treatment plant on Barton Road. The City reserves the right to temporarily discontinue the raw water bypass during any period that stage three (or higher) drought restrictions are in effect pursuant to Roseville Municipal Code Chapter 14.09. The City shall bill the County quarterly for supplemental water costs, with payment due within sixty (60) days after any billing.

b. Dry Creek - West Placer Community Plan Area Wastewater Facilities.

(1) The County shall cause to be constructed within the Community Plan Area such Participant System facilities as are appropriate to provide wastewater service, and shall operate and maintain said facilities.

(2) Wastewater shall be received at the Dry Creek Plant by force main. The County's Participant System for the Community Plan Area shall connect to the Dry Creek Plant at the headworks facility located at the northeast portion of the Dry Creek Plant site. Prior to the connection of Sabre City to the Regional Wastewater Facilities, all Regional Connection Fees shall be paid for Sabre City units. Cost of any modifications to the treatment facilities shall be borne by the County. Design of these facilities will require approval by the City prior to bid of the project.

c. Reclaimed Water.

(1) The use of reclaimed water is encouraged in all areas and is subject to the availability of the reclaimed water distribution system. The County shall prepare, or cause to be prepared, the engineer's report required for areas utilizing reclaimed water. The engineer's report shall be submitted to the City concurrently with its submission to the California Department of Health Services and the Regional Water Quality Board for review and approval by the City and the Regional Water Quality Board. No reclaimed water will be supplied until said engineer's report has been so approved and a reclamation use permit has been issued by the City.

(2) The County agrees to participate in paying connection fees, if any, and monthly user or use charges for reclaimed water which may be established by the City in the future, and to install such meters as may be necessary for this purpose.

(3) The County shall adopt the City's design criteria and construction standards for reclaimed water facilities, as the same may be amended from time to time. The

County shall adopt the City's rules and regulations (operational requirements) for reclaimed water use, as the same may be amended from time to time.

(4) The County shall not sell any excess reclaimed water.

(5) Reclaimed water will not be delivered to the County on demand, but will be delivered continuously over periods of not less than twenty-four (24) hours. The County shall receive the reclaimed water on an as-used basis. Discharge of Dry Creek Plant effluent to Dry Creek is the City's sole responsibility and shall be covered under its Discharge Permits.

(6) The County shall cause a reclaimed water line to be constructed from the Dry Creek Plant along Dry Creek to Watt Avenue within the Community Plan Area. Said line shall be a twenty-four inch (24") line constructed in two phases. Phase one shall be constructed as part of Placer County Community Facilities District No. 93-1 ("CFD #93-1"), and phase two shall be constructed by future development west of Wallerga Road. The reclaimed water line shall supply reclaimed water to users initially in CFD #93-1, as shown on Exhibit "C," and, ultimately, to all users within the Community Plan Area east of Watt Avenue, as permitted and/or approved by the City and County. The City shall own, operate and maintain said line. Plans for construction shall be reviewed and approved by the City and must meet City's reclaim design specifications. Individual projects inside the Community Plan Area shall own, operate and maintain their own systems starting at their connection to the City's line. The County shall be responsible for compliance with all federal, state, and local, requirements pertaining to reclaimed water distribution and use.

(7) The County and the City shall negotiate and execute a detailed reclaimed water operations agreement covering various topics, including, without limitation, quality of water, cost, operational criteria, and rights and responsibilities prior to the provision of reclaimed water. In addition to the foregoing, the agreement shall provide that (A) the City shall perform construction inspections of all reclaimed water facilities, (B) the City shall perform quarterly operations inspections for all reclaimed water facilities, and (C) the City shall perform cross-connection testing on an annual basis. The cost of such inspections and testing shall be paid for by the County, as determined by such agreement.

(8) The Dry Creek Plant connection will provide for the delivery of chlorinated or de-chlorinated water to said reclaim line. The delivery facilities shall have the associated valves and metering equipment necessary to monitor and control the discharge.

(9) If reclaimed water users outside CFD #93-1 of the Community Plan Area connect to said line, the City shall use its best efforts to require the users to reimburse the County. The County requires a 12-inch line for reclaimed water usage in the Community Plan Area. The remaining line capacity cost shall be based on associated costs (construction costs and engineering costs) attributable to the excess capacity and distributed on a pro-rata basis.

(10) The County shall be responsible for obtaining State and/or County permits to use the reclaimed water within the Community Plan Area.

d. Sabre City Plant.

(1) The County may cause the existing Sabre City Wastewater Treatment Plant (the "Sabre City Plant") within the Community Plan Area to be connected to the County's Participant System. If the Sabre City Plant is so connected, new connections to the Sabre City wastewater system will be limited to those within the County, unless otherwise agreed to by the City. The County shall pay the Regional Connection Fee for each unit connected.

(2) The County shall obtain all permits required for removing the Sabre City Plant from service.

(3) The County shall deed to the City a site on the grounds of the Sabre City Plant for the construction and operation of de-chlorination facilities. The specific location and dimensions of said site shall be subject to the reasonable agreement of the County and the City.

15. Indemnity. Each Participant (the "Indemnitor") agrees to hold harmless, defend and indemnify the other Participants, their officers, agents and employees, from and against any and all liabilities, claims, or damages of any nature, including, without limitation, personal injury, including death, or property damage, resulting from the negligent actions or inaction of the Indemnitor, its officers, agents, or employees, under the terms of this Agreement, including, without limitation, accidental wastewater discharges.

16. Term and Termination. This Agreement shall be effective as of the date first above written and shall remain in effect (a) for the full useful life of any and all Regional Wastewater Facilities, or (b) until such time as no Bonds remain outstanding, whichever is later. The expiration or sooner termination of the JPA Agreement shall not cause this Agreement to expire or terminate.

17. Amendments. This Agreement may be amended only by the unanimous written agreement of the Participants. So long as any Bonds are outstanding and unpaid, or funds are not otherwise set aside for the payment or redemption thereof in accordance with the terms of said Bonds and the documentation relating thereto, this Agreement shall not be amended, modified or otherwise revised, changed or rescinded (1) in any manner that will have a material adverse effect on the payment of Debt Service, or (2) in any manner that would result in a reduction in the credit ratings on any and all Bonds, or (3) in any manner that would limit or reduce the obligations of the Participants to make, in the aggregate, the payments hereunder which are for the benefit of the owners of Bonds.

18. Rights of Participants and Third Parties. The Trustee, and Authority's credit enhancement provider, if any, shall have the right, as third-party beneficiaries of this Agreement,

to initiate and maintain legal proceedings to enforce this Agreement to the extent provided for in the applicable Bond Documents. Except as provided in the foregoing sentence, nothing in this Agreement, express or implied, is intended to confer any rights or remedies under, or by reason of, this Agreement on any person other than the parties hereto and their respective permitted successors and assigns. If an Event of Default occurs hereunder, the parties hereto, the Trustee, and Authority's credit enhancement provider, if any, shall have the right to take whatever action it, or they, deem(s) necessary or advisable to ensure that such defaulting party complies with the provisions hereof, including, without limitation, bringing an action in law or in equity. In any action brought by any party to enforce the terms of this Agreement, the prevailing party shall be entitled to recover its reasonable attorney's fees. Any action arising out of this Agreement shall be brought in Placer County, California, regardless of where else venue may lie.

19. **Notices.** Any notices to parties required by this Agreement shall be delivered or mailed, U.S. first class, postage prepaid, addressed as follows:

SOUTH PLACER WASTEWATER AUTHORITY
2005 Hilltop Circle
Roseville, CA 95747

Attention: Art O'Brien

with a copy to:
Authority's General Counsel
Hyde, Miller, Owen & Trost
428 J Street, Suite 400
Sacramento, CA 95814
Attention: Kirk E. Trost

CITY OF ROSEVILLE
Environmental Utilities Dept
2005 Hilltop Circle
Roseville, CA 95747
Attention: Derrick Whitehead
Environmental Utilities Director

with a copy to:
Roseville City Attorney
311 Vernon Street, Suite 202
Roseville, CA 95678
Attention: Mark Doane

Finance Department
311 Vernon Street, Room 206
Roseville, CA 95678
Attention: Russ Branson,
Finance Director

SOUTH PLACER MUNICIPAL
UTILITY DISTRICT
P.O. Box 45
3671 Taylor Road
Loomis, CA 95650

Attention: Jerry Loscalzo
General Manager

with a copy to:
District's General Counsel
O'Brien & Brown LLP
2339 Gold Meadow Way, Suite 230
Gold River, CA 95670
Attention: Adam Brown

COUNTY OF PLACER
Department of Facilities Services
Special Districts Divisions
11476 "C" Avenue
Auburn, CA 95603
Attention: Tom Miller,
Director

with a copy to:
Placer County Counsel
175 Fulweiler Avenue
Auburn, CA 95603
Attention: Scott Finley

Notices under this Agreement shall be deemed given and received at the earlier of actual receipt, or the second business day following deposit in the United States mail, as required above Any party may amend its address for notice by notifying the other parties

20. Counterparts. This Agreement may be executed in any number of counterparts, and by different parties in separate counterparts, each of which, when executed and delivered, shall be deemed to be an original and all of which counterparts taken together shall constitute but one and the same instrument

IN WITNESS WHEREOF, the South Placer Wastewater Authority, the City of Roseville, the South Placer Municipal Utility District and the County of Placer have each caused their duly

authorized officers to execute this Agreement effective as of the date first written above.

SOUTH PLACER WASTEWATER AUTHORITY

BY: _____
Derrick Whitehead
Executive Director

ATTEST:

BY: Carrie Kolmer
Carrie Kolmer
Secretary,
Board of Directors

APPROVED AS TO LEGAL FORM:

BY: _____
Kirk E. Trost
Authority's General Counsel

CITY OF ROSEVILLE

BY: _____
Allen E. Johnson
City Manager

ATTEST:

BY: _____
Carolyn Parkinson
City Clerk

APPROVED AS TO FORM:

BY: _____
Mark J. Doane
City Attorney

APPROVED AS TO SUBSTANCE:

BY: _____
Derrick Whitehead
Environmental Utilities Director

SOUTH PLACER MUNICIPAL UTILITY DISTRICT

BY: _____
Gerald T. Loscalzo
General Manager

APPROVED AS TO FORM:

BY: _____
William T. Sweigert
District Counsel

ATTEST:

BY: _____
Carol J. Bean
Secretary to the Board of Directors

COUNTY OF PLACER

BY: _____
Harriet White
Chair, Board of Supervisors

APPROVED AS TO FORM:

BY: _____
Anthony J. LaBouff
County Counsel

ATTEST:

BY: _____
Antoinette Sharp
Clerk, Board of Supervisors

EXHIBIT A

Service Area

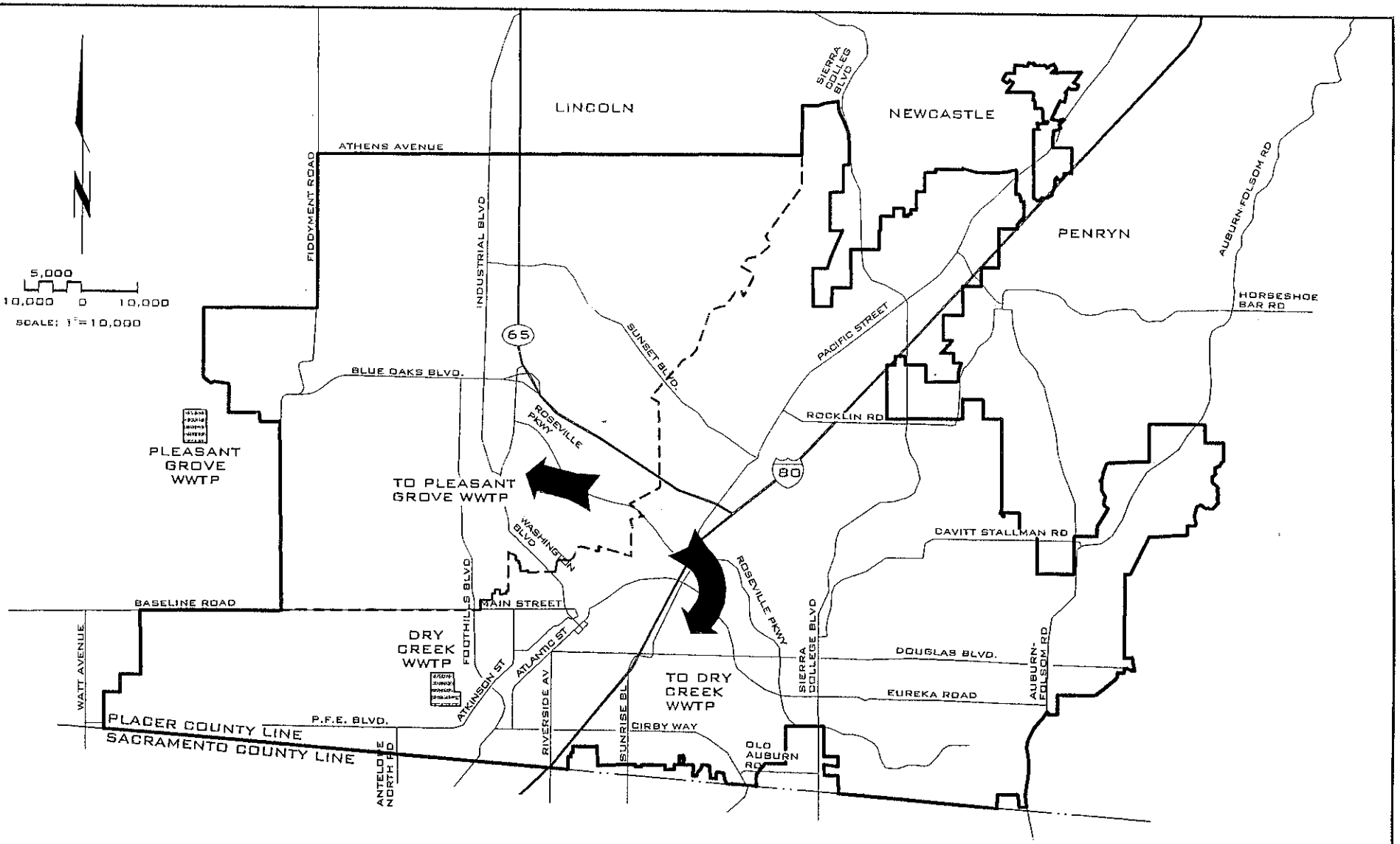


EXHIBIT A

SOUTH PLACER WASTEWATER AUTHORITY SERVICE AREA

BROWN AND CALDWELL	DATE 11-21-00 PROJECT 18218	FIGURE 1-1

EXHIBIT B

Dry Creek - West Placer Community Plan Area

EXHIBIT B

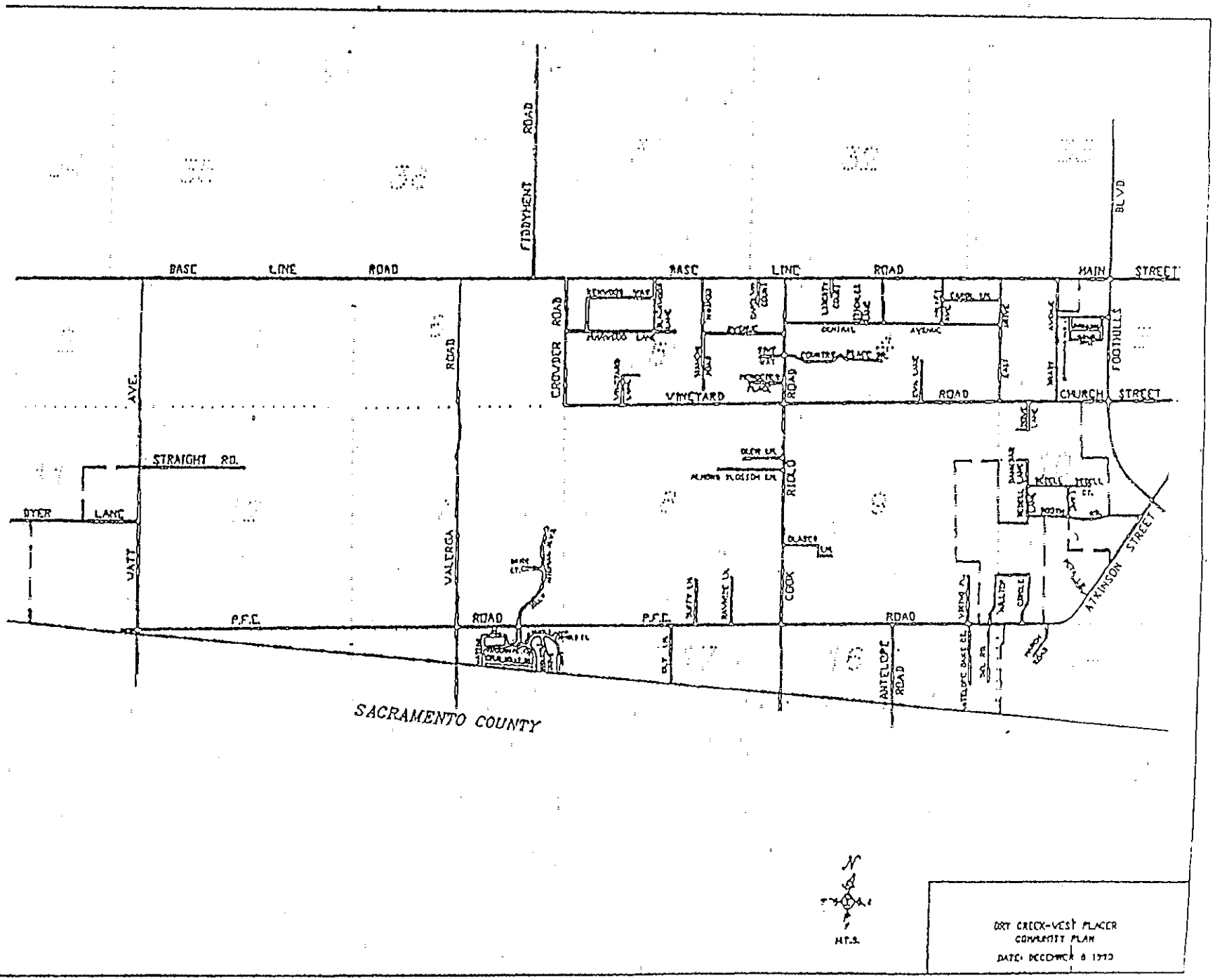
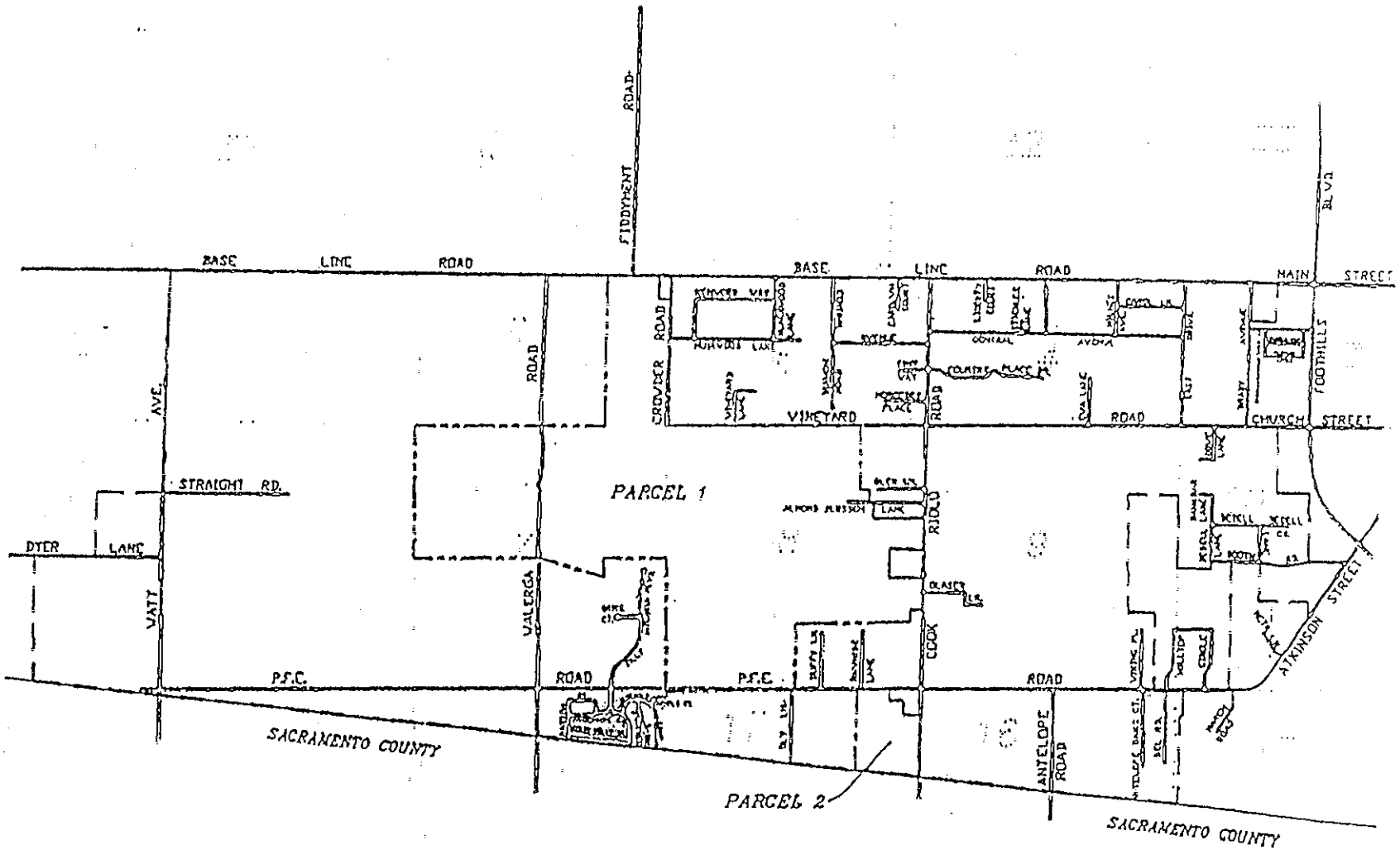

BASE LINE ROAD
FIDDYMENT ROAD
BASE LINE ROAD
MAIN STREET
BLVD
CROVER ROAD
VINEYARD ROAD
ROAD
CHURCH STREET
FOOTHILLS
AVE.
STRAIGHT RD.
DYER LANE
VATT
VALERGA ROAD
RIDLO
COOK
P.F.E.
ROAD
ATKINSON STREET
ANTELOPE ROAD
SACRAMENTO COUNTY
N
H.T.S.
DRY CREEK-WEST PLACER
COMMUNITY PLAN
DATE: DECEMBER 8 1993

EXHIBIT C

CFD #93-1

EXHIBIT C



LEGEND

COMMUNITY FACILITIES DISTRICT NO.1993-1 (DRY CREEK - WEST PLACER)

DRY CREEK - WEST PLACER COMMUNITY PLAN BOUNDARY

N

N.T.S.

COMMUNITY FACILITIES DISTRICT NO.1993-1
(DRY CREEK - WEST PLACER)
DATE: DECEMBER 9 1993

EXHIBIT D

Agreement for Industrial Waste Pretreatment Program

EXHIBIT D

RECEIVED
OCT 21 1988
S.P.M.U.D.

FILED
AUG 26 1988
CITY OF ROSEVILLE
BY dlm

AGREEMENT FOR INDUSTRIAL WASTE PRETREATMENT PROGRAM

This Agreement is made this 19th day of August, 1988, by and between the City of Roseville, a municipal corporation ("CITY"), Placer County ("COUNTY"), and South Placer Municipal Utility District ("DISTRICT"), and

W I T N E S S E T H:

WHEREAS, the City is responsible for operation and maintenance of a Regional Wastewater Treatment Plant, and

WHEREAS, domestic and industrial waste waters from outside the jurisdiction of the City are treated in the Regional Wastewater Treatment Plant, and

WHEREAS, an Industrial Wastewater Pretreatment Program in compliance with Title 40, Code of Federal Regulations, Part 403, is required to monitor and control industrial wastewater at the point of waste generation, and

WHEREAS, the City has developed and implemented an Industrial Wastewater Program, and

WHEREAS, the County and District desire to adopt and participate in the City's Industrial Wastewater Program, and

WHEREAS, the County and District desire to delegate administration and enforcement of the Industrial Wastewater Program to the City.

IL

403

NOW, THEREFORE, the Parties agree as follows:

Article I: Industrial Waste Ordinance

The Parties agree that the City's Industrial Wastewater Ordinance, Roseville Municipal Code Chapter 14.26 (hereinafter referred to as the Ordinance), and any and all future amendments, shall apply to all generators of industrial wastewater that discharge such waste to the Roseville Regional Wastewater Treatment Plant. The County and the District shall within sixty (60) days from the date of this agreement amend their ordinances and regulations to adopt the Ordinance.

Article II. Enforcement

The Parties agree that the City of Roseville shall have enforcement authority over any and all users, as defined in the Ordinance, that discharge waste to the Roseville Regional Wastewater Treatment Plant (RWWTP) and that the County and District shall amend their ordinances and regulations to expressly grant the City such enforcement authority.

Article III: Administration

The Parties agree that the City shall administer the Industrial Wastewater Program in accordance with the Ordinance.

Article IV: Funding

The Parties agree that the City shall have the authority to collect fees, charges, and all costs of implementing and enforcing the program from users in accordance with the Ordinance.

Article V: Notification

The Parties agree that the City shall be notified of any potential industrial waste generator whose industrial waste will be discharged to the Roseville Regional Wastewater Treatment Plant as a result of new development or expansion of existing facilities, at the earliest possible time. In the case of County, such notification shall be made prior to the granting of a tentative map, parcel map, or use permit whichever is sooner. In the case of District, such notification shall be made immediately after District receives a request for service from a potential industrial waste generator or a request for expansion of existing facilities by a potential industrial waste generator.

Article VI: Hold Harmless

County and/or District shall defend, indemnify and hold harmless City, its officers, agents, and employees from liability of claims for damage of any nature, including but not limited to personal injury, including death, or property damage, which may arise from or be connected with the direct or indirect operations, inaction or action of the City or its contractors, subcontractors,

agents or employees arising out of or connected with this Agreement.

Article VII: Integration

This instrument constitutes the sole and only agreement of the parties hereto relating to the industrial waste pretreatment program and correctly sets forth the rights, duties and obligations of each to the other as of its date.

Article VIII: Attorney's Fees

If legal action by any party is brought against another for breach of this Agreement or to compel performance of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees and costs.

IN WITNESS WHEREOF, the City of Roseville a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attested to by its City Clerk under the authority of Resolution No. 88-201 adopted by the Council of the City of Roseville on the 17th day of August, 1988, and COUNTY and DISTRICT have caused this agreement to be executed.

CITY OF ROSEVILLE, a municipal corporation

By: _____

ROBERT G. HUTCHISON,

PLACER COUNTY

By: _____

ROBERT P. MAHAN, CHAIRMAN

City Manager

SOUTH PLACER MUNICIPAL

UTILITY DISTRICT

ATTEST:

By:

HELEN FLORANCE, City Clerk

APPROVED AS TO FORM:

MICHAEL F. DEAN, City Attorney

The foregoing instrument is a correct copy of the original on file in this office.

ATTEST:
City Clerk of the City of Lincoln, California

DEPUTY CLERK

Appendix 3-4

Contract and Operating Agreement with Sacramento Area Sewer District and Sacramento Regional County Sanitation District

CITY OF ROSEVILLE CALIFORNIA

City Clerk
311 Vernon Street
Roseville, California 95678-2649

August 4, 2016

Katherine Manne, Contract Services
Sanitation Districts Agency
10060 Goethe Road
Sacramento, CA 95827

RE: WASTEWATER SERVICE BY CONTRACT AND OPERATING AGREEMENT (CONTRACT NO. 50000099)

At the meeting of August 3, 2016 the City Council adopted a resolution authorizing the City Manager to execute the agreement referenced above. The fully executed agreement is enclosed along with a certified copy of authorizing Resolution No. 16-328.

If you have any questions, please contact Wastewater Collection Superintendent Chris Bracco at (916) 746-1892.

SONIA OROZCO, CMC
CITY CLERK

By:

Judy Moore
City Clerk Technician

Cc: Attorney
Chris Bracco/Environmental Utilities

ATTACHMENT C

Contract No. 50000099

CITY OF ROSEVILLE
CALIFORNIA

Wastewater Service by Contract and Operating Agreement between Sacramento Regional County Sanitation District, Sacramento Area Sewer District, and City of Roseville

SASD Dispatch	(916) 875-6730
Regional San PCC	(916) 875-9400 or (916) 875-9406
City of Roseville	(916) 774-5750 or (916) 746-1890

REGIONALSAN
TAKING THE WASTE OUT OF WATER

SACRAMENTO AREA
SEWER DISTRICT

TABLE OF CONTENTS

INTRODUCTION 5
RECITALS 5
SECTION 1: DEFINITIONS 6
SECTION 2: FACILITIES 9
A. POINTS OF DEMARCATION 9
B. TRANSFER OF FACILITIES 10
C. EASEMENTS AND RIGHTS OF WAY 10
D. FACILITY MODIFICATIONS 10
SECTION 3: OPERATION AND MAINTENANCE 10
A. OPERATION AND MAINTENANCE ACTIVITIES 10
B. ACCESS TO FACILITIES 11
C. ODOR AND CORROSION CONTROL 11
1. RESPONSIBILITY 11
2. AGENCY COORDINATION FOR ODOR RESPONSE 11
D. DATA ACQUISITION 11
E. PROHIBITED DISCHARGE 12
F. NOTIFICATION 12
G. CONTACT LIST 13
SECTION 4: PLANNING COORDINATION 13
A. CAPACITY PLANNING 13
B. NEW CONNECTIONS 13
C. PLANNING UPDATES 13
SECTION 5: FINANCIAL CONSIDERATIONS 14
A. ACCOUNTING AND BILLING 14
B. RATES AND FEES 14
C. AUDITS 15
D. REPLACEMENTS AND REPAIRS 15
E. WASTEWATER SOURCE CONTROL PROGRAMS 15
F. OTHER COSTS 15

SECTION 6: SSO COORDINATION 16
A. INCIDENT OWNERSHIP 16
B. SSO RESPONSIBILITY 16
C. SSO REPORTING 16
SECTION 7: MUTUAL AID 17
A. EMERGENCY MUTUAL AID 17
B. RESOURCES 17
SECTION 8: ADHERENCE TO REGULATIONS 17
A. APPLICABLE LAWS AND REGULATIONS 17
B. SEWER ORDINANCES 17
1. SASD AND REGIONAL SAN ORDINANCES 17
2. CITY MUNICIPAL CODE 17
C. WASTEWATER DISCHARGE PRETREATMENT PROGRAM 18
SECTION 9: NOTICE 18
SECTION 10: MUTUAL INDEMNIFICATION 18
SECTION 11: INSURANCE 20
SECTION 12: AMENDMENTS 20
SECTION 13: ENTIRE AGREEMENT 20
SECTION 14: AGREEMENT TERM 20
SECTION 15: NO AGENCY 20

LIST OF EXHIBITS

EXHIBIT A – ROSEVILLE TO SASD FLOW (AREA 1) 22
EXHIBIT B – ROSEVILLE TO SASD FLOW (AREA 2) 23
EXHIBIT C – ROSEVILLE TO SASD FLOW (AREA 3) 24
EXHIBIT D – ROSEVILLE TO SASD FLOW (AREA 4) 25
EXHIBIT E – ROSEVILLE TO SASD FLOW (AREA 5) 26
EXHIBIT F – ROSEVILLE TO SASD FLOW (AREA 6) 27
EXHIBIT G – SASD TO ROSEVILLE FLOW (VERNON OAKS) 28

LIST OF TABLES

TABLE 2.1 – POINTS OF DEMARCATION (BY MH) 9
TABLE 2.2 – PARCEL NUMBERS FOR VERNON OAKS 9
TABLE 3.1 – CONTACT NUMBERS 13
TABLE 5.1 – PAYMENT SCHEDULE 14

INTRODUCTION

This WASTEWATER SERVICE BY CONTRACT AND OPERATING AGREEMENT AMONG THE SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT, THE SACRAMENTO AREA SEWER DISTRICT AND THE CITY OF ROSEVILLE is made this 3rd day of August, 2016, by and between SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT, a sanitation district formed pursuant to and operating under the authority of the County Sanitation District Act commencing at Health and Safety Code Section 4700, hereinafter referred to as "Regional San," SACRAMENTO AREA SEWER DISTRICT, a sanitation district formed pursuant to, and operating under the authority of the County Sanitation District Act commencing at Health and Safety Code Section 4700, hereinafter referred to as "SASD," and CITY OF ROSEVILLE, a municipal corporation, hereinafter referred to as "CITY."

RECITALS

WHEREAS, wastewater from some sewers within the CITY, as shown in Exhibits A through F, flows into the SASD sewer system, then through the Regional San sewer system, and is then treated at Regional San's Sacramento Regional Wastewater Treatment Plant (SRWTP); and

WHEREAS, wastewater from some sewers within the SASD service area, as shown in Exhibit G, flows into the CITY sewer system and is then treated at the CITY's Dry Creek Wastewater Treatment Plant; and

WHEREAS, the intent of this Agreement is to meet regulatory requirements and to provide a basis for Regional San, SASD, and the CITY to work together to provide sewer service to users, establish operation and maintenance responsibilities, determine financial billing responsibilities, define system ownership, ensure ordinance compliance, outline rates and fees; and

WHEREAS, Section 56133 (a) of the Cortese-Knox-Hertzberg Act which establishes procedures for local government changes of organization, and Section 56133 (e) allows for contracts or agreements solely involving two or more public agencies are exempt from requiring approval from Local Agency Formation Commission approval; and

WHEREAS, the CITY collects rates and fees for services provided to the Vernon Oaks area, which resides inside the SASD and Regional San Service Areas; and

WHEREAS, the CITY collects rates and fees for services provided to customers inside the CITY's Service Area that are connected to SASD and Regional San; and

WHEREAS, this Agreement creates a service by contract between Regional San, SASD, and the CITY.

NOW, THEREFORE, in consideration of the mutual promises hereinafter set forth and acting pursuant to Section 4760 of the Health and Safety Code of the State of California and the Joint Exercise of Powers Act of said State, Regional San, SASD and the CITY agree as follows:

SECTION 1: DEFINITIONS

Within this Agreement, the following words shall have the meanings specified below.

CITY: The City of Roseville

CITY ENVIRONMENTAL UTILITIES DIRECTOR: The Director of Wastewater, Water, and Solid Waste Utilities for the City of Roseville, or successor.

COLLECTION SYSTEM OPERATIONS NOTICE (CSON) PROGRAM: A program implemented by the Regional San Wastewater Source Control Section (WSCS) to provide notification and effective communication of pertinent information for planned sewer system events such as chemical additions, large scale cleaning, construction plugs, and various routine operational, maintenance, and construction activities that may have significant impacts on downstream sewer systems and the Sacramento Regional Wastewater Treatment Plant. These "significant impacts" are further described within the CSON program.

CUSTOMER: The person, agency, or entity paying for sewer service.

DISTRICT ENGINEER: The District Engineer for Regional San and SASD.

DISTRICT SEWER SYSTEM: The facilities owned by Regional San or SASD used for collecting, conveying, pumping, treating, and disposing of wastewater and residuals.

EFFECTIVE DATE: The date that this Agreement is approved by the governing bodies of Regional San, SASD and the CITY and executed by all parties.

EQUIVALENT SINGLE-FAMILY DWELLING (ESD) or EQUIVALENT DWELLING UNIT (EDU): A parameter used to identify the sewage discharge from a single-family detached residential dwelling.

INCIDENT RESPONDER: An individual within SASD, Regional San or the CITY who is in charge of an SSO at any given time.

NPDES: National Pollutant Discharge Elimination System

O&M (M&O): Operations and Maintenance

OWNERSHIP RESPONSIBILTIES: Includes all the responsibilities of ownership without actually owning the property or facility including but not limited to operation, maintenance, replacement, repair, rate and fee collection, and Proposition 218 notification.

POINT OF DEMARCATION: The point in the sanitary sewer where ownership, operation, and maintenance transitions from one agency to another.

RATE: Monthly rate that all users of the sewer collection system must pay to use the sewer collection system.

REGIONAL SAN: Sacramento Regional County Sanitation District

REGIONAL SAN CONSOLIDATED ORDINANCE: An ordinance, adopted on March 23, 2016, and as subsequently amended, that relates to the operation and regulatory powers of Regional San.

RESPONSIBLE AGENCY: With respect to Sanitary Sewer Overflow (SSO), the agency ultimately responsible for responding, cleanup, mitigation, and reporting of the SSO.

SACRAMENTO REGIONAL WASTEWATER TREATMENT PLANT (SRWTP): Regional San's treatment facility located at 8521 Laguna Station Road, Elk Grove, CA 95758.

SANITARY SEWER or SEWER: A pipe or conduit (including pumping facilities and in-line treatment and control facilities) that receives and carries wastewater. This definition does not include Regional San treatment facilities.

SANITARY SEWER OVERFLOW (SSO): An unplanned overflow, spill, release, or discharge of untreated or partially treated wastewater from a sewer collection system, as defined in the most current WDR.

SASD: Sacramento Area Sewer District

SASD SEWER ORDINANCE: An ordinance, adopted October 25, 2013, and as subsequently amended, that relates to the operation and regulatory powers of SASD.

SEWER IMPACT FEE (FEE): Fee to pay for user's proportionate share of sewer capacity and associated costs.

SEWER SYSTEM MANAGEMENT PLAN (SSMP): Document that provides SASD, Regional San, or the City a system-wide living management plan for the operation, maintenance, expansion, repair and replacement of the sewer collection system. The intent of this document is to be the day-to-day working management plan that also meets the requirements of addressing the mandatory elements defined by the State Water Resources Control Board, Waste Discharge Requirements for sanitary sewer systems, most current edition.

SPWA: South Placer Wastewater Authority

STANDARD OPERATING PROCEDURE (SOP): The published or prescribed typical methodology for completing a task.

USER: Any person or entity that discharges waste directly or indirectly to the sewer collection system, causes, or allows such discharge.

WASTEWATER: The liquid and water-carried wastes from dwellings, commercial buildings, industrial facilities, institutions, and other sources, whether treated or untreated, which enter or are permitted to enter the sanitary sewer. This term also includes ground, surface, and storm waters comingled with liquid and water-carried wastes as may be present in the sewer system.

WASTEWATER SOURCE CONTROL SECTION (WSCS): A section within Regional San that protects the sewage collection and treatment facilities of the Sacramento region by controlling pollutant discharges to the sewer system. WSCS works to reduce the discharge of pollutants to the sewer by educating businesses and the general public on the waste reduction, management, and appropriate disposal.

WDR: Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Order No. 2006-0003-DWQ, promulgated by the State Water Resources Control Board (SWRCB), and subsequent revisions.

SECTION 2: FACILITIES

A. POINTS OF DEMARCATION

Exhibits A through F identify 6 locations where wastewater flows from the City to SASD sewers. The service area defines which agency (SASD or the CITY) is responsible for operation and maintenance of the manhole ("owner" in Table 2.1) at the point of demarcation. Table 2.1 shows the manholes that establish the point of demarcation for the sewers that flow from the City to SASD:

Table 2.1 – Points of Demarcation (By MH)

Area	Roseville MH # (SASD MH #)	Owner
1	A06-282	Roseville
2	A06-281	Roseville
3	A05-145 (216-003-007)	Roseville
4	A04-154 (204-001-002)	SASD
5	A06-245	Roseville
6	A04-155 (204-001-001)	SASD

Exhibit G identifies an area, known as Vernon Oaks, where wastewater flows from the SASD and Regional San service area into the CITY service area then to the Dry Creek Wastewater Treatment Plant. Table 2.2 identifies parcels within the SASD and Regional San service area that are customers and users of the CITY sewer system and Dry Creek Wastewater Treatment Plant.

Table 2.2 – Parcel Numbers for Vernon Oaks

209-0730-001 (#647)	209-0730-009 (#631)
209-0730-002 (#645)	209-0730-010 (#629)
209-0730-003 (#643)	209-0730-011(#627)
209-0730-004 (#641)	209-0730-012 (#625)
209-0730-005 (#639)	209-0730-013 (#623)
209-0730-006 (#637)	209-0730-014 (#621) Lateral located in City of Roseville
209-0730-007 (#635)	209-0730-015 (#619) Lateral located in City of Roseville
209-0730-008 (#633)	209-0730-016 (#615) Lateral located in City of Roseville
209-0047-012 (#7241)	

For properties listed in Table 2.2 and shown on Exhibit G, the CITY maintains the mainline and laterals for this area. The CITY is responsible for operation and maintenance, and all associated responsibilities of ownership for sewer service and the sewer pipelines that serve these parcels.

B. TRANSFER OF FACILITIES

If a facility is to be transferred by mutual agreement from one agency to the other, a transfer agreement will be prepared, including a description of the facilities and real property rights to be transferred, a description of transferred operation and maintenance responsibilities, and a clear description of financial obligations.

C. EASEMENTS AND RIGHTS OF WAY

For access to properties and the sanitary sewer system considered by this agreement, Regional San, SASD, and the CITY agree that each agency, as an agent of the other, is authorized to use each other's existing easements or rights of way as reasonably necessary to carry out provisions of this Agreement, unless precluded by law or contract. If an easement or right of way is situated in a public street or highway, the laws of the State of California will govern its joint usage in the absence of a specific agreement. All agencies agree to follow each other's SOP for notification.

D. FACILITY MODIFICATIONS

Any physical modifications to Regional San, SASD, or CITY sanitary sewer systems that could affect compliance with the current waste discharge requirements, NPDES permits, or other applicable standards; significantly change the rate of flow; or materially affect the operation of any other Regional San, SASD, or CITY sanitary sewer systems must be coordinated between all parties to this agreement.

SECTION 3: OPERATION AND MAINTENANCE

The boundaries of ownership, operation, and maintenance responsibility of sewer facilities is at the point of demarcation as described in Section 2 and shown in Exhibits A through F. Ownership, operation and maintenance responsibilities for sanitary sewer systems and service to parcels located within the Vernon Oaks area (Exhibit G) will be the responsibility of the CITY.

A. OPERATION AND MAINTENANCE ACTIVITIES

There is a potential for maintenance activities conducted by Regional San, SASD, or the CITY to cause temporary operational impacts within each other's sanitary sewer systems. Regional San, SASD, and the CITY will work together to implement measures that mitigate or minimize operational impacts.

B. ACCESS TO FACILITIES

SASD and the CITY will allow reasonable access to each other's sanitary sewer systems, subject to the operational limitations of the facility owner. The CITY will request access to SASD facilities through the SASD access permit process, as described in Section 3.4 of the SASD Ordinance. SASD will coordinate access to the CITY sanitary sewer facilities with the Environmental Utilities Collections Maintenance Division. See Section G for contact information.

C. ODOR AND CORROSION CONTROL

1. RESPONSIBILITY

Each agency is responsible for odor and corrosion control in their sewer system.

2. AGENCY COORDINATION FOR ODOR RESPONSE

SASD and the CITY will coordinate responses to odor complaints near the points of demarcation.

When an agency receives an odor complaint, it will:

1. Investigate to identify possible sources of the odor complaint within a response time consistent with their standard operating procedures.
2. If it is determined that the agency receiving the complaint is the responsible agency, it will mitigate the odor issue as necessary to remedy the issue.
3. If it is suspected that the other agency may be responsible for the odor complaint, the agency receiving the complaint will immediately contact the other agency.
4. Until SASD and the CITY agree which agency is the responsible agency, all agencies will remain engaged in finding a solution and work collaboratively to resolve any odor issues.

D. DATA ACQUISITION

Regional San, SASD, and the CITY, may request existing data and information for planning, monitoring, and/or operational purposes from each other. This data and information (excluding any privileged data or information) will be made available within a reasonable timeframe.

E. PROHIBITED DISCHARGE

SASD and the CITY will be responsible for controlling waste discharges into their system that significantly differ from each other's ordinances or that may cause harm to each other's sanitary sewer systems. More information on prohibited discharges can be found in *Section 2.4, Sewer Use, Prohibited Discharges* of the SASD Ordinance, *Chapter 14.12, Regulation of Sewer Use, Section 14.12.050 Use of Public Sewers* in the City of Roseville Municipal Code, and *Section 2.5 Sewer Use, Regulations* of the Regional San Consolidated Ordinance.

F. NOTIFICATION

SASD and the CITY shall notify each other as soon as either agency becomes aware of any serious ordinance or municipal code violation or an un-remedied violation that could cause harm or otherwise negatively affect the sanitary sewer system. Ordinance and municipal code enforcement will be coordinated between Regional San, SASD, and the CITY.

Each agency will notify the other through proper notification processes of any planned operational issues or any future operation or maintenance activities that may be detrimental to safe operations of each other's sanitary sewer system (see Section G for contact information).

The CITY will provide a minimum 48 hours notice to SASD and follow requirements of the Regional San Collection System Operations Notice (CSON) program for planned activities conducted in the CITY sanitary sewer system that could impact the District sewer system. SASD agrees to provide a minimum of 48 hours notice to the CITY and follow CITY requirements for any planned activity that could impact the CITY or SPWA infrastructure or CITY treatment plant operations.

As a condition of authorizing any temporary discharge of nondomestic wastewater to the sanitary sewer system, the Regional San, SASD, and the CITY will require the discharger to obtain approval from the Regional San Wastewater Source Control Section and the CITY's Industrial Waste Program respectively.

Notifications of any SSO's will be in accordance with Section 6 of this Agreement and all regulatory requirements.

G. CONTACT LIST

The point of contact for each agency will be the following:

Table 3.1 – Contact Numbers

SASD Dispatch	(916) 875-6730 10060 Goethe Road Sacramento, CA 95827
Regional San Plant Control Center	(916) 875-9400 or (916) 875-9406 8521 Laguna Station Road, Elk Grove, CA 95758
City of Roseville	(916) 746-1890 During normal business hours (916) 774-5750 after hours 1530-0700 1800 Booth Road Roseville, CA 95747

SECTION 4: PLANNING COORDINATION

A. CAPACITY PLANNING

Capacity demands may change depending on future development needs. Each agency will coordinate pertinent planning changes to ensure that sewer service needs are met.

B. NEW CONNECTIONS

This agreement addresses only areas identified in exhibits A through G. New connections planned within areas identified in exhibits A through G shall be coordinated between all affected agencies. New connections will be permitted only when adequate capacity is available in the receiving sanitary sewer system. Neither Regional San, SASD, nor the CITY is responsible for increasing capacity within its sewer system to accommodate flow from new connections outside its service area. Any new connections planned from areas outside those identified in exhibits A through G, or new connections that require the other agency to increase sewer capacity, will require a separate agreement or an amendment to this agreement.

C. PLANNING UPDATES

Regional San, SASD, and the CITY will coordinate with each other prior to creating or making changes to facilities that impact the connections to each other's sanitary sewer

systems. Increase in sanitary sewer system flow that affects capacity requires approval from the receiving agency.

SECTION 5: FINANCIAL CONSIDERATIONS

A. ACCOUNTING AND BILLING

Regional San, SASD, and the CITY agree to maintain records that confirm billing and transfers of billed amounts representative of the number of users being provided service and to make records available when requested.

Regional San, SASD, and the CITY will remit monthly service charge payments to each other on a semiannual basis (twice a year) as follows:

Table 5.1 – Payment Schedule

Period Covered	Payment due no later than
July 1 through December 31	February 28
January 1 through June 30	August 31

SASD and the CITY will absorb the following costs incurred providing service to customers for which collection and treatment service is provided by the other party:

1. Costs incidental to collection and transmittal of service charge payments; and
2. Costs attributable to uncollectable debts or service billings

B. RATES AND FEES

Properties located in the CITY service area, shown in Exhibits A through F, which have sewers connected to the Regional San and SASD sewer system will be subject to prescribed rates and fees for use and connection to the Regional San and SASD sewer systems. These rates and fees are governed by the Regional San and SASD ordinances and adopted by their respective Boards.

The CITY will pay 50% of SASD's and 100% of Regional San's rates for their customers using the SASD and Regional San sewer systems. The CITY will pay 100% of both SASD and Regional San's sewer impact fees for their customers that will connect to District sewer system. As applicable, Regional San or SASD will notify the CITY as required by Proposition 218, of any proposed rate or fee changes. The CITY will be responsible for notifying the CITY customers that use the District sewer system for any CITY proposed rate or fee changes.

For the Vernon Oaks area (Exhibit G), the CITY will assume all ownership responsibilities for the collection of rates and fees associated with providing sewer collection and treatment for the properties in the Regional San and SASD Service Area with sanitary sewer systems connected to and served by the CITY sanitary sewer system. The City will comply with Proposition 218 requirements for changes to these properties.

C. AUDITS

Regional San, SASD, and the CITY have the authority to audit, or appoint auditors, as necessary to examine the financial records of the other agencies to determine if rates and fees have been correctly and timely collected and appropriate amount has been remitted by the other agency in accordance with the terms of this agreement. Regional San, SASD, and the CITY will make available all requested records and will assist the auditors in their efforts.

D. REPLACEMENTS AND REPAIRS

The cost and performance of all replacement, betterments, and repairs, and any other costs for items not specifically defined in this Agreement will be the responsibility of the facility owner.

E. WASTEWATER SOURCE CONTROL PROGRAMS

Currently, Regional San and the CITY each administer separate mandated Federal Pretreatment Programs and local source control programs. Subject to applicable approval requirements of each agency, the District Engineer and the City Environmental Utilities Director may enter into agreements covering the reimbursement to the City or Regional San for the CITY's or Regional San's fair and reasonable share of their respective staff time and resources dedicated to the administration of their respective source control programs as related to this agreement.

F. OTHER COSTS

Subject to each agency's approval requirements, Regional San, SASD, or the CITY may enter into future agreements to reimburse costs for other services provided. Expenses chargeable for services provided will be fixed in nature and will provide full reimbursement for all costs, whatever the nature incurred in providing such services. The agency providing the services will be entitled to recover actual loaded rate costs.

SECTION 6: SSO COORDINATION

A. INCIDENT OWNERSHIP

When an SSO is reported, the agency receiving the notification will follow their own SSO Emergency Response Plan included in their Sewer System Management Plan (SSMP). The Responder will investigate the SSO and take all appropriate steps to respond in accordance with that agency's SSO Standard Operating Procedures (SOP). If it is determined that the other agency is the responsible party, a transfer of the incident will be made by calling the other agency's point of contact (Section 3-G). The responsible agency will assume responsibility as soon as they are contacted. Date and time of changes in Incident Responder will be communicated verbally and documented by both initial and relieving Incident Responder.

As the initial responder, both CITY and SASD agree to take all measures possible to contain and minimize a spill. As appropriate, the initial incident responder will remain onsite until responsibility can be determined and transfer of incident ownership can occur. To the extent that staff in one agency can help the other agency without jeopardizing the functioning of their own systems, these efforts will continue until, in the judgment of the Responsible Agency, the Responsible Agency has mobilized to the site with all necessary equipment and personnel to continue SSO abatement.

Once notified the Responsible Agency agrees to mobilize all necessary equipment and personnel in a timely manner.

Costs incurred by the initial Incident Responder when providing this service for the Responsible Agency will be reimbursed as outlined in Section 5.

B. SSO RESPONSIBILITY

The agency that is responsible for operation and maintenance of the sanitary sewer system is also responsible for controlling and correcting SSO's originating in that sanitary sewer system. An agency's assumption of the role of Responder, with respect to an SSO, will not alone make the agency responsible for the SSO. Responsibility will be determined based upon OWNERSHIP of the location of the blockage or failure in the pipe, not the SSO appearance point. Following response activities, Regional San, SASD, and the CITY agree to investigate and share information resulting from the incident investigation until the cause and location of the blockage or failure causing the SSO is determined.

C. SSO REPORTING

The Responsible Agency will report their SSO in accordance with the most current regulations.

SECTION 7: MUTUAL AID

A. EMERGENCY MUTUAL AID

Agencies may provide emergency mutual aid to each other. To the extent that staff in one agency can help the other agency without jeopardizing the functioning of their own systems, both agencies will share staff and resources for the benefit of the Sacramento Area and South Placer County regions. The recipient of the services will reimburse the other party pursuant to Section 5 of this Agreement.

B. RESOURCES

When one agency loans resources to another, the provider will keep records for the labor hours, equipment, and expenses incurred. Costs incurred will be reimbursed as outlined in Section 5.

SECTION 8: ADHERENCE TO REGULATIONS

A. APPLICABLE LAWS AND REGULATIONS

Regional San, SASD, and the CITY agree to operate all sanitary sewer systems in conformance with all pertinent laws and regulations.

B. SEWER ORDINANCES

1. SASD AND REGIONAL SAN ORDINANCES

SASD and Regional San's ordinances may be amended periodically, including changes that regulate the use of public sewers. The CITY code will ensure that all discharges to the public sewer system are in general compliance or do not result in a significant violation of the applicable SASD and Regional San ordinances and prohibit the discharge of any substance prohibited by the SASD and Regional San ordinances. The CITY code will also enforce the provisions in the SASD and Regional San ordinances that relate to pretreatment of industrial wastes.

2. CITY MUNICIPAL CODE

The CITY Municipal Code may be amended periodically, including changes that regulate the use of public sewers. The SASD and Regional San Ordinances will ensure that all discharges to the public sewer system are in general compliance or do not result in a significant violation of the applicable Municipal Code and prohibit the discharge of any substance prohibited by the CITY Municipal Code. The SASD

and Regional San Ordinances will also enforce the provisions in the CITY Municipal Code that relate to pretreatment of industrial wastes.

C. WASTEWATER DISCHARGE PRETREATMENT PROGRAM

The Regional San Wastewater Source Control Section will issue wastewater discharge permits under the Regional San Pretreatment Program to the CITY for users of the District sewer system within the City of Roseville. The CITY grants Regional San the authority to administer its pretreatment program to ensure users connected to the SASD and Regional San systems maintain compliance with the Regional San Pretreatment Program.

The CITY Industrial Waste Section will issue wastewater discharge permits under the CITY Pretreatment Program to Regional San for users of the CITY sanitary sewer system users in the Regional San service area. Regional San grants the CITY the authority to administer its pretreatment program to ensure that users connected to the CITY systems maintain compliance with the CITY Pretreatment Program.

SECTION 9: NOTICE

Unless indicated otherwise herein, all notices, invoices, payments, statements, or other writing authorized or required by this Agreement may be delivered personally, or sent in the United States mail, postage prepaid, or sent by electronic mail if the recipient confirms receipt, and addressed to the respective parties as follows:

To CITY:
Wastewater Utilities Manager
City of Roseville
2005 Hilltop Circle
Roseville, CA 95747

To Regional San and SASD:
District Engineer
Sanitation Districts Agency
10060 Goethe Road
Sacramento, CA 95827

SECTION 10: MUTUAL INDEMNIFICATION

The CITY shall defend, indemnify and hold harmless Regional San, its Board of Directors, officers, directors, agents, employees, volunteers, and assigns from and against all demands, claims, actions, liabilities, losses, damages, injuries to or death of persons, regulatory fines and/or penalties imposed by any local, state, or federal authority for breaches of such authority's regulations, and costs, including reasonable attorneys' fees, to the extent arising out of or resulting from the negligent or intentional acts or omissions of the CITY, it's City Council,

officers, directors, agents, employees, assigns, contractors, or volunteers in connection with this Agreement.

The CITY shall defend, indemnify and hold harmless SASD, its Board of Directors, officers, directors, agents, employees, volunteers, and assigns from and against all demands, claims, actions, liabilities, losses, damages, injuries to or death of persons, regulatory fines and/or penalties imposed by any local, state, or federal authority for breaches of such authority's regulations, and costs, including reasonable attorneys' fees, to the extent arising out of or resulting from the negligent or intentional acts or omissions of the CITY, it's City Council, officers, directors, agents, employees, assigns, contractors, or volunteers in connection with this Agreement.

SASD shall defend, indemnify, and hold harmless the CITY, its City Council, officers, directors, agents, employees, volunteers, and assigns from and against all demands, claims, actions, liabilities, losses, damages, injuries to or death of persons, regulatory fines and/or penalties imposed by any local, state, or federal authority for breaches of such authority's regulations, and costs, including reasonable attorney's fees, to the extend arising out of or resulting from the negligent or intentional acts or omissions of the SASD Board of Directors, officers, directors, agents, employees, assigns, contractors, or volunteers in connection with this Agreement.

Regional San shall defend, indemnify, and hold harmless the CITY, its City Council, officers, directors, agents, employees, volunteers, and assigns from and against all demands, claims, actions, liabilities, losses, damages, injuries to or death of persons, regulatory fines and/or penalties imposed by any local, state, or federal authority for breaches of such authority's regulations, and costs, including reasonable attorney's fees, to the extend arising out of or resulting from the negligent or intentional acts or omissions of the Regional San Board of Directors, officers, directors, agents, employees, assigns, contractors, or volunteers in connection with this Agreement.

It is the intention of Regional San, SASD and the CITY that, where comparative fault is determined to have been contributory, principles of comparative fault will be followed and to the extent permitted by law each party shall bear the proportionate cost of any damage attributable to the fault of that party, its officers, directors, agents, employees, assigns, contractors and volunteers.

This indemnity shall not be limited by the types and amounts of insurance or self-insurance maintained by the Parties.

Nothing in this Indemnity shall be construed to create any duty to, any standard of care with reference to, or any liability or obligation, contractual or otherwise, to any third party.

The provisions of this Indemnity shall survive the expiration or termination of the Agreement.

SECTION 11: INSURANCE

Each party, at its sole cost and expense shall carry insurance or shall self-insure its activities in connection with this Agreement and obtain, keep in force, and maintain insurance or equivalent programs or self-insurance for general liability, worker's compensation, property, professional liability, environmental liability, and business automobile liability adequate to cover its potential liabilities hereunder. Each party agrees to provide the other party thirty (30) days advance written notice of any cancellation, termination, or lapse of any of the insurance of self-insurance coverage. Failure to maintain insurance as required in this Agreement is a material breach of contract and may be grounds for termination of this Agreement.

SECTION 12: AMENDMENTS

Modifications or amendments affecting this Agreement shall be in writing and executed by all parties.

SECTION 13: ENTIRE AGREEMENT

This instrument constitutes the entire Agreement between Regional San, SASD, and the CITY concerning the subject matter hereof.

SECTION 14: AGREEMENT TERM

This Agreement shall become effective on the date hereof and will continue in full force and effect until terminated or amended upon mutual consent of both Regional San, SASD, and the CITY.

SECTION 15: NO AGENCY

Except as otherwise expressly provided in this Agreement, neither party, nor any of its officers, agents, or employees, volunteers or contractors, shall for any reason be considered agents, nor authorized to act as agents of the other party, with respect to the performance of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year hereinabove first written.

SACRAMENTO AREA SEWER DISTRICT and SACRAMENTO REGIONAL SANITATION DISTRICT sanitation districts formed pursuant to and operating under the authority of the County Sanitation District Act commencing at Health and Safety Code Section 4700

RECOMMENDED FOR APPROVAL:
By: Prabhaka Somavarapu
District Engineer

APPROVED AS TO FORM:
By: SEE ATTACHED COUNTERPART(S)
District Counsel

ATTEST:
By: SEE ATTACHED COUNTERPART(S)
Clerk of the Board of Supervisors of Sacramento County, California, and Ex-Officio Secretary of the Board of Directors

By: SEE ATTACHED COUNTERPART(S)
Chair, Board of Directors

CITY OF ROSEVILLE, a municipal corporation

RECOMMENDED FOR APPROVAL:
By: see attached counterpart
Environmental Utilities Director

APPROVED AS TO FORM:
By: see attached counterpart
City Attorney

ATTEST:
By: see attached counterpart
City Clerk

By: see attached counterpart
City Manager

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year hereinabove first written.

SACRAMENTO AREA SEWER DISTRICT and SACRAMENTO REGIONAL SANITATION DISTRICT sanitation districts formed pursuant to and operating under the authority of the County Sanitation District Act commencing at Health and Safety Code Section 4700

RECOMMENDED FOR APPROVAL:
By: SEE ATTACHED COUNTERPART(S)

District Engineer

APPROVED AS TO FORM:
By:

District Counsel

ATTEST:
By: SEE ATTACHED COUNTERPART(S)

Clerk of the Board of Supervisors of Sacramento County, California, and Ex-Officio Secretary of the Board of Directors

By: SEE ATTACHED COUNTERPART(S)

Chair, Board of Directors

CITY OF ROSEVILLE, a municipal corporation

RECOMMENDED FOR APPROVAL:
By:

Environmental Utilities Director

APPROVED AS TO FORM:
By: Robert R Schmitt

City Attorney

ATTEST:
By: Sonia Orozco

City Clerk

By:

City Manager

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year hereinabove first written.

SACRAMENTO AREA SEWER DISTRICT and SACRAMENTO REGIONAL SANITATION DISTRICT sanitation districts formed pursuant to and operating under the authority of the County Sanitation District Act commencing at Health and Safety Code Section 4700

RECOMMENDED FOR APPROVAL:
By: SEE ATTACHED COUNTERPART(S)

District Engineer

APPROVED AS TO FORM:
By: SEE ATTACHED COUNTERPART(S)

District Counsel

ATTEST:
By:

Clerk of the Board of Supervisors of Sacramento County, California, and Ex-Officio Secretary of the Board of Directors

By:

Chair, Board of Directors

CITY OF ROSEVILLE, a municipal corporation

RECOMMENDED FOR APPROVAL:
By:

see attached counterpart
Environmental Utilities Director

APPROVED AS TO FORM:
By:

see attached counterpart
City Attorney

ATTEST:
By:

see attached counterpart
City Clerk

By:

see attached counterpart
City Manager

ATTACHMENT C

EXHIBIT A – ROSEVILLE TO SASD FLOW (AREA 1)

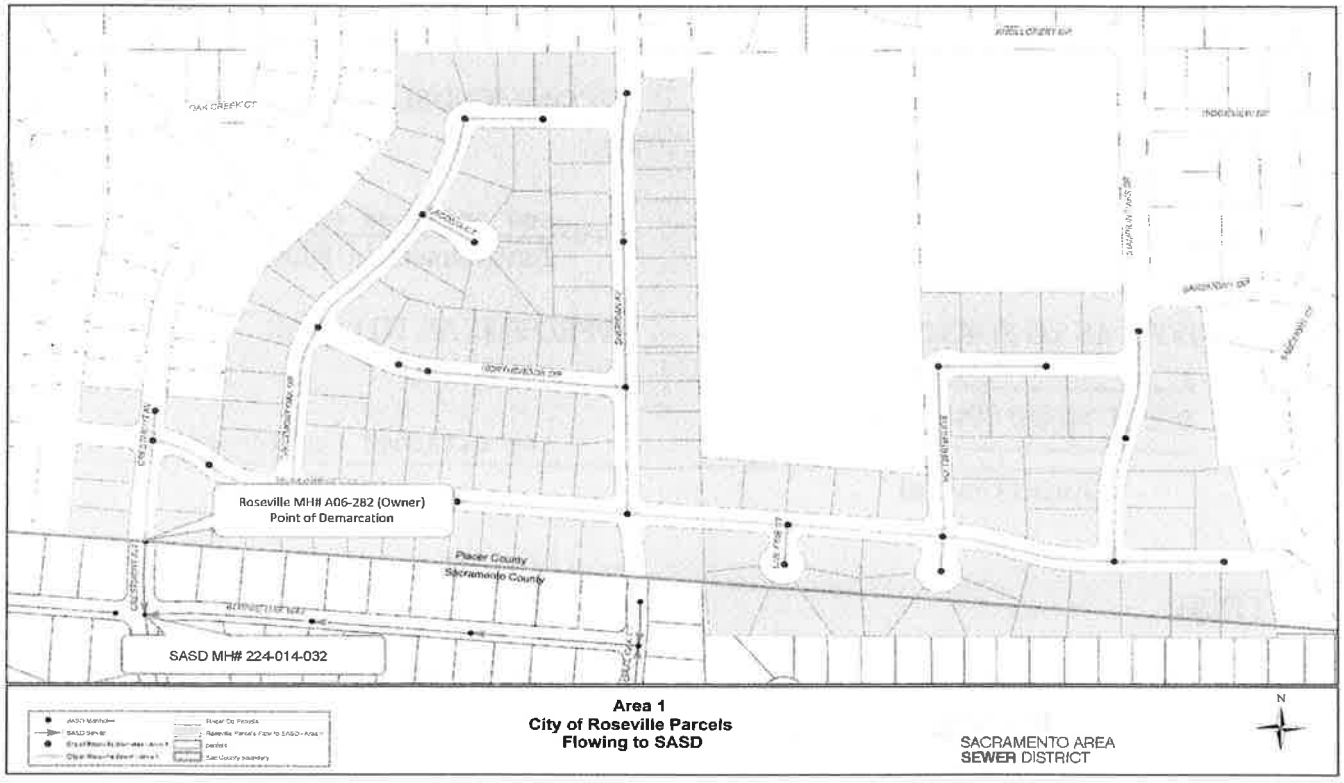


EXHIBIT B – ROSEVILLE TO SASD FLOW (AREA 2)

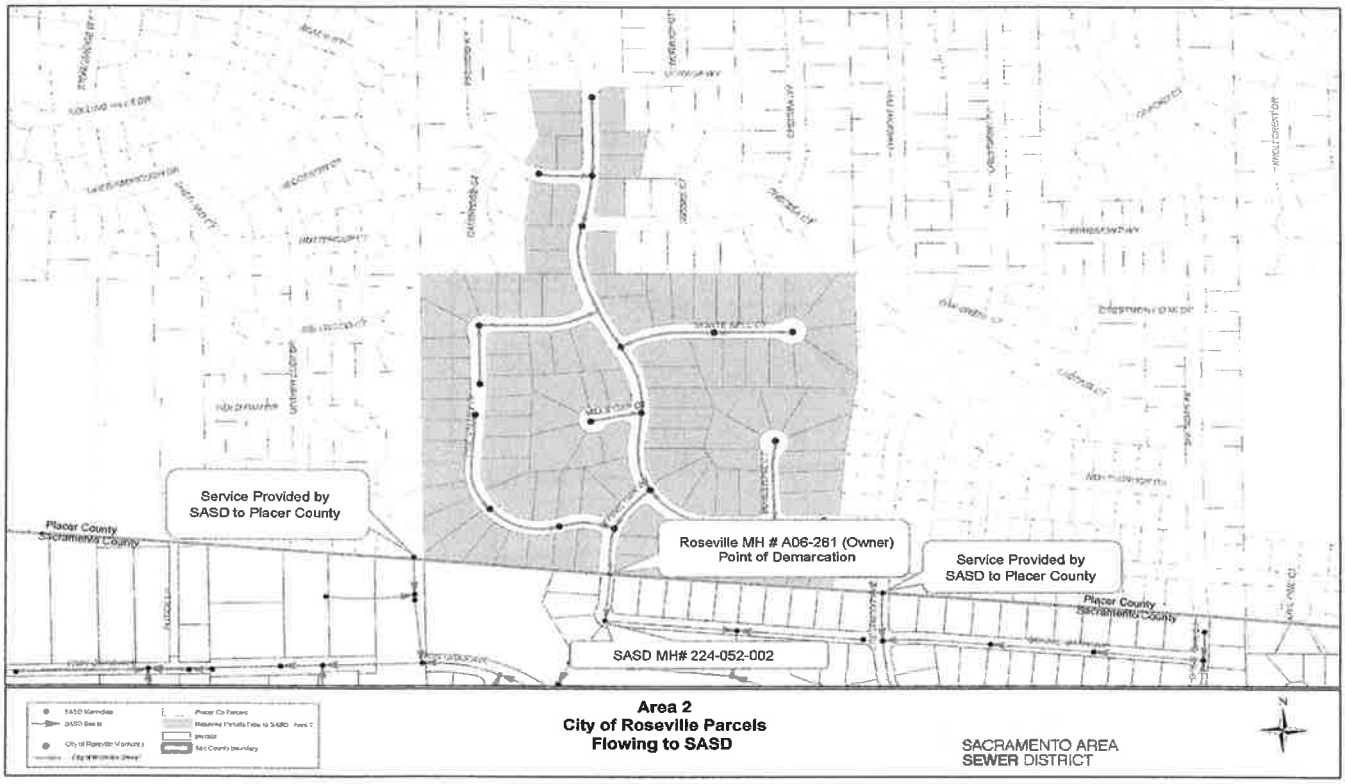


EXHIBIT C – ROSEVILLE TO SASD FLOW (AREA 3)

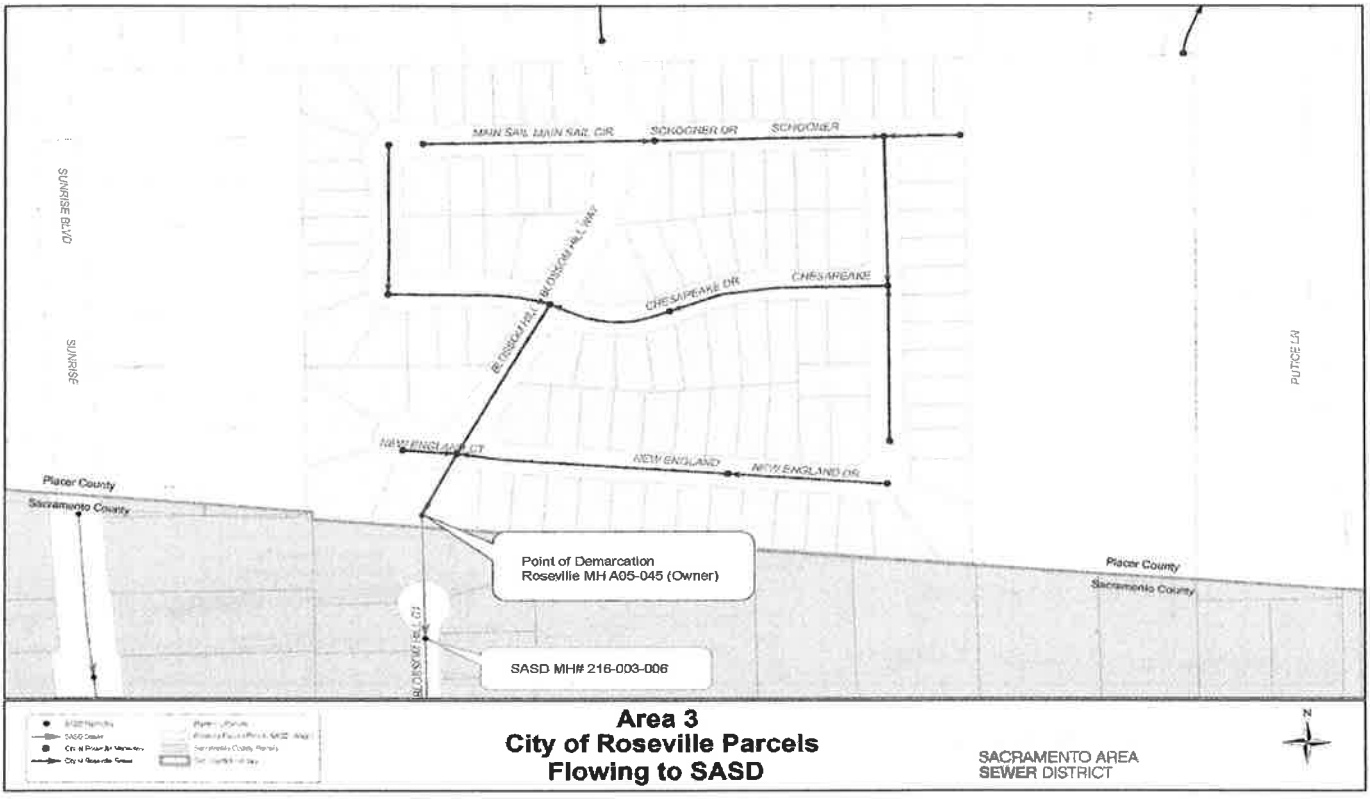


EXHIBIT D – ROSEVILLE TO SASD FLOW (AREA 4)

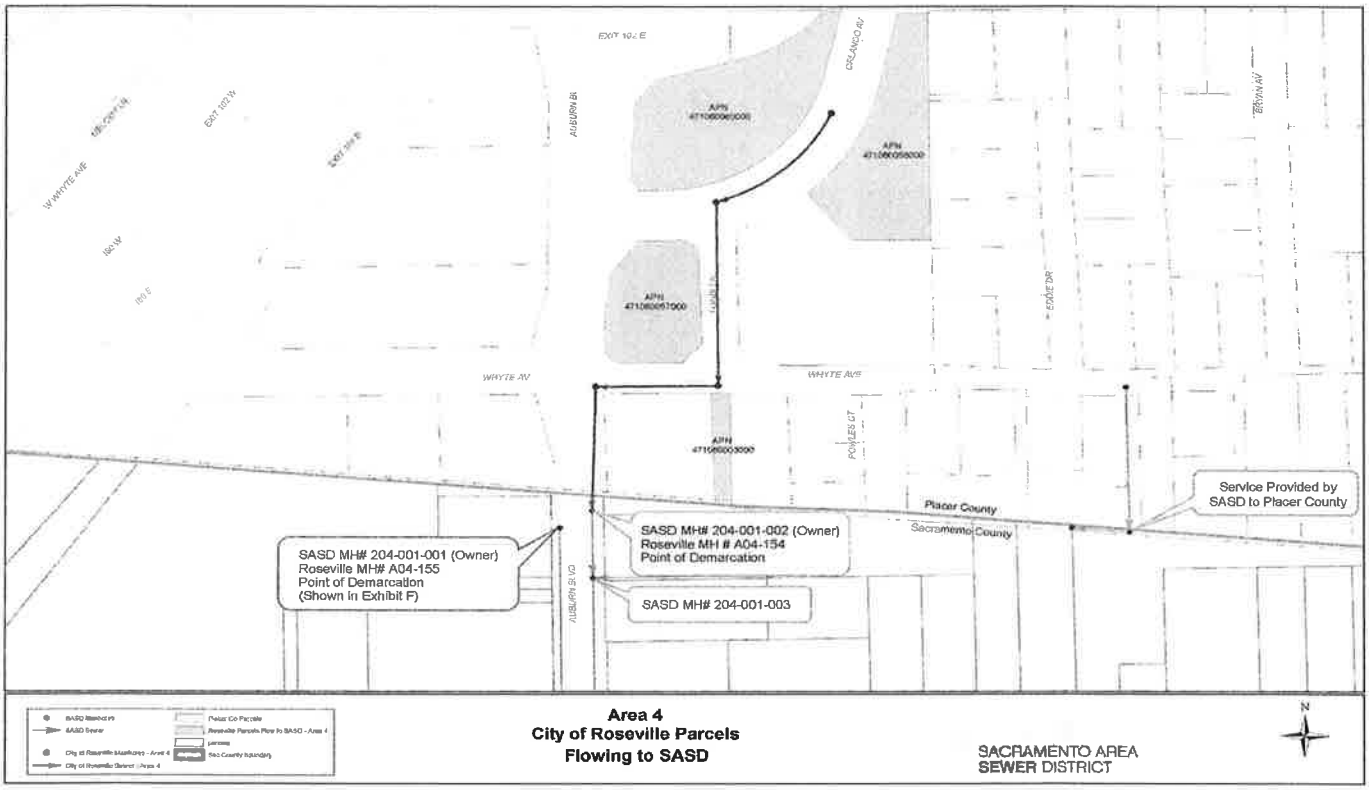


EXHIBIT E – ROSEVILLE TO SASD FLOW (AREA 5)

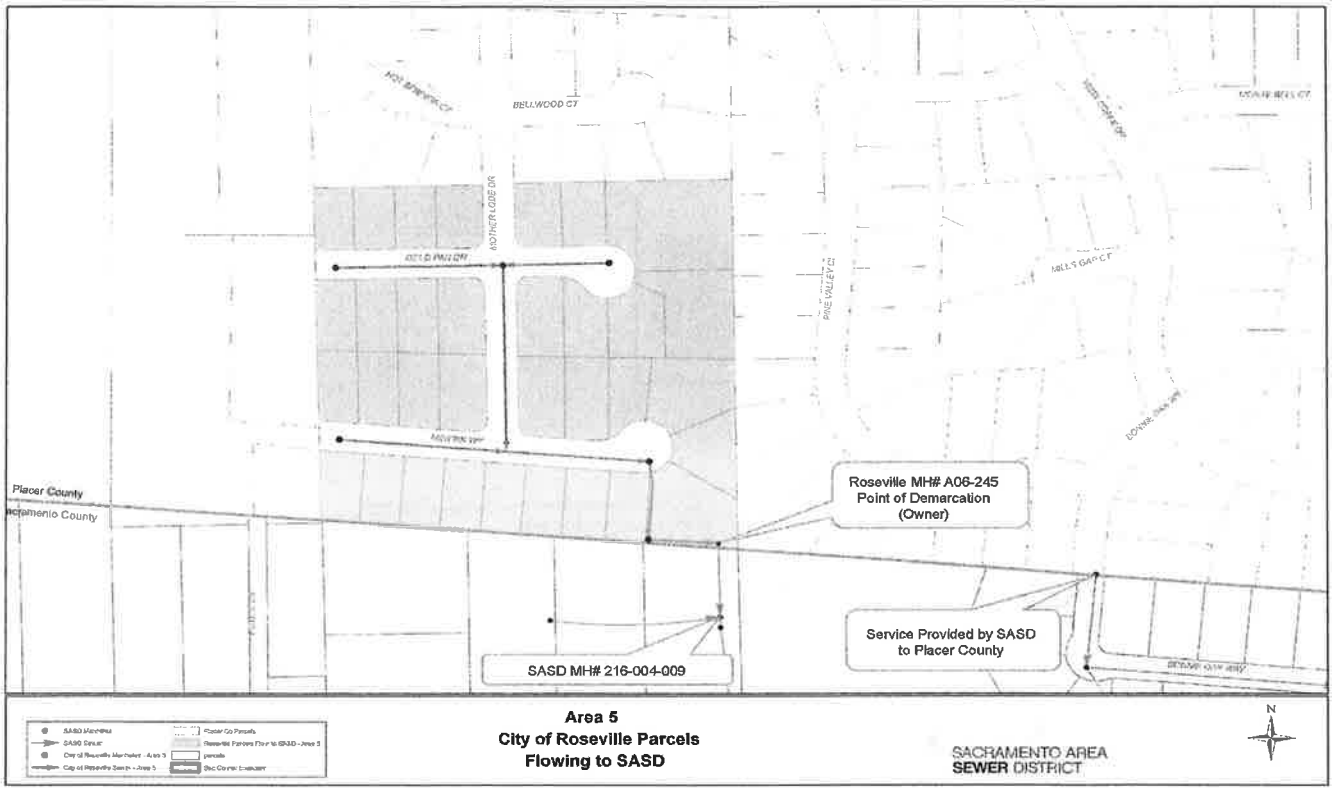


EXHIBIT F – ROSEVILLE TO SASD FLOW (AREA 6)

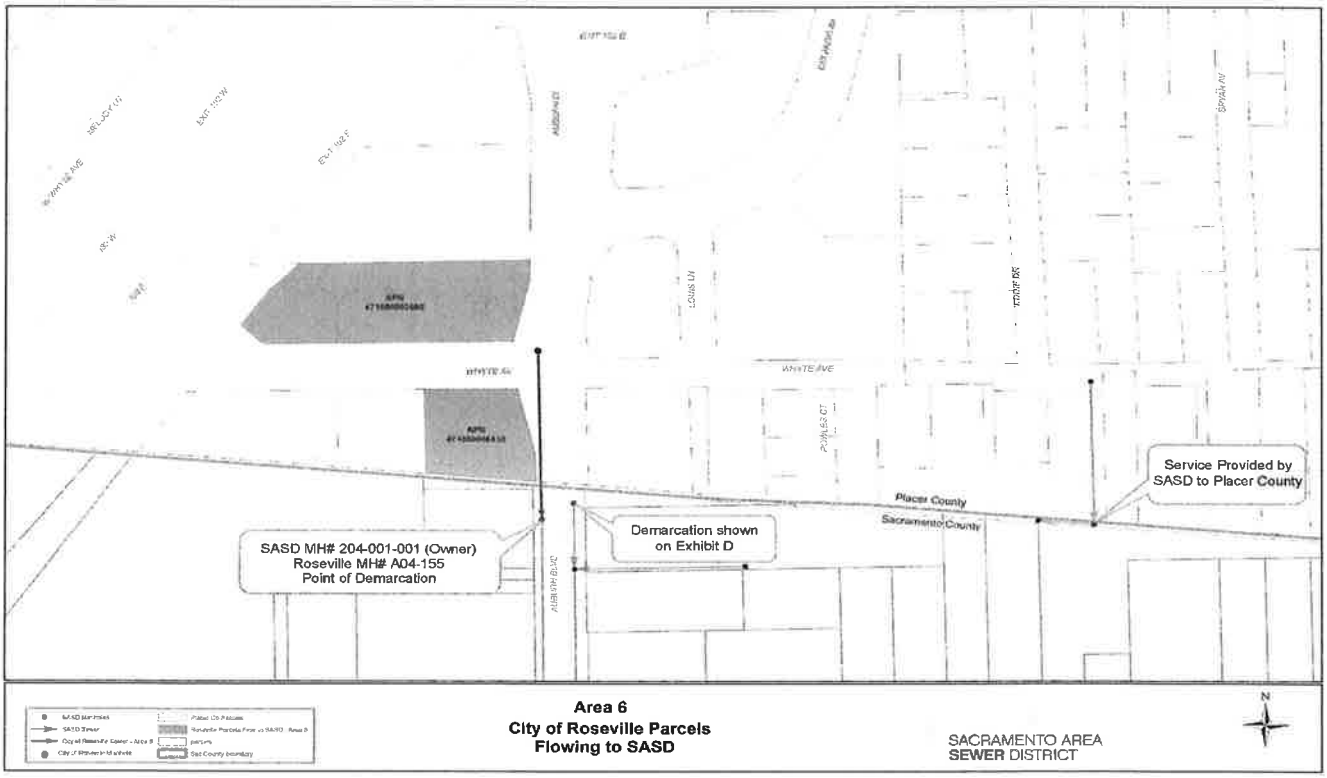
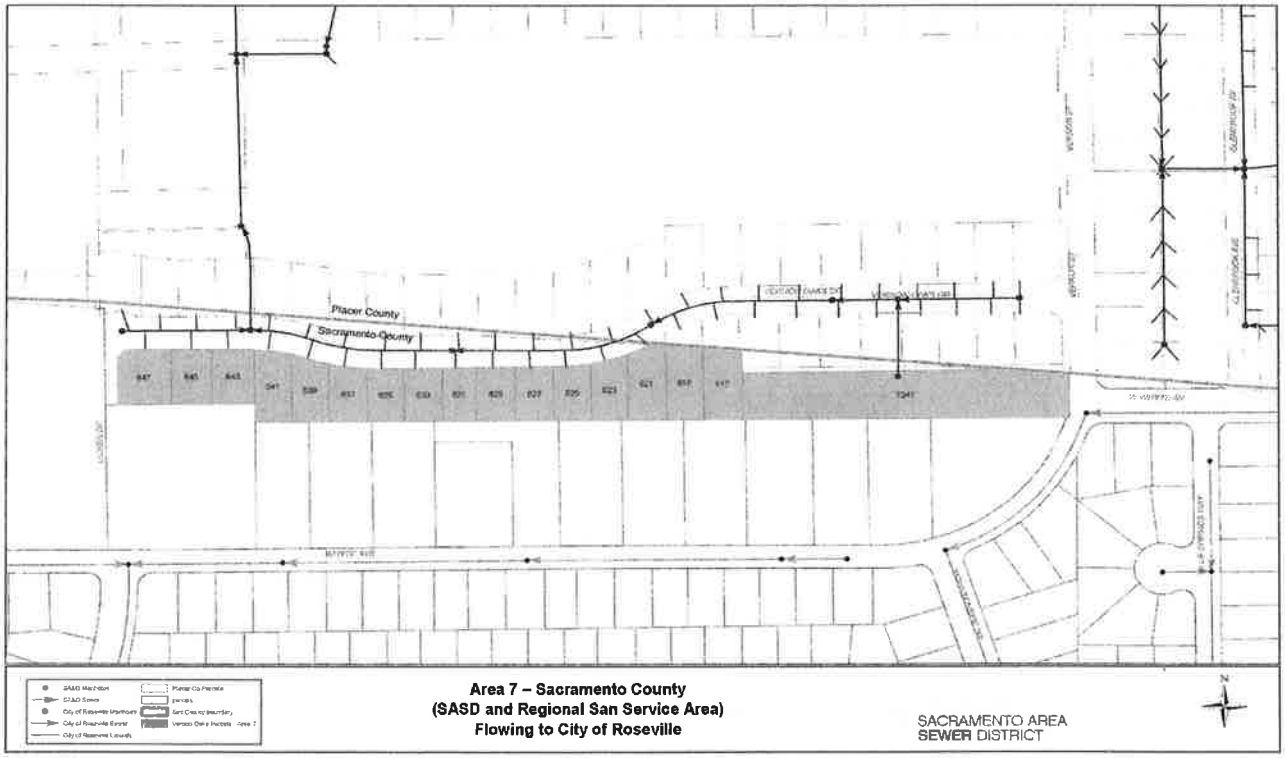


EXHIBIT G – SASD TO ROSEVILLE FLOW (VERNON OAKS)



RESOLUTION NO. 16-328

APPROVING AN AGREEMENT BY AND BETWEEN SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT, SACRAMENTO AREA SEWER DISTRICT AND THE CITY OF ROSEVILLE, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a Wastewater Services Contract and Operating Agreement, by and between Sacramento Regional County Sanitation District, Sacramento Area Sewer District and the City of Roseville, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is hereby approved and that the City Manager is authorized to execute it on behalf of the City of Roseville; and

PASSED AND ADOPTED by the Council of the City of Roseville this 3rd day of August, 2016 by the following vote on roll call:

AYES COUNCILMEMBERS: Gore, Rohan, Herman, Roccucci

NOES COUNCILMEMBERS: None

ABSENT COUNCILMEMBERS: Garcia

Susan Rohan
VICE MAYOR

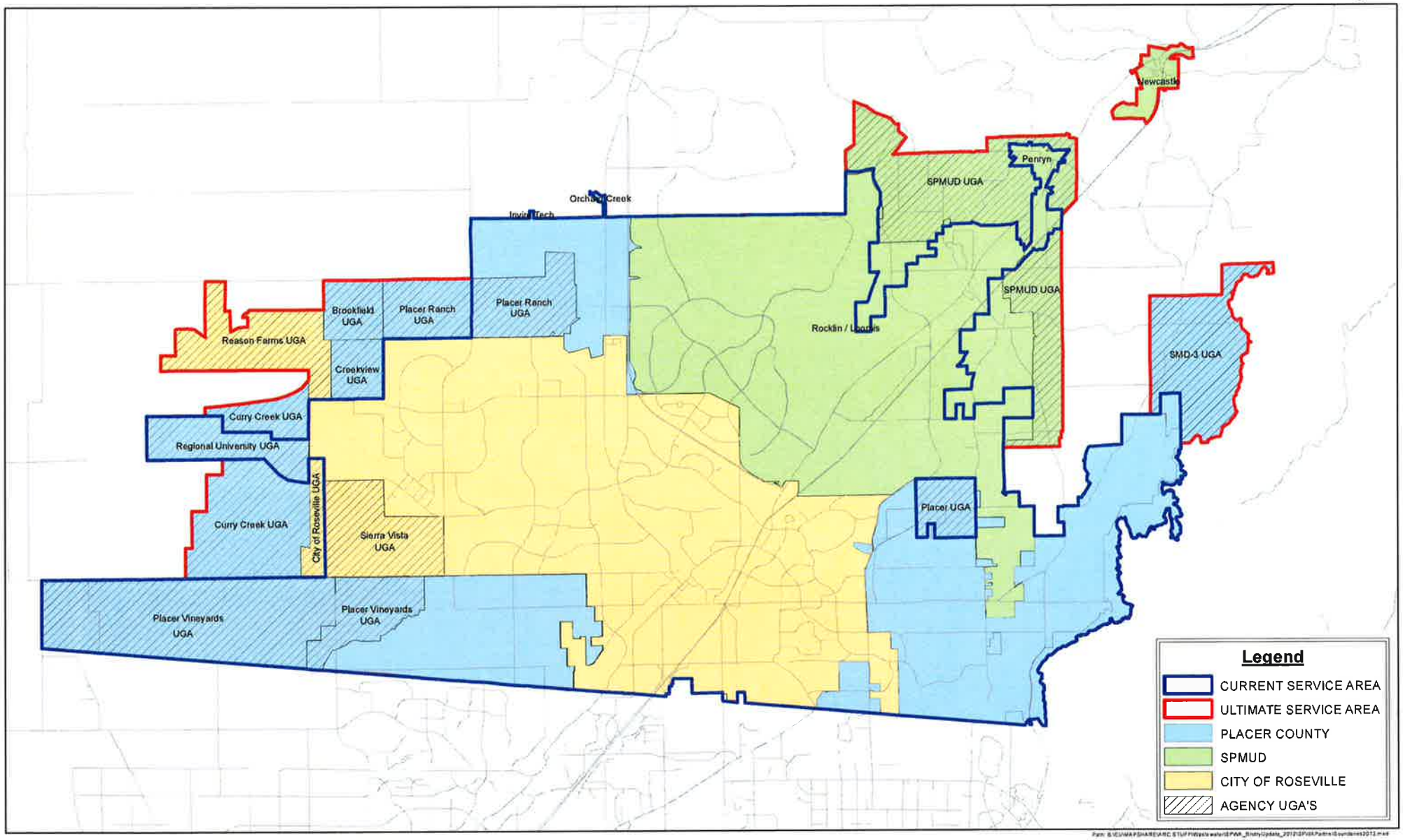
ATTEST:

Sonia Orozco
City Clerk

Appendix 3-5

South Placer Wastewater Authority Service Area Boundary

SPWA Partner Agencies, 2012 Service Area & Ultimate Service Area Boundary



Appendix 4-1

Scheduled Preventative Maintenance

Wastewater Collections
Preventive Maintenance

PM	Description	Next Due Date
HOT SPOTS TC	Hot Spots - Traffic Control	5/2/2022
HOT SPOTS	Hot Spots Non Traffic Control	5/2/2022
137178 HN	LIFT STATION GROUNDS	2/10/2022
138098 HN	PULL PUMPS FOR MAINTENANCE	2/3/2022
138157 HN	WET WELL CLEAN	2/3/2022
135781 HN	MONTHLY LIFT STATION CHECKS	2/10/2022
137268 HN	VERMIN CONTROL	5/3/2022
129353 HN	SM B04	6/1/2022
128854 HN	SM A03	2/1/2022
129012 HN	SM A04	11/1/2022
128866 HN	SM A05	4/1/2022
129017 HN	SM A06	5/1/2022
99933 HN	SM A07	2/3/2022
135869 HN	SM A08	7/1/2022
129276 HN	SM B03	4/1/2022
136850 HN	SM B05	10/3/2022
129578 HN	SM B06	1/3/2023
129953 HN	SM B07	6/1/2022
130290 HN	SM B08	3/2/2022
135872 HN	SM C01	2/1/2024
100428 HN	SM C02	1/1/2023
116668 HN	SM C03	3/1/2022
135188 HN	SM C04	2/2/2022
135435 HN	SM C05	9/2/2022
96770 HN	SM C06	8/2/2022
135870 HN	SM C07	10/1/2023
137191 HN	SM D01	7/1/2023
100165 HN	SM D02	6/1/2024

116947 HN	SM D03	5/1/2022
110644 HN	SM D04	9/1/2022
110891 HN	SM D05	8/2/2022
117276 HN	SM D06	6/1/2022
117329 HN	SM D07	6/1/2023
135782 HN	SM E01	4/1/2023
137040 HN	SM E02	9/1/2022
130663 HN	SM E03	2/1/2022
137038 HN	SM E04	5/3/2023
135874 HN	SM E05	5/31/2023
135823 HN	SM F03	4/1/2022
135879 HN	SM F04	9/1/2023
138206 HN	A04 LATERAL MAINTENANCE VAPOROOTER	2/1/2022
138337 HN	A05 LATERAL MAINTENANCE VAPOROOTER	10/1/2022
137871 HN	A06_1 LATERAL MAINTENANCE VAPOROOTER	2/4/2022
138134 HN	A06_2 LATERAL MAINTENANCE VAPOROOTER	11/1/2022
138233 HN	A07 LATERAL MAINTENANCE VAPOROOTER	5/3/2022
138229 HN	B04 LATERAL MAINTENANCE VAPOROOTER	4/1/2022
138232 HN	B05_1 LATERAL MAINTENANCE VAPOROOTER	3/1/2022
138129 HN	B05_2 LATERAL MAINTENANCE VAPOROOTER	11/1/2022
138167 HN	B06_1 LATERAL MAINTENANCE VAPOROOTER	12/9/2022
138103 HN	B06_2 LATERAL MAINTENANCE VAPOROOTER	9/1/2022
138628 HN	C02 LATERAL MAINTENANCE VAPOROOTER	9/1/2022
138230 HN	C03 LATERAL MAINTENANCE VAPOROOTER	3/1/2022
138034 HN	C04_1 LATERAL MAINTENANCE VAPOROOTER	2/1/2022
138038 HN	C04_2 LATERAL MAINTENANCE VAPOROOTER	5/3/2022
138054 HN	C04_3 LATERAL MAINTENANCE VAPOROOTER	4/1/2022
138056 HN	C04_4 LATERAL MAINTENANCE VAPOROOTER	6/1/2022
138079 HN	C05_1 LATERAL MAINTENANCE VAPOROOTER	7/12/2022
138114 HN	C05_2 LATERAL MAINTENANCE VAPOROOTER	1/3/2023
138080 HN	C05_3 LATERAL MAINTENANCE VAPOROOTER	6/1/2022
138074 HN	C05_4 LATERAL MAINTENANCE VAPOROOTER	7/2/2022

138115 HN	C05_5 LATERAL MAINTENANCE VAPOROOTER	9/1/2022
138231 HN	D02 LATERAL MAINTENANCE VAPOROOTER	4/1/2022
138343 HN	D03 LATERAL MAINTENANCE VAPOROOTER	11/1/2022
138184 HN	D04 LATERAL MAINTENANCE VAPOROOTER	2/1/2022
138352 HN	D05 LATERAL MAINTENANCE VAPOROOTER	1/3/2023
138426 HN	E02 LATERAL MAINTENANCE VAPOROOTER	9/1/2022
138349 HN	Backyard #2 LATERAL MAINTENANCE VAPOROOTER	11/1/2022
138403 HN	Backyard #1 LATERAL MAINTENANCE VAPOROOTER	4/1/2022
138238 HN	SSO LATERAL MAINTENANCE VAPOROOTER	4/2/2022
138148 HN	PILOT LATERAL MAINTENANCE VAPOROOTER	12/1/2022

Appendix 6

Spill Emergency Response Plan

Spill Emergency Response Plan

I. Goals of SERP 2

II. Respond and Assess 2

III. Spill Categories 4

IV. Spill Containment 4

V. Traffic Control 7

VI. Correct Cause 7

VII. Spill-Specific Monitoring Requirements 9

VIII. Receiving Water Sampling 10

IX. Final Spill Volume Estimation 10

X. Initiate Cleanup 10

XI. Notification Requirements 11

XII. Documentation and Data Tracking 15

XIII. Staff and Contractor Training 16

Appendix A- SPILL Start Time Policy 17

Appendix B- Flooded Structure Procedures 18

Appendix C- Receiving Water Quality Monitoring, Sampling, and Analysis 19

Appendix D- Sewer Call For Service 22

Appendix E- Sewer Lift Station Failure Response 23

Appendix F- Spill Response Chart 24

Appendix G- Field Spill Report 25

The City of Roseville developed this Spill Emergency Response Plan (SERP) for responding to spills originating from the sanitary sewer system. This plan ensures that all spill responses are conducted efficiently and effectively while meeting all regulatory requirements of the General Order.

The division has provided all employees with a binder containing this emergency response plan, estimation tables, and strategies for notifying primary responders, local officials, and regulatory agencies.

I. Goals of SERP

This SERP aims to ensure that all wastewater collection personnel follows the established guidelines in cleaning up and decontaminating spills within the City's collection system service area. The City's goals concerning spill response are:

A. Respond quickly to minimize the extent of the spill;
   1. The division's goal is a 20-minute response time during business hours and 40 minutes after hours.
B. Contain the spill to the extent feasible;
C. Eliminate the cause of the spill;
D. Eliminate public contact with the spill;
E. Mitigate the impact of the spill; and
F. Comply with the RWQCB Monitoring and Reporting requirements

II. Respond and Assess

Calls for service come through either the office landline or a 24-hour answering service. Calls for service to the Administrative Technician are documented in a service request in the City's CMMS. In turn, the Technician will dispatch the call with all information to the on-call service worker via cellular phone. After business hours, the City's contracted answering service is provided a script of questions used to collect information from the caller. Once gathered, they also dispatch the call information via cellular phone to the on-call service worker. After the call, the answering service time stamps the call, and an email is sent to the division management and service call address with all pertinent information regarding the call. Additionally, the wastewater treatment plant staff monitors lift station SCADA alarms. Operators notify the on-call service worker via cellular phone if they receive an alarm at any of the City's lift stations.

Assessment starts with the phone call to the customer. Upon contact with the resident, request that the resident stop all water use, then begin gathering as much relevant information as possible such as:

A. Description of problem
B. Specific location if a spill has occurred (e.g.,. manhole in the street, front or back of the property, cleanout box)
C. The approximate time the spill was noticed helps tremendously in determining the start time of the spill.

D. Any other observations from the caller (e.g., currently spilling, odor, duration of the spill, slow drains, currently spilling, water use in home)

E. If the service worker believes an active spill is occurring, they will mobilize a hydro-vac immediately to the location.

A. The wastewater crewmember arriving first at the scene is the ***First Responder***. Upon arrival, the first Responder will quickly assess the spill to determine the extent, spill category, and resources needed to address the spill. The ***First Responder*** is responsible for the following:

1. Location of the spill by the address and cross street the spill appearance point (i.e., manhole, cleanout, lift station, etc.)
2. Documenting the time the call was received, time of arrival, and determining the start and stop times of the spill. Appendix A will aid in establishing the start and stop time for the spill.
3. Determine the extent and the category of the spill;
    i. If the spill is a Category 1 or 2, notify the Superintendent or Supervisor immediately. Cal OES notification is required within 2 hours of becoming aware of the spill.
    ii. Did the spill cause a backup in a structure? – Appendix B addresses the process
    iii. Did the spill enter into a drainage conveyance system?
    iv. If a potential for public exposure is present, control foot and auto traffic through the area
    v. Other concerns due to the spill
        a. Is the spill related to a street collapse?
        b. Is the spill related to recent construction work?
        c. Has the spill displaced a manhole cover creating a traffic hazard
4. Requesting additional wastewater crews or personnel as needed;
5. All field documentation, including photographs of the spill and completion of the Field Spill Report Form

F. If the spill is a Category 1, follow directions from RWQCB, Placer County Environmental Health, or the Department of Fish and Wildlife for posting warning signs around the contaminated area.

III. Spill Categories

Individual spill notification, monitoring and reporting must be in accordance with the following spill categories:

A. **Category 1** - any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:

1. A surface water, including a surface water body that contains no flow or volume of water.
    i. A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sewer system or disposed of properly.
    ii. Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.
2. **Category 2** - is a spill of 1,000 gallons or greater from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
3. **Category 3**- is a spill of equal to or greater than 50 gallons and less than 1,000 gallons from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
4. **Category 4** - is a spill of less than 50 gallons from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

IV. Spill Containment

Containment of a spill becomes increasingly difficult once the overflow reaches a drainage conveyance system or a waterway. The quicker the spill's source and extent can be identified, contained, or controlled significantly reduces the spill's impact. Upon arrival, survey the scene to determine the potential spill appearance point. There are times when responding to a spill, the source of the spill is potable water, a backyard drain, or a storm issue. Once confirmed that the spill is the sewer, mobilize the necessary personnel and equipment for assistance. During dry weather, the drainage conveyance system can store the spill, if plugged at a point downstream of the spill.

A. Multiple techniques are identified to contain the spill depending on the circumstances, spill category, and material available. In no particular order, the list below includes possible containment options for field crews.

Location	Options for Containment
Curb and Gutter	Create berm with rubber berm, dry sweep, dirt or sandbags: Utilize natural low spots or grade deviations
Lift Station	• Use Hydro-Vac to contain • Setup bypass pumping • Setup backup generation
Open Space	• Dig a trench to contain • Sandbag berm • Dirt berm
Creek	• Plug storm drain inlets and outlet pipes to creek
Storm Drain Conveyance System (Dry)	• Plug all affected storm drain inlets; plug outfall if necessary • Contain using the hydro-vac • Request additional hydro-vac support if necessary
Storm Drain Conveyance System (Wet Weather)	• Plug all affected storm drain inlets • Emergency bypass pumping • Turn off stormwater pump station if applicable
Backup in Structure	▪ Evacuate residents if needed ▪ Pop cleanout cap off; If no city cleanout, attempt to locate ▪ Pop private cleanout if available • Contain outside if overflow is relieved by finding/removing cleanout cap.

1. Containment with Hydro-Vac
   Determine a location downstream of the spill appearance point where the hydro-vac unit can be set up to capture all spilled water. Ensure no storm drain inlets are between the containment and spill appearance points. Continue vacuuming overflow until the blockage has been cleared, then proceed with the spill's cleanup. Wash all debris and spill evidence into the vacuum tube for removal and disposal at the DCWWTP.
2. Containment Using Berms and Mats

   Utilize dirt, dry sweep, a rubber berm, sandbags, or other obstructing material that is readily available to block drain inlets and ponds the spill to a naturally low area to contain and minimize the spill's impact. If possible, divert the spill to a downstream manhole unaffected by the blockage. Attempt containment by covering any affected storm drain inlets with rubber mats and securing them with sandbags, dirt, or other heavy objects to keep them in place.

3. Containment Using Pneumatic Plugs

   Plugging the affected drain inlet or multiple drain inlets with a pneumatic plug can be effective. For example, a pneumatic plug in the storm drain outfall would prevent the overflow from reaching the waterway. However, depending on the location within the City, drain inlets will vary in size, so utilizing plugs may not be the best option.

B. Backup in Structure

Advise the customer to keep family members and pets out of the spill areas to not track any contamination into non-affected areas. If necessary, evacuate affected people and pets.

1. During regular business hours, notify Risk Management at 916-774-5420 or 916-774-5202. After hours or if there is no answer at the above numbers, contact Risk Manager Virginia Bolmsn at 916-501-2073.
2. If Risk Manager or their staff cannot be reached, contact one of the approved restoration companies in the order below and authorize cleanup services only:
   i. Serv-Pro 916-632-2250
   ii. Restoration Management 800-400-5058
3. Before the restoration company or the Risk Manager arrives, hand the resident our camera and ask them to photograph the affected area. Do not enter the house, even if invited.
4. If the resident declines the cleaning services, request that they sign and date the Declination of Clean Up Services Form.

C. Overflow into Storm Drain Conveyance System (DCS)

1. Trace overflow in the DCS to the downstream endpoint using the Stormwater Map on the GIS. Plug all affected storm drain outfalls or block the creek and channels to contain the spill.
2. While tracing the system, if you determine that the spill is contained within a mainline section, plug the downstream end at a manhole to contain the spill. Many storm drain manholes are built with sumps in the base, and depending on the spill volume, these sumps may prevent the spill from continuing downstream. Note all the storm drain assets cleaned on the Field Spill Report Form.
3. If a stormwater pump station is near the spill and may be affected, contact Streets Division to turn off the pumps.

D. If the SPILL is a Category 1 spill, follow directions from RWQCB, Placer County Environmental Health, or the Department of Fish and Wildlife for posting warning signs around the containment area.

V. Traffic Control

Traffic control may be needed immediately to protect the health and safety of the public and responding wastewater crews. Typically, immediate traffic control is necessary if there is a street collapse or significant undermining of the pavement section related to the blockage and sewer spill, if the manhole cover is ajar, or if the spill causes street flooding. In addition, temporary traffic control may be needed to allow responding crews to contain and clear the blockage and prevent sewer from being further dispersed by vehicular traffic.

A. Provide traffic control per Cal Trans Work Area Traffic Control Handbook (WATCH)
B. Control public contact with the spill by isolating the area with barricades, signs or traffic cones.
C. If necessary, use other departments (i.e. Police, Public Works) to ensure adequate traffic control. Contact Roseville Police/Fire Dispatch at 916-774-5123 to coordinate.

VI. Correct Cause

The cause of the overflow may be located a considerable distance downstream of the spill in areas with flat terrain. During significant rain events, overflows can be caused by excessive I&I in the collection system. I&I can significantly increase the flow in a collection system and cause overflows from pipes that are only partially blocked. I&I can also directly affect the hydraulic capacity of mainlines and lift stations. Under these conditions, stopping the overflow may not be possible until the flows recede.

A. Locate the cause of the overflow
    1. Sewer Main
        i. Check flow in manholes
        ii. Blockage should be between a manhole with sluggish flow or surcharging and a manhole with very little flow or completely dry
        iii. Clear the mainline blockage using a hydro-vac unit from the dry manhole. Refer to SOP WWC-002 for hydro-vac procedures. Observe the material that flows downstream after clearing the obstruction to determine the possible cause of the blockage and note it on the spill report form.
        iv. Continue to monitor manholes in the area until the surcharged manhole empties.
        v. If the blockage cannot be cleared. Increase containment and request additional crews for assistance.
            a. Perform a CCTV inspection to determine the blockage

b. Request additional hydro-vacs to contain, or initiate by-pass pumping
c. Dig and repair the sewer main to correct pipe defect

2. Sewer Service
    i. Check flow in the city cleanout. If the riser is full of water, wait until a hydro-vac is onsite to remove or contain the water before eeling. If the cleanout is holding but not full, carefully insert the gas powered ell rod and cutting head into the service until you contact the obstruction. Inserting the eel rod quickly, can cause the service to spill. Proceed with the eeling process until the service drains, then CCTV inspect to identify the blockage details.
    ii. If the City cleanout is dry and the resident is still plugged, the stoppage is likely on the private side and is not the City's responsibility. However, it is good customer service to CCTV the service to ensure the City line is clear.
    iii. If no city cleanout exists, but the resident has a 4" private cleanout, run this private cleanout to clear the blockage. Once removed, CCTV to determine the location of the problem. Refer to Appendix D to determine if the private cleanout meets the criteria before using city equipment.
    iv. Check the upstream and downstream mains if a city or private cleanout cannot be located. If the main is running clear, notify the resident that the problem is on their side, and explain the city cleanout installation policy.
    v. If the service line ties into a dead-end run, regardless if the City cleanout is clear, clean the mainline segment with a hydro-vac.
3. Lift Station
    i. Check the alarm status inside the control panel for indication of a problem.
    ii. If no power is present:
        a. Contact Roseville Electric to verify the outage and an estimated time the power will be restored.
        b. Determine the wet well level and remaining downtime left at the station.
        c. If downtime exceeds the max allowable retention, mobilize additional wastewater crews and a hydro-vac to the station. If the power outage is extensive, request multiple hydro-vacs for assistance.

d. Continue vacuuming the wet well until power is restored and the lift station operates in auto mode. Watch the station for an entire pump cycle before leaving.

iii. If power is present, but the pumps aren't operating in auto, switch the controls to the hand position. If the pumps are operational in hand mode, contact the on-call EU electrician and continue running and monitoring the station in hand mode.

iv. If portable generation is required to power the station, the on-call EU Electrician must be onsite to make the connections. All control panels have an exterior plug and disconnects for portable generation connection, with each station having a specific cable. All cables are labeled and located in the EU Maintenance shop.

4. Force Main

i. If the spill is from a ruptured force main, control the power using the written Energy Control Procedures (ECP), located in the door panel at the station. A qualified electrician shall perform the switching of any panel breakers.

ii. Contain the spill from the pipe break using the containment procedures in Section IV.

iii. Monitor and control the wet well levels using bypass pumping or hydro-vac units until the repair is completed.

iv. If the station is equipped with dual force mains, transfer flows to the additional force main to continue normal lift station operation.

VII. Spill-Specific Monitoring Requirements

Spill specific monitoring requires gathering and storing records using photography, GPS coordinates and other best-available tools to document a particular spill event. Additionally, first responders can use this information to estimate the approximate spill volume and spread. Therefore, the first responder shall collect the following critical spill location information:

A. Photography and GPS Coordinates for:

1. The spill appearance point
2. If multiple spill points exist, document the point closest to the spill origin.

B. Photographs for:

1. Locations where the spill entered the drainage conveyance system;
2. If applicable, the location where the spill discharged into surface waters;
3. Extent of the spill spread, and;
4. Locations documenting spill cleanup

C. Photograph all affected areas during the spill, documenting the appearance point, containment point, spread of the spill, and any post-spill cleanup. When photographing areas, ensure there is an object in the picture to aid in gauging the size of the area. The Field Spill Report Form also has a small camera indicating when a photograph is required.

VIII. Receiving Water Sampling

For sewage spills in which an estimated 50,000 gallons or greater are discharged into a surface water, the Enrollee shall conduct water quality sampling no later than 18 hours after the Enrollee's knowledge of a potential discharge to a surface water. In addition, the Enrollee shall gather information during and after the spill event to assess the spill magnitude and update its notification and estimated spill volume. The Superintendent or their designee will handle all notifications to regulatory agencies. Refer to Appendix C for sampling procedures.

IX. Final Spill Volume Estimation

The final spill volume estimation is critical for CIWQS reporting and determines whether additional reporting to regulatory agencies is required. Additionally, the Enrollee shall update its notification and reporting of estimated spill volume, including spill volume recovered, as further information is gathered during and after a spill event. Calculating large-volume spills is challenging because the area and depth are difficult to measure, and chances are these spills are not fully contained. Use SOP WWC-044 for spill volume estimation methods and guidance.

X. Initiate Cleanup

When cleaning sewer spills, all solids and materials shall be recovered and removed from the site. Disinfection of contaminated soil or drainage conveyance systems is performed only at the direction of California Fish and Wildlife or Placer County Environmental Health. Procedures for cleaning affected areas after a spill are as follows:

A. Flooded building or structure
   1. If building or structure is flooded due to a failure in the City's collection system, contact Risk Management or Virginia Balmsn after hours. Risk Management will respond, assess and notify restoration companies on contract with the City.
   2. Storm Drain Conveyance System
      i. Pump out or vacuum any ponded water present.
      ii. Remove all debris and solids using a Hydro-Vac to clean affected storm drains and vacuum all water from the drainage conveyance system.

iii. Wash all affected concrete areas with the high-pressure wand. Then, capture and remove all wash water using the vacuum on the Hydro-Vac.
iv. Remove all containment and finish flushing and vacuuming area, capturing all remaining wash water.

3. Street, Curb or Gutter and Landscape
   i. Remove all debris and solids with hydro-vac
   ii. Remove any contaminated soil and plants
   iii. Wash pavement, curb and gutter area, with the high-pressure wand, then vacuum all wash water with a hydro-vac.
   iv. If Hydro-Vac decant pump is used, utilize the decant apparatus to alleviate possibility of a secondary spill and provide fall protection at the open manhole.

XI. Notification Requirements

The General Order requires prompt reporting of all spills to regulatory agencies. As such, notification procedures are identified in the SERP and included in the SERP binder provided to you.

A. If the First Responder determines the spill to be a Category 1 or 2, the first notification begins with the LRO (s) or their designee, who are responsible for notifying all regulatory agencies regarding reportable spills.
B. In addition, when notifying regulatory agencies, site-specific spill information is required before receiving an OES Control Number. First responder information gathered on the Supplemental Sheet in the back of the Field Spill Report Form (Appendix G) will be used to notify OES and assist Data Submitters when inputting information into CIWQS.
C. Following the initial notification, the Enrollee shall provide any updates to OES regarding additional impacts to receiving waters, including increased or decreased changes to the estimated spill volume and the estimated discharge volume directly into waters of the state or indirectly to a drainage conveyance system.
D. Table 1 is the regulatory notification guide. The table, used by the field crews, provides a quick reference for notifications.
E. Table 2 provides information on the monitoring and reporting guidelines set in the General Order.

Table 1- Regulatory Notification

If a Spill	And Affects	Notify
.that discharges in or on waters of the State or discharges to a location where it will probably be discharged to waters of the State, the Enrollee shall notify the Office of Emergency Services (OES) and obtain a control number as soon as possible, but no later than 2 hours after becoming aware of the discharge; and notification can be provided without substantially impeding cleanup or emergency measures	Sacramento River A structure that requires cleanup	• WWC Supervisor- Cody Wilbanks Office 916-746-1889 Cell 916-472-1488 • WWC Supervisor- Shane Rodgers Office 916-746-1894 Cell 916-223-7711 • WWC Supervisor – Kevin Ryan Office 916-746-1895 Cell 916-223-7537 • WWC Superintendent – Dan Pruden Office 916-746-1891 Cell 916-580-5600 **<u>The individuals above are responsible for notifying</u>** • OES 1-800-852-7550; Obtain a control number for spill report form **Water Quality Sampling- Frank Dittrich 916-746-1882 - During normal business hours only; after hours, call** ▪ **Cal Test 707-258-4000** ▪ **California Lab Services 1-800-638-7301** ▪ **Excel Chem 916-938-0519** **<u>Additional Numbers for Reference</u>** ▪ **Placer County Environmental Health** 1-530-745-2300 Main Line 1-530-745-2306 After-Hours Supervisor • **California Department of Fish and Wildlife** 916-445-0045 Option #2 • **Sacramento River Water Treatment Plant** 916-808-4961 916-264-5011 • **City of Roseville-Risk Management** 916-774-5420 or 916-774-5202 o After hours, Contact Risk Manager Virginia Bolmsn at 916-501-2073 o If there is no answer, first responder can authorize cleanup only from the

		restoration companies listed in the SERP

Table 2 - Monitoring and Reporting

Spill Category	OES Notification	Monitoring	Draft Report	Certified Report
Category 1 Any volume of sewer discharging to surface water	• **Within 2 hours** of the Enrollee's knowledge of the spill of 1,000 gallons or greater discharging or threatening to discharge to surface waters. • Obtain a Control number from OES	• Conduct spill-specific monitoring. • Conduct water quality sampling **within 18 hours of knowledge of a spill 50,000 gallons** or greater to surface waters	Due within **3 business days** of knowledge or self-discovery of Category 1 spill.	• Due within **15 calendar days** of the spill end date. Upon completion, the CIWQS will issue final spill event ID number. • Submit Technical Report within 45 calendar days after the spill end date for spills greater than 50,000 gallons • Submit Amended Report within **90 calendar days** after the spill end date
Category 2 Spills of 1,000 gallons or greater that do not discharge to waters of the State	• **Within 2 hours** of the Enrollee's knowledge of the spill of 1,000 gallons or greater discharging or threatening to discharge to surface waters. • Obtain a Control number from OES	• Conduct spill-specific monitoring.	Due within **3 business days** of the Enrollee's knowledge of the spill	• Due within **15 calendar days** of the spill end date. Upon completion, the CIWQS will issue final spill event ID number. • Submit Amended reports within **90 calendar days** of the Certified Report due date
Category 3 Spills of 50 gallons to less than 1,000 gallons that don't discharge to surface waters	N/A	• Conduct spill-specific monitoring.	N/A	• Due **30 calendar days** after the end of the month in which the spills occurred. After LRO certifies the spill, CIWQS will issue a spill identification number for each spill. • Submit Amended reports within **90 calendar days** of Certified Report due date
Category 4 Spills less than 50 gallons that don't discharge to surface waters	N/A	• Conduct spill-specific monitoring.	N/A	• Within **30 calendar days** after the end of the month in which the spills occurred, certify monthly the volume spilled and the total number of spills • Upload and certify a digital report of all Category 4 spills in CIWQS by 1 FEB after the end of the calendar year of which the spills occur.

XII. Documentation and Data Tracking

All spills are tracked with a service request module in the City of Roseville's CMMS. Completed service requests, work order requests and any overtime tags are turned into Superintendent/Supervisor for QA/QC. These are all resolved in the CMMS. Service requests for after-hours call will be generated the following business day. Ensure all appropriate documentation has been completed.

A. Follow-up work orders are generated to CCTV inspect the point of failure within the sewer system. The System Failure Analysis Form includes post-spill assessments of response activities and recommendations for repair, replacement, or preventative maintenance schedule adjustments. The Superintendent or Supervisor will review the results and recommendations from the CCTV crew and implement the changes into the appropriate corrective or preventative maintenance schedules.

B. The first responder turns in the spill Field Report Form documenting all actions taken during the overflow to the Data Submitter. The Data Submitter entering the report in CIWQS writes an after-action narrative based on the data provided in the Field Spill Report Form and all information provided by the first responder. This document contains the pertinent details of the overflow, verifies all spill response activities, verifies the accuracy of the start and stop times, and all actions taken by the first responder. At least five pictures are required for every spill response, which establishes the spill appearance point, final destination, containment procedures, and cleanup response. In addition, overall effectiveness of the response activities are discussed, and any areas for improvement are identified. Before certifying the report in CIWQS, the LRO reviews the information and verifies the spill response and estimations are accurate and justified.

C. Private Commercial Spills

1. City crews will respond and contain or clear blockages, depending on the type of business and cooperation of the management staff at the business. If the business refuses to stop using water to alleviate the potential for a continued overflow, first responders can call Placer County Health Department to assist with the response from the business. The City will document all time, equipment, pictures, comments, and response activities on the Field Spill Report Form, which will be stored electronically.

D. Private Residential Spills

1. City crews will respond and contain if necessary until the resident has stopped all water use causing the spill. City crews will verify that the problem is on the private side by inspecting the city infrastructure. If no city cleanout is located, and If the resident has a private cleanout that meets

the criteria Appendix D. (5) of the SERP, the City will clear the blockage and document activities on the field spill report. If no spill occurs, the Responder will document all findings on the issued service request.

XIII. Staff and Contractor Training

A. WWC Employees train annually on the importance of the SERP. Supervisors utilize a Powerpoint Presentation and the written SERP as an interactive training resource in a classroom setting. This setting allows employees to clarify any elements within the procedure and enables management staff to gather feedback from field crews, assess the effectiveness of the current emergency response plan, and update the procedures as necessary. A written competency test follows the annual training.

B. WWC employees constructed a spill simulator to test employees' skills in estimating spill volumes. Training on spill estimation occurs annually for City wastewater crews. After completing the SERP training, Supervisors use the simulator to evaluate the employees' volume estimation skills. Supervisors can create spills from either a manhole, a cleanout, or both. The water is metered in gallons per minute, creating an accurate simulation within the confines of the WWTP.

C. The CWEA Technical Certification Program provides certification in various wastewater disciplines to promote the knowledge and skills of wastewater professionals. The City of Roseville requires employees to hold Collection System Operator certification to promote within the ranks.

D. The City of Roseville is a Regional Treatment Facility, and as such, Regional Partner meetings are held quarterly with the neighboring agencies having tributary flow through the City's collection system. A mutual aid agreement has been written between the three partners, agreeing to assist each other with equipment and manpower, depending on the extent each agency has been affected by a regional catastrophe. Partner meetings include discussions of mutual aid agreements, new and ongoing projects, and brainstorming new ideas or technologies that could benefit the agencies.

E. The City of Roseville is a full-service city, owning and operating all municipal utilities except gas. Wastewater and Streets Division management staff consistently communicate and have scheduled quarterly meetings to discuss overlay projects, trench paving, and storm drain maintenance concerns.

F. Contractors are provided with the City's wastewater collection system policies and procedures. Per the contract, they must train all their employees on the City's wastewater collection system policies and procedures before performing work on the City's wastewater collection and conveyance system.

Appendix A- Spill Start Time Policy

The Service worker shall use the time a call is received from Administrative Tech or the answering service as a **base** for when the spill started. When talking with the resident or business, instruct them to stop using all water.

A. Upon arrival, note if the spill appearance point is actively spilling. If not spilling, but there is evidence a spill occurred requiring a cleanup effort, notify additional crewmembers for additional equipment to clean up the spill.
B. If spilling, initiate the SERP to ensure the spill is contained and the cause is corrected.
C. Interview the resident or the individual reporting the spill to determine the following:
    1. Did you notice water coming from the cleanout at the property line or manhole in the street? If so, what was the approximate time?
    2. Were your drains running slowly at any time before you called? If so, what was the approximate time?
    3. Do you remember the last time you didn't see a spill occurring?
    4. If neighbors were outside, close to the area of the SPILL, did they notice water spilling? If so, what was the approximate time?
    5. Be prepared to summarize how you determined the start time, describing the steps you took while making your decision.
D. If the above questions do not produce an accurate account for the SPILL start time, use the time the call was received by either the office personnel or the after-hours answering service, and subtract 15 minutes. Record this time as the actual start time on the Spill Field Report Form. However, If the spill evidence travels farther than the logic of the 15 minutes, the field crew/responders shall try to recreate the spill the following day using clean water.
E. Any of the following will determine the stop time of the spill
    1. The arrival time of the service worker if the spill had stopped before their arrival.
    2. The clearing of the blockage and the spill stops overflowing.
    3. Interview the resident or witnesses observing the spill, provided the time concurs with the evidence.
F. Provide a detailed description of the spill event, including exact times of arrival, spill start and stop time, containment procedures, and names of collection personnel assisting you in the overflow. Detail your process for determining the start and stop time of the spill. After completing the necessary paperwork, provide the photos and field report to the Data Submitter.

G. In the event of a SPILL from a sewer lift station, the start time will be determined using information gathered from the SCADA system.

Appendix B- Flooded Structure Procedures

In the event a failure in the City's wastewater collection system causes a sewer spill in a resident's home or business instruct them to:

1. Keep people and pets away from the affected area(s), and do not track contamination throughout non-affected areas.
2. Don't attempt to clean up the overflow. Instead, instruct them the City has restoration companies available and will respond.
3. Turn off all central heat and air-conditioning systems and prevent flow from reaching any floor vents with towels or blankets.
4. Leave these items in the affected areas for restoration companies to clean up.

Contact Risk Management at 774-5420 or 774-5202 during regular business hours. After hours, if there is no answer, contact Virginia Bolmsn, Risk Manager, at 916-501-2073. They will assess and notify restoration companies on contract with the City to respond. If the resident refuses the offered cleanup services, ask them to sign the declination letter refusing the service.

If the resident chooses to file a claim for damages, inform them that they must fill out a Government Claim Form.

A claim form can be obtained in the following ways:

- In person at the Roseville Civic Center, City Clerks Department and Risk Management Division, 311 Vernon St., Roseville, CA.
- By mail, by contacting the Risk Management Division at (916) 774-5202 or by e-mailing the request to riskmanagement@roseville.ca.us
- Electronically by following this link: http://www.roseville.ca.us/hr/risk_management/how_to_file_a_claim.asp

Completed forms must be returned by mail or in-person to the City Clerk's office at the Roseville Civic Center

Appendix C- Receiving Water Quality Monitoring, Sampling and Analysis

This procedure describes the Water Quality Monitoring, Sampling and Analysis process to be used if a sanitary sewer overflow exceeds 50,000 gallons. The water quality sampling results will enable the division to prioritize areas of concern regarding water quality impacts

A. Receiving Water Monitoring

Through visual observation, spill volume-estimating, and field calculation techniques, the Enrollee shall gather and document the following information for spills discharging into receiving waters:

1. Estimated spill travel time to the receiving water
2. For spills entering a drainage system, estimated spill travel time from the point of entry to the point of discharge into receiving water
3. Spill travel time can be estimated in the following ways:
    i. NCPI Gravity Flow Hydraulics Calculator
    ii. Travel time based on design slope of 2 fps
    iii. Timed water release in the cleaned pipe over the distance traveled
4. Estimated spill volume entering the receiving water
5. Photographs of the following:
    i. Waterbody bank erosion
    ii. Floating matter
    iii. Water surface sheen (potentially from oil and grease)
    iv. Discoloration of receiving water
    v. Impact on the receiving water

B. Water Quality Sampling and Analysis

Surface water samples will be collected using a grab sample technique. Employees must wear new sterile powder-free surgical gloves when collecting all samples.

1. ***Trigger for Sampling*** -Water quality sampling is required within 18 hours of initial SPILL notification for Category 1 Spills in which 50,000 gallons or greater are spilled into surface waters.
2. ***Safety and Access***- Water quality sampling should only be performed if it is safe to do so and access is not restricted or unsafe. Unsafe conditions include traffic, heavy rains, slippery or steep creek banks, visibility issues, high-flowing creeks, and limited access due to soil conditions or poor terrain. If access restrictions or unsafe conditions prevent compliance with these monitoring requirements, the Enrollee shall provide documentation of the access restriction or safety hazards in the required report.

3. ***Where to Sample***- The Enrollee must use the best professional judgment to determine the upstream and downstream distances based on receiving water flow, accessibility to waterbody banks and size of visible plume. Collect one sample each day for the duration of the spill. In addition, the Enrollee shall collect receiving water samples from the following locations.
    i. A point in the drainage conveyance system before the flow discharges into the receiving water. Label this sample DCS-001
    ii. Point of Discharge into the receiving water where sewage initially enters the receiving water. Label this sample RSW-001
    iii. Upstream Sample – A point in the receiving water, upstream of the point of sewage discharge. Label this sample RSW-001U
    iv. Downstream Sample – A point in the receiving water, downstream of the point of discharge where the spill is fully mixed with the receiving water. Label this sample RSW-001D

Determine the water velocity present in the creek or body of water during the SPILL. Dropping debris in the creek and timing how long the debris takes to travel a known distance is a good indicator of the water velocity present. Use this information to determine the next downstream sampling point. Then, multiply the water velocity by the spill duration to determine the furthest point downstream to the sample.

C. **Sampling Procedure**

1. Put on the required PPE (safety glasses and latex gloves)
2. **Collect Drainage Conveyance System Sample** – Sample at a point in the drainage conveyance system before the flow discharges into receiving waters
    a. Label this sample DCS-001 and take a picture of the location you are sampling.
    b. Avoid any debris or scum layer from the drainage system.
    c. Fill the bottle against the direction of flow, replace the cap, and secure the sample to avoid contamination.
    d. Use a thermometer to measure the temperature of the sample and record the results
3. **Collect Upstream Sample** - Move approximately 100 feet upstream of the source.
    a. Label the bottle RSW-001U and take a picture of your sampling location.
    b. Sample away from the bank and avoid any debris or scum layer from the surface.
    c. Fill the bottle against the direction of flow, replace the cap, and secure the sample to avoid contamination.
    d. Use a thermometer to measure the temperature of the upstream sample location and record the results.

4. **Collect Point of Discharge Sample-** Move approximately 10 feet downstream of the source location.
    - **a.** Label the bottle RSW-001 and take a picture of your sampling location.
    - **b.** Sample away from the bank and avoid any debris or scum layer from the surface.
    - **c.** Fill the bottle against the direction of flow, replace the cap, and secure the sample to prevent contamination.
    - **d.** Use a thermometer to measure the temperature of the source sample location and record the results.
5. **Collect Downstream Sample –** Move approximately 100 feet downstream of the source.
    - **a.** Label this sample RSW-001D and take a picture of the location you are sampling.
    - **b.** Sample away from the bank and avoid any debris or scum layer from the surface.
    - **c.** Fill the bottle against the direction of flow, replace the cap, and secure the sample to prevent contamination.
    - **d.** Use a thermometer to measure the temperature of the downstream sample 1 and record the results

D. **Required Water Quality Analyses** – All samples will be immediately transported to the nearest certified water quality laboratory for analysis. The sample analysis, at a minimum, will include the following:

1. Ammonia
2. pH
3. Electrical Conductivity
4. Bacterial indicators, such as total and fecal coliform, enterococcus, and e-coli, per the regional Basin Plan or as directed by SWRCB
5. Temperature

The City has contracts with the following Certified Labs for Spill Response:
Cal Test 707-258-4000
California Laboratory Services 1-800-638-7301
ExcelChem. 916-938-0519

E. **Equipment and Supplies** – The following items and PPE are required for sampling:

1. Cooler with Blue Ice
2. Sterile sampling bottles
3. Powder-free latex gloves
4. Safety glasses
5. Marking pen
6. Field log forms

Appendix D- Sewer Call For Service

When dispatched to a home experiencing a sewer problem, the service worker shall follow the procedures below to provide the resident with the best possible customer service and quickly correct the problem causing the SPILL.

Residential

1. Upon arrival and before performing any work, contact the homeowner or resident. Explain the process you will use to determine the problem. During the initial phone call, the responder should have requested the resident to stop all water use, so if water is still spilling from cleanout, check the nearest upstream manhole on the mainline for a blockage.
2. If no cleanout is visible, look in CMMS for a cleanout location, an "S" marked on the curb, or other information that might indicate a cleanout.
3. If a city cleanout is found, clear the lateral blockage using the eel and a root-cutting head, do not use hand tape. CCTV to ensure the line is clear and all blockages have been removed. Record all time and pertinent information you have found on a work order, service request, or an overtime tag for after-hours calls.
4. If no cleanout is found, locate the closest downstream manhole, call for Hydro-Vac assistance, and run the main.
5. If the residence does not have a city cleanout, and the above procedures did not alleviate the blockage, we will use our equipment to run a "Viable" cleanout that belongs to the resident. This "viable" cleanout should be a factory-fitting 4" cleanout, either a wye or combo wye, so we can easily get our equipment into and service the line. Once the service has been cleared, CCTV through this cleanout and determine the blockage location.
6. If CCTV inspection identifies the problem below the location where a city cleanout should be located, the Supervisor will schedule a cleanout installation during regular business hours.
7. If the problem causing the blockage is located within the customer's service line, notify them that the problem is in their portion of the lateral, the location, and the severity of the problem. Advise the resident of the City's policy for cleanout installation, and let them know this is a one-time service, and the City will not clear future blockages from the homeowner's cleanout. Document all information in the CMMS under activity code- SPHCC (Sewer Plug Homeowner City Cleared) on a service request.

Private Commercial

When dispatched to a commercial property experiencing a spill, start containment immediately. Notify the manager to stop using water and to call a plumber. Ensure the manager understands that City staff will contain the spill until their plumber responds, and they will be billed for staff and equipment. If, after 60 minutes, the plumber doesn't show, notify Placer County Health Department. Notify your supervisor that the health department has been called and discuss possibly clearing the main or service.

Appendix E- Sewer Lift Station Failure Response

This procedure aims to define strategies necessary to prevent a spill from a lift station in the event of a power or component failure within a lift station. The City of Roseville operates and maintains 17 neighborhood lift stations. Each station is equipped with SCADA, monitored 24 hours per day by wastewater treatment plant personnel. In addition, each station has the maximum allowable downtime posted inside the door of each control panel. This identifies the retention time and the storage capacity in the collection system assets before a spill occurs. The potential spill point manhole is also identified to assist on-call personnel in determining the remaining downtime. In the event of a lift station failure, the plant operator will notify the answering service that an alarm has been activated at a station, and the on-call service worker will respond and assess the alarm.

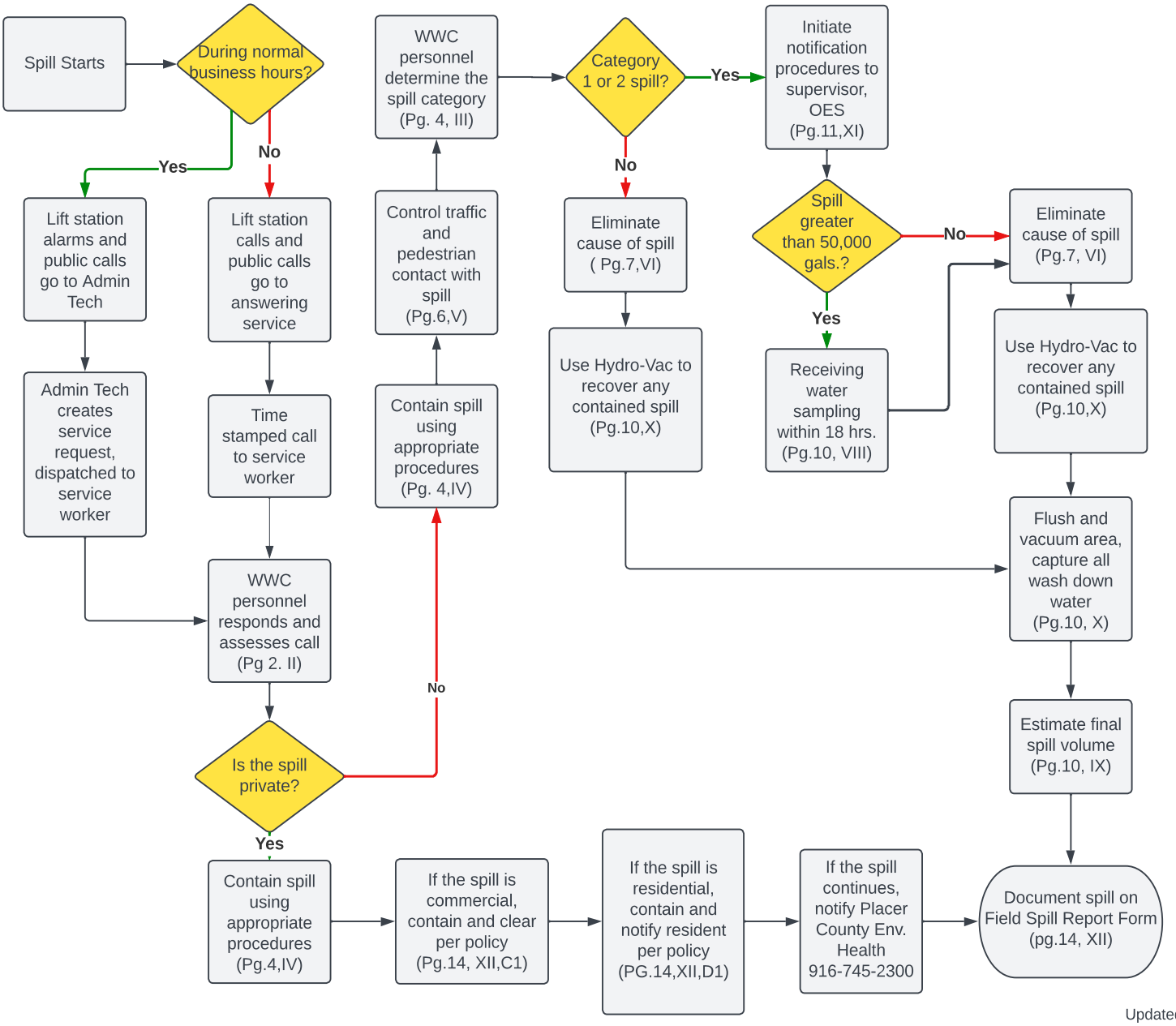
If no power is present in the panel, the service worker will:

1. Contact Roseville Electric at 774-5620 to verify they know about the outage.
2. Determine the level and remaining downtime left in the station.
3. If downtime exceeds the maximum allowable retention, the on-call service worker will call collection system personnel off the standby list to get a Hydro-Vac en route. The Hydro-Vac will decant water at an identified point in the system, which won't affect the left station levels. If it appears that one Hydro-Vac won't keep up with flows, the on-call service worker will call in additional personnel with Hydro-Vac to maintain levels in the station.
4. If an outage appears to be a lengthy process, contact the supervisor. A portable generator may be needed. In this event, an electrician will be required.
5. Once flows are maintained, contact Supervisor to make them aware of the situation.

If power is present in the station, but pumps are not operating, the service worker will:

1. Attempt to run the pumps in "hand" mode to eliminate the possibility of a spill
2. If the pump operates in "hand," continue operating and monitor the levels in the wet well. Contact the On Call Electrician at 916-532-0612 and continue to monitor.
3. If the station does not operate in hand mode, call additional personnel in with Hydro-Vac to monitor wet well levels. Vacuum and decant accordingly until the problem is rectified.
4. If it appears that one Hydro-Vac won't keep up with the flow into the wet well, mobilize a second Hydro-Vac to maintain the levels in the station.
5. Stand by and assist the on-call electrician until the station is operational.

Appendix F- Spill Response Chart



Updated 12 APR 23

Appendix G- Field Spill Report

This Page was Left Intentionally Blank

CITY OF ROSEVILLE CALIFORNIA Environmental Utilities

Spill Field Report Form

Resident Asked to Stop All Water Use? [ ] Yes [ ] No Spilling Upon Arrival? [ ] Yes [ ] No

First Responder:_____ Date:_____

Did the spill discharge to a storm drain conveyance system flowing to surface water [ ] Yes [ ] No

Was all wastewater fully captured and removed from the storm drain conveyance system [ ] Yes [ ] No

Estimate volume that reached a storm drain conveyance system flowing to surface water _____Gals.

Estimate volume recovered from storm drain conveyance system flowing to surface water _____Gals.

Estimate spill volume discharged directly to surface water (Category 1) _____Gals.

Estimate spill volume recovered from surface water (Category 1) _____Gals.

Estimate spill volume discharged to land _____Gals.

Estimate spill volume recovered from discharge to land _____Gals.

Spill Rate (GPM) _____ Total Spill Volume _____ Gals. Total Volume Recovered _____ Gals.

The location where the captured spill and washdown water was disposed of: _____

Address of Call:_____ Weather Conditions: _____

Spill Category (Place an X)		
	Category 1	Any volume that discharges to surface water, or a dry surface water body with no flow, or storm drain system and is not fully captured- ***Use supplemental sheet***
	Category 2	A spill of 1,000 gallons or greater that does not discharge to a surface water – ***Use supplemental sheet***
	Category 3	A spill of 50 gallons and less than 1,000 gallons that does not discharge to a surface water
	Category 4	A spill of less than 50 gallons that does not discharge to a surface water
	Private	If Private Commercial, get a signed Miscellaneous Billing Charge Form from Manager

Spill Specific Times				
Estimated Spill Start Time:	[ ]am [ ]pm	Did Caller Notice Active Spill?	[ ] Y [ ] N	[ ]am[ ] pm
Time Call Received:	[ ]am [ ]pm	Were Drains Running Slowly?	[ ] Y [ ] N	[ ]am[ ] pm
Arrival Time	[ ]am [ ]pm	Neighbors Notice Active Spill?	[ ] Y [ ] N	[ ]am[ ] pm
Spill End Time	[ ]am [ ]pm			

Start and stop time determination (Refer to Appendix A in SERP):

_____

_____

_____

_____

_____

Number of Spill Appearance Points: _____

If multiple appearance points are in a single event, photograph the point closest to the spill origin.

	Building or Structure		Force Main		Gravity Main		Manhole		Cleanout
	Other:		List Asset ID #'s						

Spill Appearance Point:

Failure Location: (select all that apply)

	Lower Lateral		Lift Station		Gravity Main		Force Main
	Upper Lateral- Private		Other:		List Asset ID#'s		

	Debris-Rags		Root Intrusion		Grease
	Debris-Construction		Lift Station Failure-Mechanical		Non-Dispersables
	Pipe/Structural Failure		Lift Station Failure- Electrical		Vandalism
	Natural Disaster		Rainfall Exceeded Capacity-I&I		WWC Staff Caused
	Other-(please list)				

SSO Cause: (select all that apply)

	Building or Structure		Storm Drain		Paved Surface		Surface Water		Landscape
	Street Curb/Gutter		Unpaved Surface		Other:				

Final Spill Destination:

Containment Procedures:

	Rubber May w/Sandbags		Rubber Berm		Dry Sweep
	Air Plug		Hydro-Vac		Dirt Berm
	By Pass Pumping		Naturally Contained (dirt/debris, misaligned gutter-pan)		

Spill Response Activities:

	Mitigated Effects of Spill		Contained All or a Portion of Spill		Restored Flow
	CCTV Inspected for Cause		Hydro Affected Storm Drains		Document Spill Spread
	Appropriate Photos Taken		Properly Dispose of Washdown and Captured Wastewater		

Description of Spill Response Activities and Actions Taken:

_____

_____

_____

_____

_____

_____

_____

Spill Spread

Document the spill spread and magnitude by providing a sketch starting at the appearance point and ending at either the containment point or the endpoint of the spill. In addition, provide area measurements of the spill and depths of ponded water to get an average depth to estimate the volume. Finally, select the surface type (s) where the spill occurred and label the sketch accordingly.

[ ] Landscape [ ] Asphalt [ ] Concrete [ ] Dirt [ ] Other _____

Spill Volume Estimation Method (select that apply)

	Measured Volume		Flow Estimation Chart		Flow Rate and Duration
	Estimated Flow EDU		City Design Standard 9-2		NCPI Chart
	Hydraulic Model		SCADA and Pump Info		Other:

Describe your process for volume estimation:

_____

_____

_____

_____

_____

_____

Estimated Flow EDU Chart:

Time Period	Estimated City Flow Rate Per EDU (190 gpd)				Spill	
	A	B	C	D	E	F
	Gallons Per Period	Hours Per Period	A÷B = Gals. Per Hour	C÷60 = Gals. Per Min.	Minutes Spill Was Active	D x E= Gallons Spilled Per Period
6 am-Noon	75	6	12.5	.21		
Noon – 6 pm	55	6	9.16	.15		
6 pm - Midnight	50	6	8.33	.14		
Midnight -6am	10	6	1.67	.03		
Total Estimated Spill Volume						

City Design Standard 9-2:

Land Use Designation	Units	Flow Factor (GPD/Unit) 1,3
Commercial	GPD per acre	850
Heavy Industrial	GPD per acre	850
Light Industrial	GPD per acre	850
Mixed Use	GPD per acre	2,300
Public/Quasi-Public	GPD per acre	660
Schools	GPD per acre	170
Residential 1 DU	GPD per acre	190
Residential 2 DU	GPD per acre	190
Residential 3 DU	GPD per acre	190
Residential Multiple DU[2]	GPD per acre or GPD per DU	2040 or 130
Parks > 10 Acres	GPD per acre	10

Contacts and Reporting:

LRO or their designee to contact OES and obtain a Control Number

OES 1-800-852-7550 Time Called _____ AM PM Control Number _____

Additional numbers for Reference

Ca Fish and Wildlife 916-445-0045 (option 2) Time Called _____AM PM

Placer County Environmental Health 916-745-2300 Time Called _____AM PM

EVENT ID #_____

Contact	Time	Name
Supervisor- Category 1 or 2	[ ] AM [ ] PM	
Request Additional Support *	[ ] AM [ ] PM	
	[ ] AM [ ] PM	
	[ ] AM [ ] PM	
	[ ] AM [ ] PM	
	[ ] AM [ ] PM	
Lab Personnel	[ ] AM [ ] PM	
Risk Management	[ ] AM [ ] PM	

CERT ID # _____

Conversion Tables

Inches	Feet
1/64	.0013
1/32	.0026
1/16	.005
1/8	.010
¼	.021
3/8	.031
½	.042
5/8	.052
¾	.063
7/8	.073
1	.083
2	.17
3	.25
4	.33
5	.42
6	.50
7	.58
8	.67
9	.75
10	.83
11	.92
12	1.0

Length X Width X Depth = Volume (ft^3)

Volume (ft^3) X 7.48 = Gallons

Use the conversion chart to convert inches into feet.

If you are unable to measure the water depth, use the following measurements:

1/64" (.0013 feet) for depth of wet areas on concrete

1/32" (.0026 feet) for depth of wet areas on asphalt

Area Calculation(sq.ft.)

Rectangle = Length (ft) X Width (ft)

Triangle = Height (ft) X Base (ft) X .5

Circle = $Diameter^2$ X .785

If additional lines are needed, use the notes sheet

Notes:

Supplemental Sheet- Category 1 or 2 Spill Only

If a spill is a Category 1 or 2, at a minimum, OES requires the information below to obtain a Control Number. The Enrollee shall notify OES within 2 hours of knowledge of the spill. Notify the Supervisor as soon as the information is gathered, then continue to complete the remaining Spill Field Report Form.

Spill Category (Place X)

	Category 1	Any volume that discharges to surface water, a dry surface water body with no flow, or a storm drain system and is not fully captured
	Category 2	A spill of 1,000 gallons or greater that does not discharge to a surface water

Date Notified:_____ Time Notified:_____

Spill Location : _____ Cross Street: _____

Estimated Spill Volume (Gallons) _____ Estimated Spill Rate From System (GPM)_____

Estimated Discharge Rate to : Waters of the State _____(GPM)

Drainage Conveyance System_____(GPM)

Brief Spill Incident Narrative:

_____

_____

_____

_____

_____

Spill Cause

	Debris-Rags		Root Intrusion		Grease
	Debris-Construction		Lift Station Failure-Mechanical		Non-Dispersables
	Pipe/Structural Failure		Lift Station Failure- Electrical		Vandalism
	Natural Disaster		Rainfall Exceeded Capacity-I&I		WWC Staff Caused
	Other-(please list)				

Amount of Spill Contained (Gals.)_____ Name of Affected Surface Waters_____

Description of impact to Surface Waters:

_____

_____

_____

Required Photographs: (check box)

[ ] Waterbody bank erosion [ ] Water Sheen (potential from grease or oil)

[ ] Floating matter [ ] Discoloration of water [ ] Impact to receiving water

Appendix 9-1

City Performance Metrics and Key Performance Indicators

SSS WDR Element	SSS WDR Ref.	Description	Performance Indicator	Unit	Target	KPI Data FY 14/15	KPI Data FY 15/16	KPI Data FY 16/17	KPI Data FY 17/18	KPI Data FY 18/19	KPI Data FY 19/20	KPI Data FY 20/21	KPI DATA FY 21/22	KPI DATA FY 22/23	KPI DATA FY 23/24	Audit Frequency	Responsible Party
Organization	D.ii.c	Chain of Communication	Average response to customer inquiry	Minute	40	19.58	23	20	21	20	21	21	20	20	20	Quarterly	WW Superintendent
			Total customer service requests	Number	0	915	1549	533	302	288	523	325	618	674	252	Quarterly	WW Superintendent
			Total sewer odor complaints	Number	0	9	43	50	39	45	10	24	7	10	25	Quarterly	WW Superintendent
			Total roache complants	Number									N/A	N/A	106	Quarterly	WW Superintendent
			Average rating in customer service card	Number	5	5	5	5	5	5	5	5	4.93	5	5	Quarterly	WW Superintendent
O&M	D.iv.a	Maps	Average response time to map update requests	Days	90	90	90	90	90	90	90	90	30	10	10	Quarterly	WW Superintendent
			Miles of Pipe / Main	Miles									286.05	597.93	602.49	Annually	WW Superintendent
			Miles of Pipe /Laterals	Miles									286.26	291.88	292.93	Annually	WW Superintendent
			Miles of Force Main	Miles										9.9	9.9	Annually	WW Superintendent
	D.iv.b	PM Activities	Manholes Inspection performed	Number	0	2493	3575	1547	1511	149	293	88	0	0	0	Quarterly	WW Superintendent
			Sewer main flushed per year	Miles	250	284	248	295	283.12	226.1	235.9	296.14	288.73	301.36	146.12	Quarterly	WW Superintendent
			Sewer laterals chemically treated per year	Number	1100								1106	1088	404	Quarterly	WW Superintendent
			Sewer laterals mechanically cleaned (eeled) per year	Number	0	14.32	14.77	7.41	1.07	268	235	74	146	107	47	Quarterly	WW Superintendent
			Working staff time to PM program	%	80%	85%	82%	82%	84%	84%	83%	84%	85%	85%	85%	Quarterly	WW Superintendent
			Number of customer accounts per WW employee	Number	561	1517	1554	1772	1757	1943	1873	1873	1852	1944	1821	Quarterly	WW Superintendent
			Average cost of hydro cleaning	$/lf	$0.36	$0.32	$0.33	$0.29	$0.32	$0.34	$0.34	$0.34	N/A	N/A	N/A	Annually	WW Superintendent
			Average cost of sewer mechanical cleaning	$/lf	$1.60	$1.20	$0.77	$0.94	$1.66	$0.30	$0.30	$0.30	N/A	N/A	N/A	Annually	WW Superintendent
	D.iv.c	R&R Plan	Manholes rehabilitated	Number	50	0	0	0	0	0	0	0	0	0	1	Quarterly	WW Superintendent
			Sewer main CCTV inspected per year	Miles	30	75	84.32	59.71	64.1	119.9	94.65	38.57	50.05	51.59	24.82	Quarterly	WW Superintendent
			Sewer laterals CCTV inspected per year	Miles	16	26	35.71	32.51	36.14	29.74	22.46	27.88	28.76	29.99	18.68	Quarterly	WW Superintendent
			Sewer cleanouts installed per year	Number	75	76	83	144	141	67	118	58	46	24	11	Quarterly	WW Superintendent
			Sewer Laterals Rehabilitated	Number	50	48	60	85	89	74	82	110	79	51	37	Quarterly	WW Superintendent
			Total miles rehabed or replaced per year (main)	Miles	5	6	0	0	1.07	0.05	0.09	3.4	3.4	0	3.75	Annually	WW Superintendent
			Total miles rehabed or replaced per year (lateral)	Miles	0.25	0.16	0.27	0.66	0.42	0.45	0.46	0.62	0.43	0.29	0.23	Annually	WW Superintendent
			Annual capitol budget sewer rehab/replacement	$/M	$1.80	$1.05	$1.36	$2.61	$2.25	$2.70	$2.70	$2.10	$3.40	$3.20	$3.11	Annually	WW Superintendent
			Average cost of CCTV main	$/lf	$0.53	$0.41	$0.41	$0.36	$0.40	$0.60	$0.75	$1.85	N/A	N/A	N/A	Annually	WW Superintendent
			Average cost of CCTV lateral	$/lf	$1.34	$1.11	$1.15	$1.04	$1.00	$1.24	$1.29	$1.28	N/A	N/A	N/A	Annually	WW Superintendent
	D.iv.d	Training	On the job accidents	Number	0	5	3	3	4	10	8	6	0	0	1	Quarterly	EU Safety Coordinator
	D.iv.e	Critical Parts	% of required number of identified critical parts are stocked	%	100	100	100	100	100	100	100	100	100	100	100	Annually	Materials Technician
Design	D.v.a&b	Construction	% of new sewer main accepted vs. inspected	%	100	100	100	100	100	100	100	100	100	100	100	Annually	WW Supervisor
			% of new sewer lateral accepted vs. inspected	%	100	100	100	100	100	100	100	100	100	100	100	Annually	WW Supervisor
OERP	D.vi.a	Notification	Average response time to SSO	Minutes	40	20	23	20	17	21	22	17	20	34	21	Quarterly	WW Superintendent
	D.vi.b	SSO Response	Average SSO duration (main)	Minutes	40	n/a	70	0	0	0	154	146	1670	140.8	289	Quarterly	WW Superintendent
			Average SSO duration (lateral)	Minutes	40	n/a	37	48	36	171	245	285	94	25.28	50	Quarterly	WW Superintendent
FOG	D.vii.a	Public Education	FOG public education outreach program events per year	Number	4	3	4	3	3	2	1	1	1	2	2	Annually	Environmental Utilities PIO
	D.vii.b	FOG Disposal	Gallons of FOG curbside pickup per year	Gallons	25	179.75	293.1	373.25	296	506	323	595	476	445	230	Annually	Refuse Division
	D.vii.d	BMPs &Devices	% of total FSE's with grease removal devices	%	90	90	97	98	98	98	98	98	94	94	94	Annually	FOG Supervisor
			% of total FSE's with a variance	%	5	4	4	4	4	4	4	4	4	4	4	Annually	FOG Supervisor
	D.vii.e	FOG Inspections	FSE FOG inspections per year	Number	294	n/a	n/a	181	231	N/A	N/A	221	756	1012	492	Annually	FOG Supervisor
			Number of new FSE permits issued per year	Number	5	n/a	n/a	40	46	N/A	N/A	36	31	35	19	Quarterly	FOG Supervisor
	D.vii.f	Hot Spots	% of hotspot pipes CCTV inspected each year	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0	Annually	WW Supervisor
			Number of SSO's caused by hot spots	Number	0	0	0	0	0	0	0	0	0	1	0	Quarterly	WW Superintendent
			SSO volume casued by hot spots	Gallons	0	0	0	0	0	0	0	0	0	33	0	Quarterly	WW Superintendent
MMM	D.ix.e	SSO Trends	Total number of SSO's mains and laterals	Number	35	42	39	24	25	31	32	51	32	30	17	Quarterly	WW Superintendent
			Total volume SSO's mains and laterals	Gallons	2000	1202	2523	1086	1565	869	517	772	77,828	13,443	381842	Quarterly	WW Superintendent
			% of total SSO volume recovered	%	100	94.5	95.42	91.25	53.86	37.63	86.8	63	50.1	63%	24.30%	Quarterly	WW Superintendent
			Total number of wet weather SSO's	Number	0	0	0	0	0	0	0	0	1	2	0	Quarterly	WW Superintendent
			Total volume of wet weather SSO's	Gallons	0	0	0	0	0	0	0	0	1357	12,920	0	Quarterly	WW Superintendent
			% of SSO's caused by FOG (main)	%	1	50	50	0	0	100%	0	0	0	40%	0.06%	Quarterly	WW Superintendent
			% of SSO's caused by roots (main)	%	70	0	0	0	0	0	0	50%	33%	0%	99.92%	Quarterly	WW Superintendent
			% of SSO's caused by debris/rags (main)	%	0	0	0	0	0	0	100%	50%	0%	60%	0	Quarterly	WW Superintendent
			Number of SSO's caused by LS failure	Number	0	0	0	0	0	0	0	0	0	0	0	Quarterly	WW Superintendent
			Number of SSO's caused by pipe/structural failures	Number	0	0	1	1	3	1	3	14	1	1	4	Quarterly	WW Superintendent
			% of SSO's caused by FOG (laterals)	%	10	0	0	0	0	0	0	0	1	12.50%	0	Quarterly	WW Superintendent
			% of SSO's casued by roots (laterals)	%	75	77.5	84	87	48	20	16	35	26	56%	46.20%	Quarterly	WW Superintendent
			% of SSO's casued by debris/rags (laterals)	%	0	12.5	10.8	9	28	9	11	2	7	24%	5.60%	Quarterly	WW Superintendent
			Repeats SSO's within two years	Number	0	2	0	0	0	4	1	1	0	1	1	Quarterly	WW Superintendent
			Number of Category 1 SSO's	Number	0	0	0	0	1	0	0	0	2	2	1	Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year- Category 2	Number	2	0	1	0	0	0	0	0	0	0	TBD	Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year - lateral	Number	15	16.26	15.04	9.35	8.81	9.56	10.24	16.38	10.13	11.5	TBD	Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year -mains	Number	0.6	0.4	0.4	0	0.19	0.52	0.52	0.35	0.51	0.8	TBD	Quarterly	WW Superintendent
			Flooding claims per year	Number	0	1	0	0					1	1	1	Quarterly	WW Superintendent
			Total Cost of claims per year	$	0		0	0					430	16,620	1,431	Quarterly	Risk Management
			Flooding and Claims											Update 23JAN24			

Appendix 9-2

Left Empty for Future Appendices

Appendix 9-3

City Spill Performance Report

Appendix 1 — City Spill Performance Report

The purpose of this Appendix is to provide visual data tools to showcase the City's historic spill performance compared with other collection system agencies within the Central Valley Regional Water Board area and state from the required City Audit period 5/2/2021 to 5/2/2024).

List of Figures

Figure 1 – City Spill Dashboard during SSMP Audit Period (May 2021-May 2024) 2
Figure 2 - City Spill Dashboard (volume of spills by year during SSMP Audit Period (May 2021-May 2024) 3
Figure 3 - City Spill Net Volume compared to agencies by year during SSMP Audit Period (May 2021-May 2024) 4
Figure 4 - City Spill Volumes Recovered compared to agencies by year during SSMP Audit Period (May 2021-May 2024) 5
Figure 5 - City Spill Causes (by # of spill) during SSMP Audit Period (May 2021-May 2024)..... 6
Figure 6 - City Spill Causes (by volume of spill) during SSMP Audit Period (May 2021-May 2024) 7
Figure 3 - Spill Causes (by Where Failure Occurred, May 2021-May 2024)..... 8
Figure 7 – City Spill Counts of Where Failures Occurred during SSMP Audit Period (May 2021-May 2024) 8
Figure 8 – City Spill Benchmarks during SSMP Audit period (May 2021-May 2024) 9

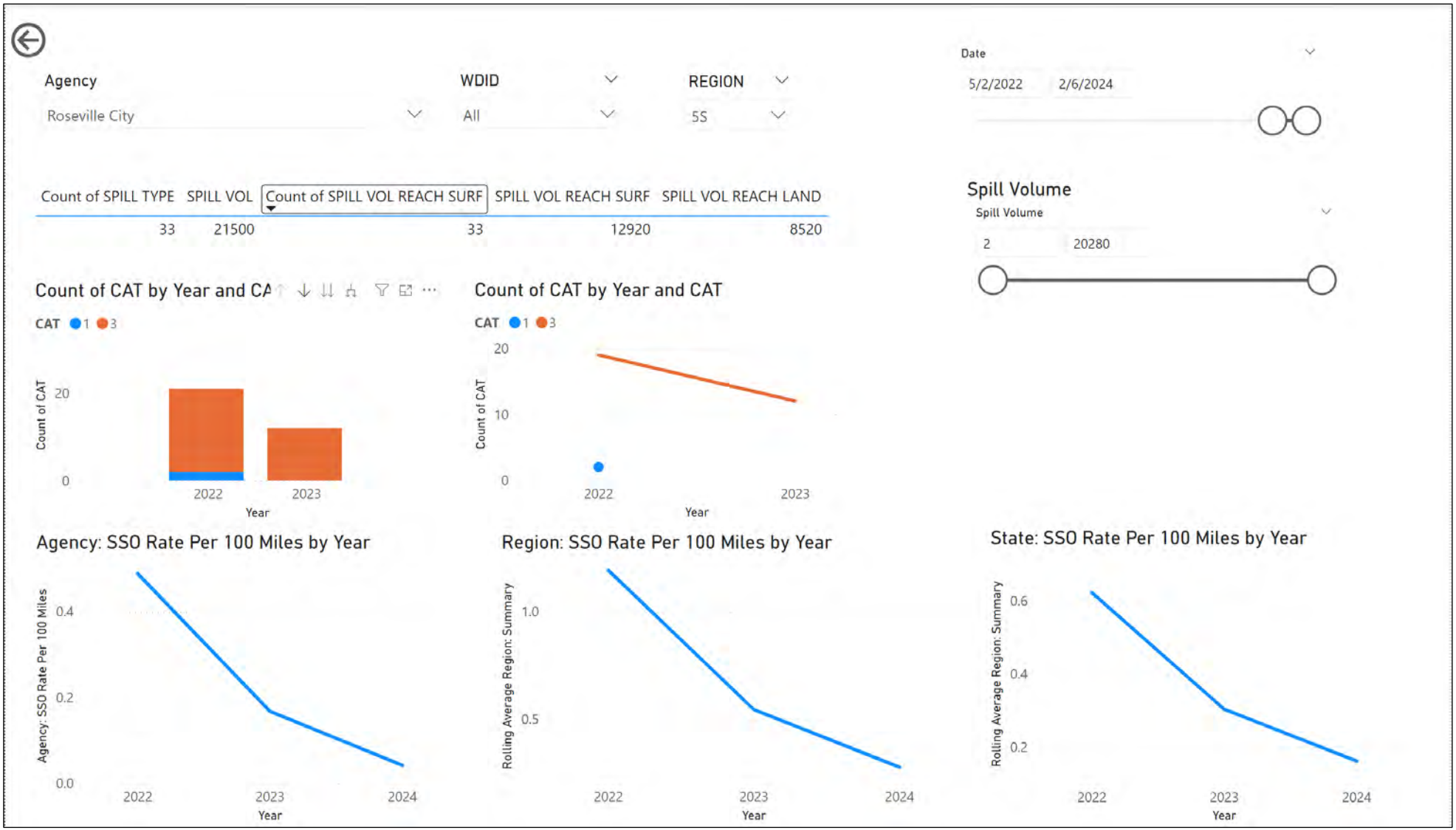


Figure 1 – City Spill Dashboard during SSMP Audit Period (May 2021-May 2024)

Observation: The City's rolling average spill rate per year during the SSMP Audit period decreased from 0.49 spills/100 miles of sewer per year to 0.04 spills/100 miles of sewer per year.

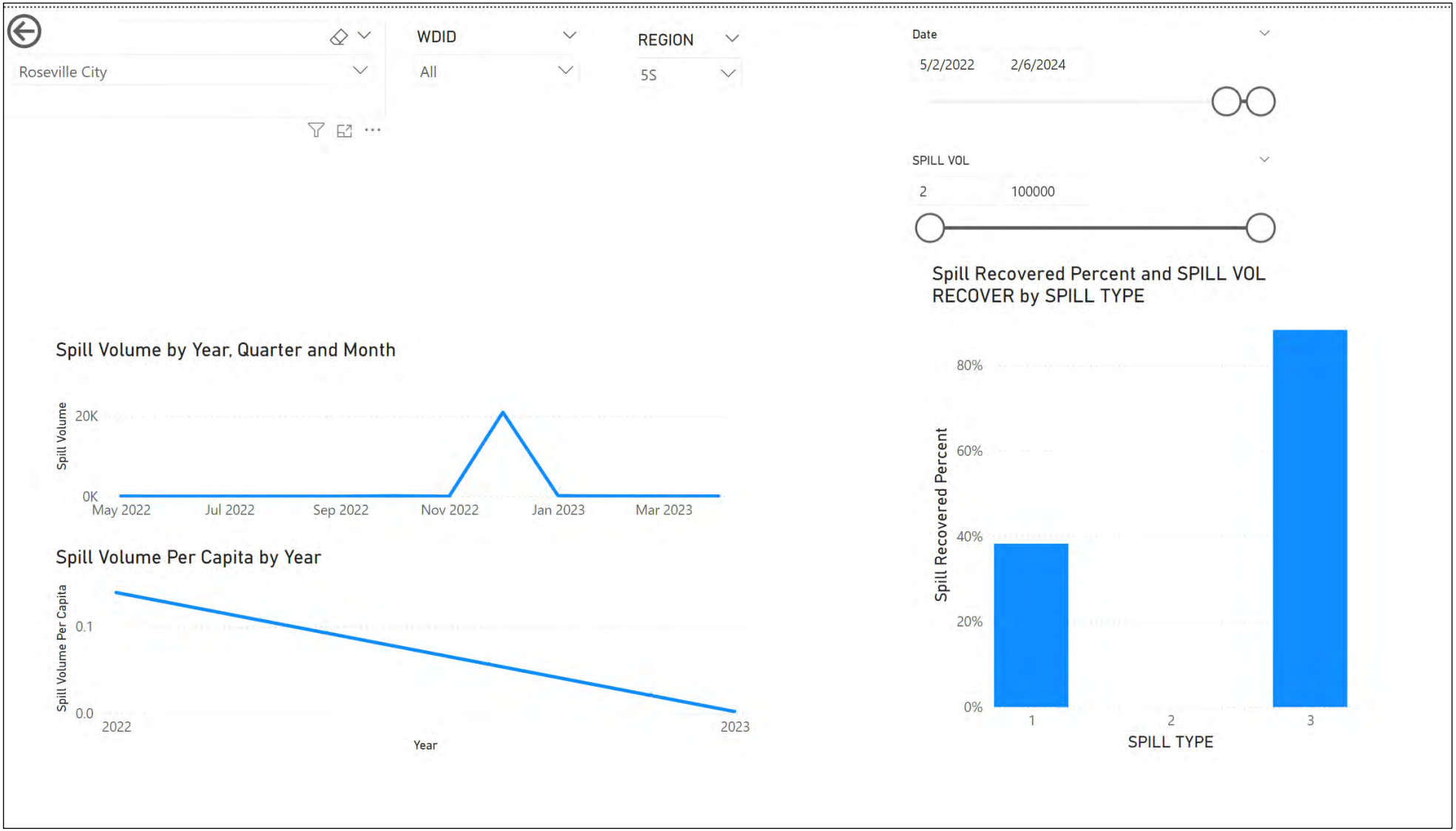


Figure 2 - City Spill Dashboard (volume of spills by year during SSMP Audit Period (May 2021-May 2024)

Observations: The City's volume of spills per capita (population) decreased during the SSMP Audit period from 0.139 gallons per capita to 0.002 gallons per capita). The City's average recovery (%) for Category 1 spills averaged 38% and 88% for Category 3 spills during the SSMP Audit period.

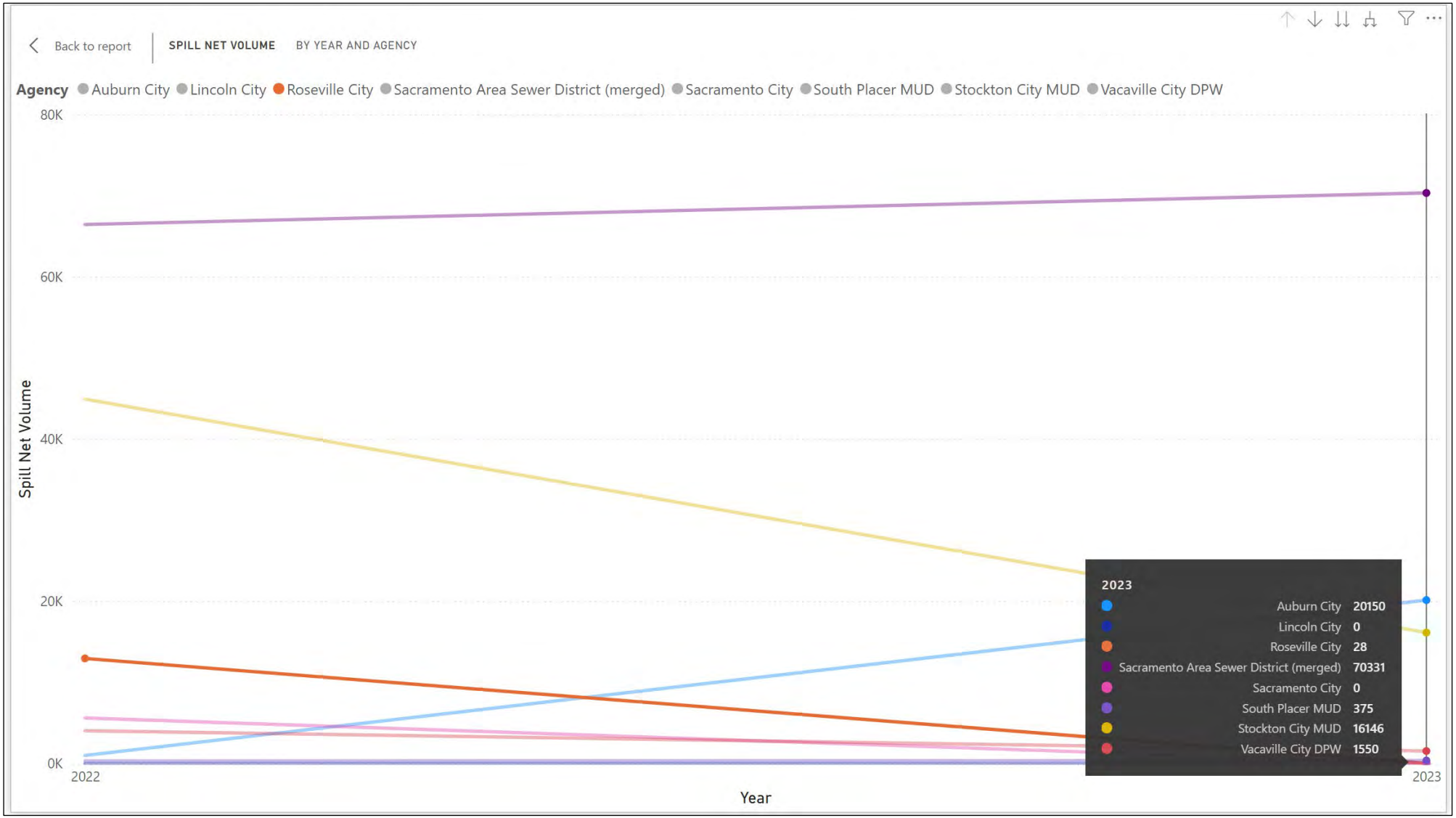


Figure 3 - City Spill Net Volume compared to agencies by year during SSMP Audit Period (May 2021-May 2024)

Observations: The City's net spill volume decreased during the SSMP Audit period from 12,960 gallons in 2022 to 28 gallons. The City's average recovery (%) for Category 1 spills averaged 38% and 88% for Category 3 spills during the SSMP Audit period.

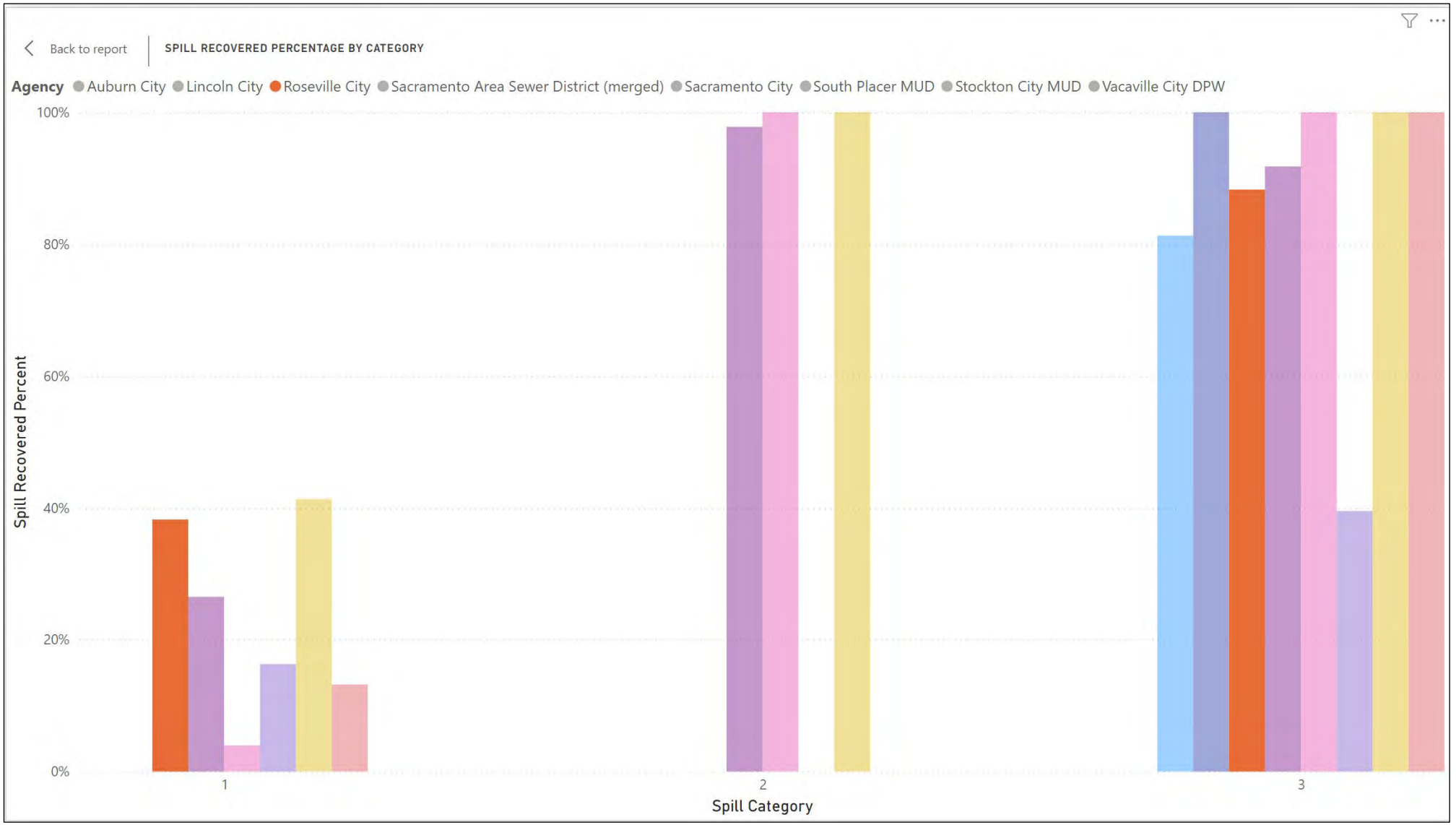


Figure 4 - City Spill Volumes Recovered compared to agencies by year during SSMP Audit Period (May 2021-May 2024)

Observations: The City's spill % of spill volume recovered for Category 1 spills (38%) and for Category 3 spills (88%) was higher than most other agencies within the region during the SSMP Audit period.

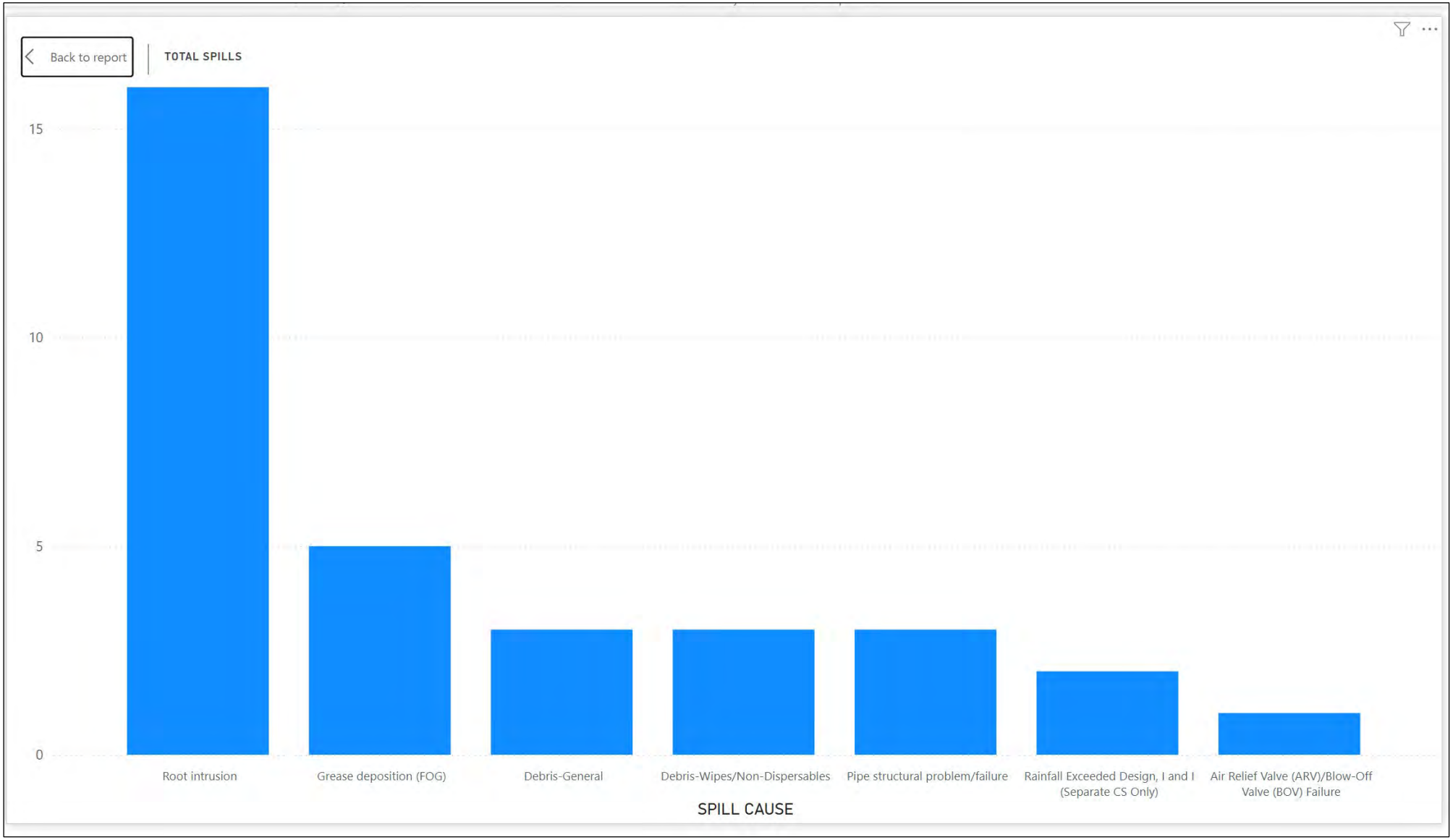


Figure 5 - City Spill Causes (by # of spill) during SSMP Audit Period (May 2021-May 2024)

Observation: The City's spill main causes (by number of spills) were root intrusion and grease during the SSMP Audit period.

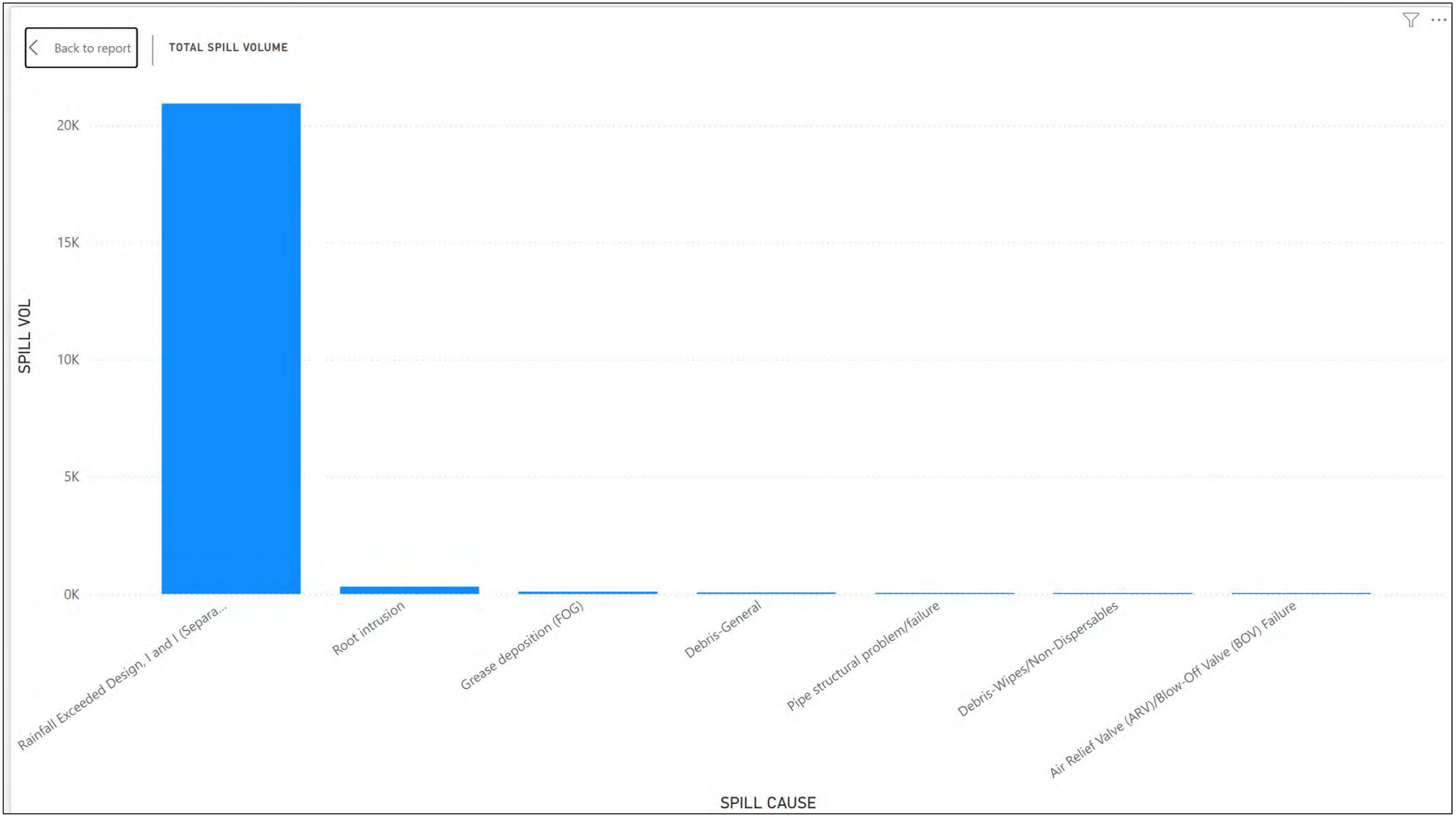


Figure 6 - City Spill Causes (by volume of spill) during SSMP Audit Period (May 2021-May 2024)

Observation: The City's spill main cause (by volume of spills) was rainfall (wet weather) during the SSMP Audit period.

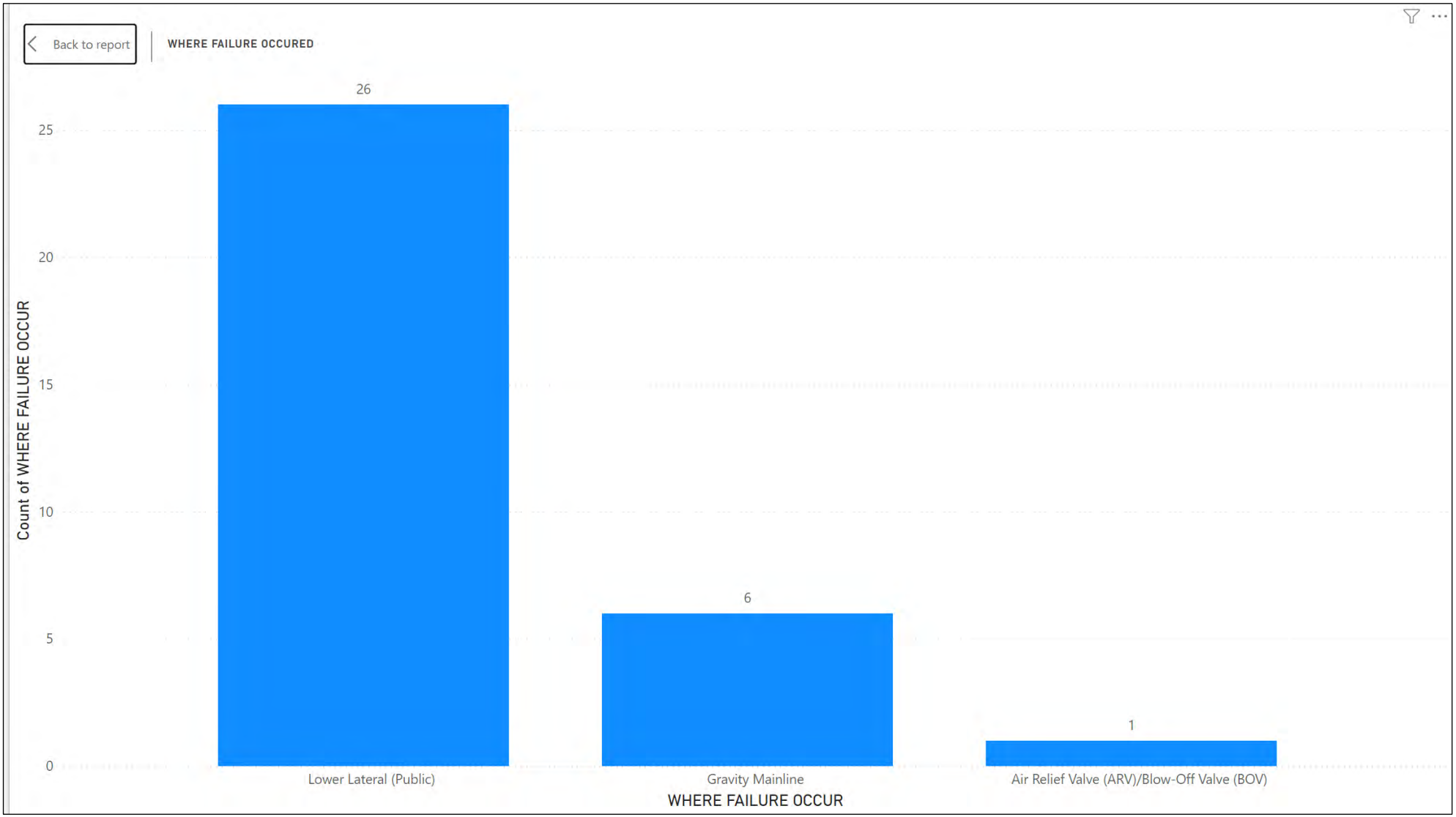


Figure 7 – City Spill Counts of Where Failures Occurred during SSMP Audit Period (May 2021-May 2024)

Observation: The City's main asset location were failures occurred was from lower sewer laterals during the SSMP Audit period.

SPILL ID	AGENCY NOTIFY DT	OPRTOR ARRVL DT	Spill CREATED DT	EST END DT	Agency Notify - Spill Created (Days)	AGENCY NOTIFY - OP ARR (Days)	AGENCY NOTIFY - OP ARR (Hours)	AGENCY NOTIFY - OP ARR (Minutes)
888126	4/8/2023 15:36	4/8/2023 16:30	5/5/2023 0:00	4/8/2023 11:00	27	0	1	54
888177	4/3/2023 10:30	4/3/2023 11:20	5/9/2023 0:00	4/3/2023 11:53	36	0	1	50
887707	3/17/2023 11:09	3/17/2023 11:24	4/17/2023 0:00	3/17/2023 11:24	31	0	0	15
887182	2/25/2023 15:39	2/25/2023 16:12	3/20/2023 0:00	2/25/2023 16:17	23	0	1	33
886996	2/18/2023 8:49	2/18/2023 9:22	3/10/2023 0:00	2/18/2023 9:22	20	0	1	33
887026	2/17/2023 14:20	2/17/2023 14:30	3/13/2023 0:00	2/17/2023 14:35	24	0	0	10
886942	2/15/2023 17:49	2/15/2023 18:36	3/8/2023 0:00	2/15/2023 18:42	21	0	1	47
887213	2/15/2023 14:21	2/15/2023 14:41	3/21/2023 0:00	2/15/2023 14:46	34	0	0	20
886923	2/14/2023 12:07	2/14/2023 12:19	3/7/2023 0:00	2/14/2023 12:19	21	0	0	12
886143	1/23/2023 10:27	1/23/2023 10:36	2/15/2023 0:00	1/23/2023 10:36	23	0	0	9
886302	1/23/2023 7:20	1/23/2023 7:34	2/21/2023 0:00	1/23/2023 7:34	29	0	0	14
886050	1/18/2023 8:52	1/18/2023 9:05	2/10/2023 0:00	1/18/2023 9:05	23	0	1	13
885184	12/31/2022 21:14	12/31/2022 7:46	1/4/2023 0:00	12/31/2022 23:22	4	0	-14	-808
885166	12/31/2022 18:40	12/31/2022 19:07	1/4/2023 0:00	1/1/2023 0:03	4	0	1	27
885444	12/22/2022 13:00	12/22/2022 13:18	1/13/2023 0:00	12/22/2022 13:18	22	0	0	18
885443	12/7/2022 10:58	12/7/2022 11:06	1/13/2023 0:00	12/7/2022 11:06	37	0	1	8
885074	12/4/2022 14:03	12/4/2022 14:35	12/30/2022 0:00	12/4/2022 14:35	26	0	0	32
885042	12/3/2022 11:42	12/3/2022 12:14	12/29/2022 0:00	12/3/2022 12:14	26	0	1	32
884664	11/15/2022 10:29	11/15/2022 10:51	12/7/2022 0:00	11/15/2022 11:00	22	0	0	22
884413	11/9/2022 16:14	11/9/2022 17:25	11/23/2022 0:00	11/9/2022 16:15	14	0	1	71
884376	11/4/2022 19:00	11/4/2022 19:00	11/22/2022 0:00	11/4/2022 19:00	18	0	0	0
884332	10/31/2022 17:22	10/31/2022 17:42	11/18/2022 0:00	10/31/2022 17:42	18	0	0	20
883827	10/14/2022 19:39	10/14/2022 20:17	10/19/2022 0:00	10/14/2022 20:17	5	0	1	38
883804	10/12/2022 15:58	10/12/2022 16:16	10/18/2022 0:00	10/12/2022 16:16	6	0	1	18
883741	9/27/2022 7:03	9/27/2022 7:30	10/12/2022 0:00	9/27/2022 7:30	15	0	0	27
882939	8/21/2022 12:42	8/21/2022 13:05	8/25/2022 0:00	8/21/2022 13:05	4	0	1	23
882862	8/11/2022 13:50	8/11/2022 13:58	8/22/2022 0:00	8/11/2022 13:58	11	0	0	8
882367	7/7/2022 16:58	7/7/2022 17:34	7/19/2022 0:00	7/7/2022 17:34	12	0	1	36
882603	7/1/2022 11:28	7/1/2022 11:37	8/3/2022 0:00	7/1/2022 11:37	33	0	0	9
882213	6/22/2022 8:19	6/22/2022 8:26	7/11/2022 0:00	6/22/2022 8:26	19	0	0	7
881796	6/4/2022 10:12	6/4/2022 10:31	6/16/2022 0:00	6/4/2022 9:30	12	0	0	19
881950	5/2/2022 20:33	5/2/2022 20:52	6/27/2022 0:00	5/2/2022 20:53	56	0	0	19
881952	5/2/2022 17:31	5/2/2022 17:53	6/27/2022 0:00	5/2/2022 17:53	56	0	0	22

Figure 8 – City Spill Benchmarks during SSMP Audit period (May 2021-May 2024)

Observations: The City averaged approximately 24 minutes between the agency spill notification time and operator arrival times (removing erroneous data logged for spill ID #885184 occurring on 12/31/2022). The City failed to notify Cal-OES within two hours (32 minutes late) for one spill occurring on 12/31/2022 (spill ID #885184. Erroneous data was also observed for two spills (ID #884376 and #881796). The City was fully compliant with providing draft and certified reports within the required timeframes for all Category 1 spills during the SSMP Audit.

Appendix 10-1

SSPM Internal Audit Fiscal Year 2010/2011

City of Roseville Wastewater Collection

FY 2010-2011 SSMP Program Audit (Internal)

City of Roseville Wastewater Collection

FY 2010-2011 SSMP Program Audit (Internal)

Table of Contents

Audit Tasks....2

Conclusion and Improvement Opportunities....3

Element 1: Goals....5

Element 2: Organization....5

Audit Elements:....5

Element 3: Legal Authority....6

Audit Elements:....6

Element 4: Operations and Maintenance....7

Audit Elements:....7

Element 5: Design and Performance Provisions....8

Audit Elements:....8

Element 6: Overflow Emergency Response Plan....8

Audit Items:....8

Element 7: Fats, Oils and Grease (FOG) Control Program....10

Audit Elements:....10

Element 8: System Evaluation and Capacity Assurance Plan (SECAP)....11

Audit Elements:....11

Element 9: Monitoring, Measurement, and Program Modifications....12

Element 10: SSMP Audits....13

Element 11: Communication Program....13

Certification of Audit:....14

SUPPORT DOCUMENTS,TRENDS AND DATA....15

ATTACHMENT 1....15

System Performance Metrics....16

Mainline Stoppages by Cause....17

Lateral Stoppages by Cause....18

Lateral/Mainline SSO Charts FY 07 to Present....19

Vactor Footage Chart....20

Sewer Lateral Cleaned Chart....21

City of Roseville Wastewater Collection

FY 2010-2011 SSMP Program Audit (Internal)

WDR Requirement for SSMP Element 10: SSMP Program Audits

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

Audit Tasks

The City of Roseville will complete biennial audits of the SSMP beginning in calendar year 2009. To ensure that the audit is performed objectively, this task will be assigned to individuals that are removed from the daily activities of the division. These individuals, along with the assistance from the Wastewater Collection Superintendent or Supervisor, must have a working knowledge of the collection system and the authority to carry out gathering the appropriate data to perform the audit. In addition to filling out the SSMP audit form, the following tasks, at a minimum shall be performed.

1. *Compare the records from the Computerized Maintenance and Management System (CMMS) of record, to the data reported to the California Integrated Water Quality System (CIWQS). Review performance metrics tracked by the division versus previous years to identify trends.*
2. *Review condition assessment data and rehabilitation philosophy/strategies with the Wastewater Superintendent or Supervisor and the Rehabilitation Manager.*
3. *Review records from previous internal audits, to ensure noted deficiencies have been addressed.*
4. *Review preventative maintenance schedules, response to SSOs, and mitigation of SSO causes.*
5. *Review SSO Emergency Response Plan and identify improvements if needed.*
6. *Identify accomplishments in improving the collection system.*
7. *Record all findings during the audit process on the attached SSMP Audit Form. This form will be the final audit report for the City of Roseville Wastewater Collection SSMP. This report will be kept on file along with other relevant SSMP documents on the city's internet website.*

Conclusion and Improvement Opportunities

The City of Roseville Wastewater Collection Division recognizes that the biennial audit of the SSMP and its programs are approximately 9 months late. Due to significant change within the division, and appointments of a new LRO and data submitter, the internal audit deadline was missed. The SSMP is a living document and is updated frequently. Although the online version may not contain the most recent SSMP, a revision log is available that lists all changes to the master document. The online document is updated periodically. The wastewater collection division's record for SSOs continues to be very good; reporting two spills from mainlines during fiscal year 2010/2011. Lateral overflows have increased, only slightly, but the wastewater collection division has an aggressive lateral maintenance program in place, and along with CIPP lining, looks to lower the number of overflows through these efforts. The city continually adjusts maintenance frequency to address these issues. There are several SSMP elements that need to be updated in city's SSMP. These are listed below:

1. The Executive Summary, boundary map, service area and population need to be updated and posted to the city's website.
2. Roseville goals, section 1.2 needs to be revised, as the development plan and implementation schedule in the SSMP are already completed.
3. All sections for Element 2 need to be updated on the city's website.
4. Appendix D-6 and D-7 need to be updated.
5. Element 6 Appendix F needs to be updated to include NASSCO training, and information needs to be posted to city's website.
6. Element 9.4 needs to be updated. Remove chemical root control and add lateral lining to monitor and measurement.
7. All elements need to be reviewed and posted to city's website.

City of Roseville Wastewater Collection

FY 2010-2011 SSMP Program Audit (Internal)

Name of Auditor (s)	Mark Cossairt Michael Zacharia		
Date of Audit	14 Mar 2012	Audit Period	FY 2010-2011
Collection System Overview			
Miles of Gravity Sewer Mains			522 Miles
Miles of Sewer Laterals			208 Miles
Number of Pump Stations			14
Population Served			118,788
Total Category 1 Spills	0	Total Category 2 Spills	13

Note: Information above is for FY 2010-2011

Element 1: Goals

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

Audit Elements:

- *Are goals, clearly stated, obtainable and measurable?*

SSMP Requirement	Current Y or N	If no, action items required
Are the goals stated in the SSMP still relevant and accurate in complying with the Waste Discharge Requirement (WDR)	*N*	*Review and revise goals. Goal one is obsolete. The city's SSMP development plan and implementation schedule is complete*

Element 2: Organization

The WDR/SSMP organization requirement specifies that the SSMP shall identify the LRO, management, administrative and maintenance positions and their contact information. It shall also include the chain of communication for reporting SSOs

Audit Elements:

- *SSMP Org Chart*
- *Legally Responsible Official (LRO)Designated*
- *Emergency Response Plan*
- *Chain of Communication Chart*

SSMP Requirement	Current Y or N	If No, action items required
Legal Responsible Official (LRO) designated	*N*	*LRO needs to be updated on city's website*
Lines of authority designated through organization chart. Is chart current and up to date?	*N*	*Section 2.2 needs to be updated, then placed on city's website*
Names and phone numbers for key management personnel.	*N*	*Management needs to be updated on city's website and general position descriptions need updating*

Contact information for maintenance personnel and after hour's response	*N*	*Information needs to be updated on city's website*
Chain of Communication reporting chart current and numbers current?	*N*	*Section needs to be updated on city's website, along with RWQCB contacts updated*

Element 3: Legal Authority

The WDR/SSMP Legal Authority requirement specifies that each enrollee must demonstrate that it possesses the necessary legal authority to enforce their sewer use ordinances, service agreements or other legally binding procedures.

Audit Elements:

- *City of Roseville Sewer Use and FOG Ordinance*
- *Design and Construction Standards*
- *Municipal Code –Sewer Use*

SSMP Requirement	Current Y or N	If No, action items required
Prevent illicit discharges into the sanitary sewer system	*Y*	*RMC 14.12.050*
Sewers and connections properly designed , constructed and inspected	*Y*	*City has updated construction and design specifications*
Ensure access for maintenance, inspection and repairs	*Y*	
Enforce violations of sewer use and fog ordinances	*Y*	*RMC 14.14 FOG for Food Service Establishments (FSE)*
Inter-agency and satellite agency agreements in place	*Y*	

Element 4: Operations and Maintenance

The WDR/SSMP Operation and Maintenance Program requirement specifies that each SSMP must include those elements that are appropriate and applicable to enrollee's system.

Audit Elements:

- *Mapping System*
- *Work Orders and Maintenance Schedules*
- *Condition Assessment Data*
- *Equipment and Parts Inventory*
- *Employee Training Records*
- *Capital Improvement Projects*
- *Interview Maintenance Staff*

SSMP Requirement	Current Y or N	If no, action items required
Maintain current mapping system with procedures for updating	*N*	*Business process needs to be developed to ensure mapping updates are completed*
Preventative maintenance schedules are sufficient in reducing or preventing SSOs	*Y*	
Document preventative maintenance work orders using CMMS	*Y*	*Sample of preventative maintenance schedule in appendix D-2*
Condition assessment program that identifies and ranks criticality of line segments for capital improvement	*Y*	*City currently is in Phase 10 of 21 phases on condition assessment. City currently is using Pipelogix software with NASSCO rating criteria*
Provide relevant technical training to sewer system staff	*Y*	*Add NASSCO training to Element 4.5*
Does the city allocate sufficient funds for operation and maintenance as well as Capital Improvement Projects (CIPs)	*Y*	
Maintain equipment inventory and critical spare parts sufficient for emergency response	*N*	*Update needed to Appendix D-6 and D-7*

Element 5: Design and Performance Provisions

The WDR/SSMP Design and Performance Provision requirement specifies that each enrollee have design and construction standards for installation, repair, inspection and rehabilitation for all new sewers and appurtenances.

Audit Elements:

- *City of Roseville Sanitary Sewer Design and Specifications*
- *City of Roseville Sanitary Sewer Construction Standards*
- *Interview Maintenance Staff*

SSMP Requirement	Current Y or N	If no, action items required
Design and construction standards for new sanitary sewer system facilities	*Y*	*City maintains and regularly updates design and construction standards*
Design and construction standards for repair and rehabilitation of existing sanitary sewer facilities	*Y*	
Procedures for inspection and acceptance of repaired and rehabilitated and new sanitary sewer facilities	*Y*	*Procedures are contained in city construction and design standards*
Standard operating procedures for existing sanitary sewer facilities	*Y*	*SOPs are trained on annually by staff and continually updated*

Element 6: Overflow Emergency Response Plan

The WDR/SSMP Overflow Emergency Response Plan requirement specifies that each enrollee shall develop and implement an Overflow Response Plan that identifies measures to protect public health and the environment.

Audit Items:

- *Compare CMMS Records with CIWQS Database Information*
- *Review SSO Emergency Response Plan (SSOERP)*
- *Notification Procedures Current and Relevant*
- *Review Performance Metrics SSO Data*
- *Review Standard Operating Procedures for Containment*
- *Review Training Records for Sanitary Sewer Overflow Response Plan(SSOERP)*

- *Interview Maintenance Staff*

SSMP Requirement	Current Y or N	If no, action items required
Procedures established for emergency response, notification and reporting of SSOs	*N*	*Updates needed to Appendix F. Changes to SSOERP flowchart are needed for notifications. Information needs to be updated on city's website*
Procedures established for proper training of SSOERP	*Y*	*SSOERP is trained on annually and documented in LMS*
Procedures established for contractor awareness and training of SSOERP while working on city infrastructure	*Y*	*Contractors are made aware of city's SSOERP in pre-construction meetings, and updated as needed depending on projects*
Emergency response plan addresses traffic and crowd control in the event of SSO	*Y*	*Contained in Appendix F-1 SSO Emergency Response Procedures*
Procedures to prevent the discharge of sewage to waters of the state	*Y*	*Procedures are addressed in SOP for containment measures*
Program and procedures established to correct or minimize the impacts of any SSOs that occur	*Y*	*Business process has been established*
Considering performance metric data, is SSOERP effective in handling SSOs	*Y*	

Element 7: Fats, Oils and Grease (FOG) Control Program

The WDR/SSMP FOG Source Control Program requirement specifies that each enrollee shall prepare and implement a program to reduce the amount of these substances discharged into the sanitary sewer system.

Audit Elements:

- *Municipal Code 14.14 FOG Program*
- *Food Service Establishment(FSE)- FOG Permit*
- *Public Outreach- FOG Disposal*
- *Hot Spot Hydro Schedules and Locations*
- *Interview Maintenance Staff and Industrial Waste Personnel*

SSMP Requirement	Current Y or N	If no, action items required
Does FOG program include public outreach schedule to educate public on proper handling and disposal of FOG	*Y*	*WW administration budgets annually for FOG education and awareness. Will provide plan and schedule in supporting documents*
Does the FOG program identify sections of the collection system subject to FOG blockages, establish an effective PM schedule and address source control measures to minimize these blockages	*Y*	*Hot spot cleaning schedule is attached in supporting documents*
Are requirements for grease removal devices BMPs, installations, record keeping and reporting established in the city's FOG Control Program	*Y*	*RMC 14.12.050(F)addresses the requirements for grease removal devices*
Does the city have sufficient authority to implement, inspect, and enforce the FOG Control Program	*Y*	*RMC 14.14*
Has the current FOG program been effective in minimizing blockages of sewer lines from discharges of FOG to the system	*Y*	

Element 8: System Evaluation and Capacity Assurance Plan (SECAP)

The WDR/SSMP SECAP requirement specifies that each enrollee shall prepare and implement a capital improvement plan (CIP) that provides hydraulic capacity of key sanitary sewer elements for dry weather peak flow as well as the appropriate design storm or wet weather event.

Audit Elements:

- *Hydraulic Model*
- *Technical Memorandum- System Evaluation and Capacity Assurance Plan*
- *Technical Memorandum- Wet Weather Flow Projection for the Ultimate SPWA area*
- *Technical Memorandum- Trunk Sewer Hydraulic Analysis*
- *Wastewater Condition Assessment*
- *Capital Improvement Plan (CIP) - Wastewater System Condition Assessment*
- *Construction Projects List*

SSMP Requirements	Current Y or N	If no, action items required
Provide hydraulic capacity of key sanitary sewer elements for dry weather peak flow conditions as well as designed storm or wet weather event	*Y*	*Per Utility Manager, all up to date*
Does the city's Capital Improvement Plan (CIP) establish projects and a schedule of approximate completion dates for both short term and long term improvements	*Y*	*Per Utility Manager, all up to date*
Does the CIP identify sources of funding for improvements	*Y*	*Per Utility Manager, all up to date*
Procedures for the analysis, evaluation, and prioritization of hydraulic deficiencies	*Y*	*Per Utility Manager, all up to date*

Element 9: Monitoring, Measurement, and Program Modifications

The WDR/SSMP Monitoring, Measurement, and Program Modification requirement specifies that each enrollee shall establish and prioritize appropriate SSMP activities.

Audit Elements:

- *Preventative, Corrective, and Emergency Work Order History*
- *PM Schedules*
- *SSO History*
- *Benchmarking Metrics*
- *Strategic Plan Data*
- *Staff Training Records*
- *Condition Assessment Data*
- *Program Improvements*

SSMP Requirement	Current Y or N	If no, action items required
Monitor, measure and modify where appropriate, the elements of the SSMP	*Y*	*Completed through Hansen and excel spreadsheets monitoring trends*
Evaluate the success of the preventative maintenance program	*Y*	*Completed through Hansen and excel spreadsheets monitoring trends*
Update program elements based on monitoring or performance evaluations	*N*	*Update Element 9.4 to add lateral lining and maintenance programs. Remove the measure for chemical root control as the city does not use chemicals to control root growth.*
Identify and illustrate SSO trends, including frequency, location, cause and volume.	*Y*	*Completed through Hansen and excel spreadsheets monitoring trends*
Is the City able to evaluate the effectiveness of the SSMP based on relevant information	*Y*	*Completed through Hansen and excel spreadsheets monitoring trends*

Element 10: SSMP Audits

The WDR/SSMP –SSMP Program Audit requirement specifies that each enrollee shall conduct periodic internal audits based on size of system and number of SSOs.

Audit Elements:

- *Previous SSMP Audits*
- *Discuss the effectiveness of this audit format and provide suggestions for improvements*

SSMP Requirement	Current Y or N	If no, action items required
Conduct periodic internal audits and record results of audit in a report	*Y*	
Record changes made and/or corrective actions taken	*Y*	

Element 11: Communication Program

The WDR/SSMP Communication Program Requirement specifies that each enrollee shall communicate with the public, on a regular basis, on the development, implementation and performance of the SSMP.

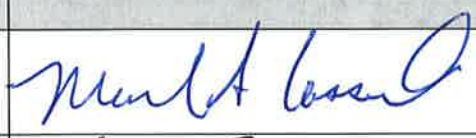
Audit Elements:

- *City of Roseville Website*
- *Public Outreach/ Customers and Other Agencies*

SSMP Requirement	Current Y or N	If no, action items required
Communicate with public on SSMP performance	*N*	*SSMP and supporting documents need to be updated on the city's website. Revisions and log kept internally , but neglected to update via the website.*
Communicate with satellite agencies	*Y*	*Regional partner meetings, SPWA, website updates*
Does the city have a mechanism to address public feedback	*Y*	*Public comments can be submitted through city website, PUC and council meetings. The wastewater division uses a customer survey card for feedback from customers directly affected by maintenance activities.*

Certification of Audit:

By signing below, we certify that the information contained in this audit report is correct to the best of our knowledge.

Name	Position	Signature	Date
Mark Cossairt	*Refuse Utility Manager (Auditor)*		3/20/12
Mike Zacharia	*Principal Engineer (Auditor)*		3-20-12
Kenneth Glotzbach	*Wastewater Utility Manager Legal Responsible Official (LRO)*		4-29-12
Chris Bracco	*Wastewater Collection Supervisor*		29MAR12

City of Roseville Wastewater Collection

FY 2010-2011 SSMP Program Audit (Internal)

SUPPORT DOCUMENTS,TRENDS AND DATA

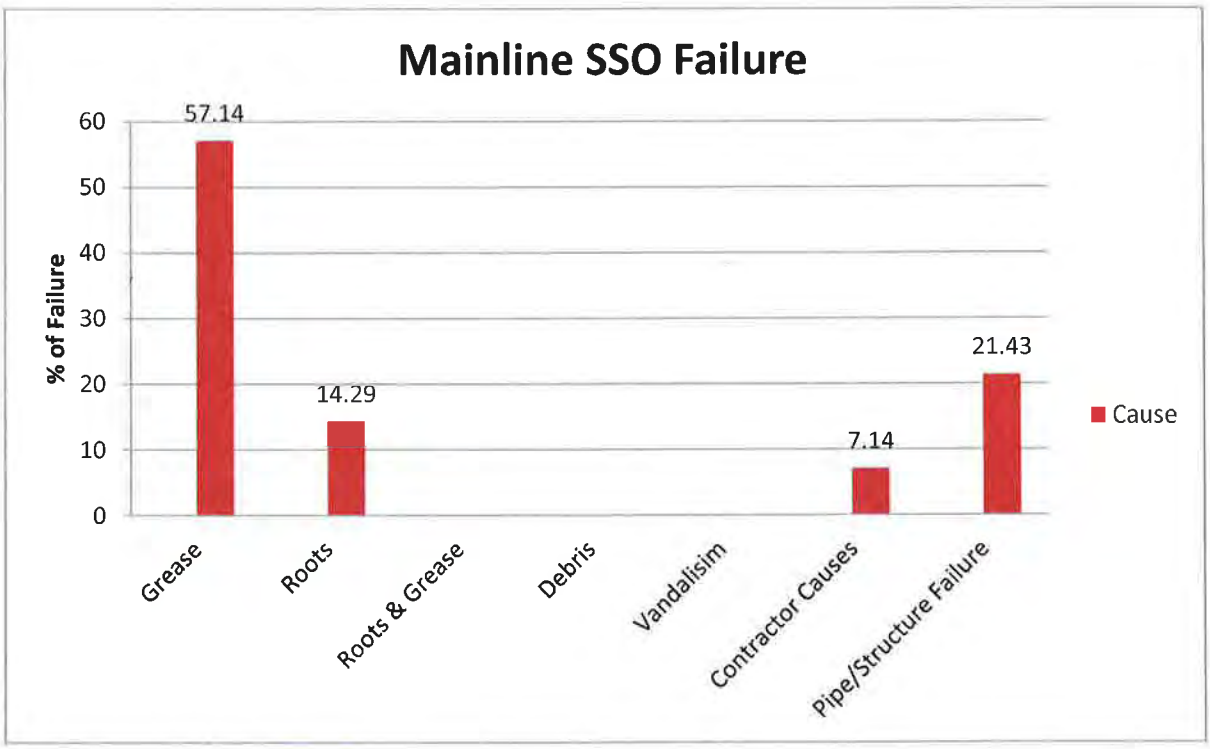
ATTACHMENT 1

System Performance Metrics

Management, Operation and Maintenance System-Performance Metrics									
Source	Main Line SSO's-Fiscal Year						Total	Avg/YR	Avg/100 miles sewer
	7/8	8/9	9/10	10/11	11/12	12/13			
Main Lines	3	2	2	3			10	2.5	0.019
Volume/Gals.	770	100	223	87			1180	295	2.261
Source	Lateral Line SSO's-Fiscal Year						Total	Avg/YR	Avg/100 miles sewer
	7/8	8/9	9/10	10/11	11/12	12/13			
Laterals	16	9	6	10			41	10.25	0.197
Volume/Gals.	456	166	99	164			885	221.25	4.255
Source	Total SSO's-Fiscal Year						Total	Avg/YR	Avg/100 miles sewer
	7/8	8/9	9/10	10/11	11/12	12/13			
Laterals/Mains	19	11	8	13			51	12.75	0.070
Volume/Gals.	1226	266	322	251			2065	516.25	2.829

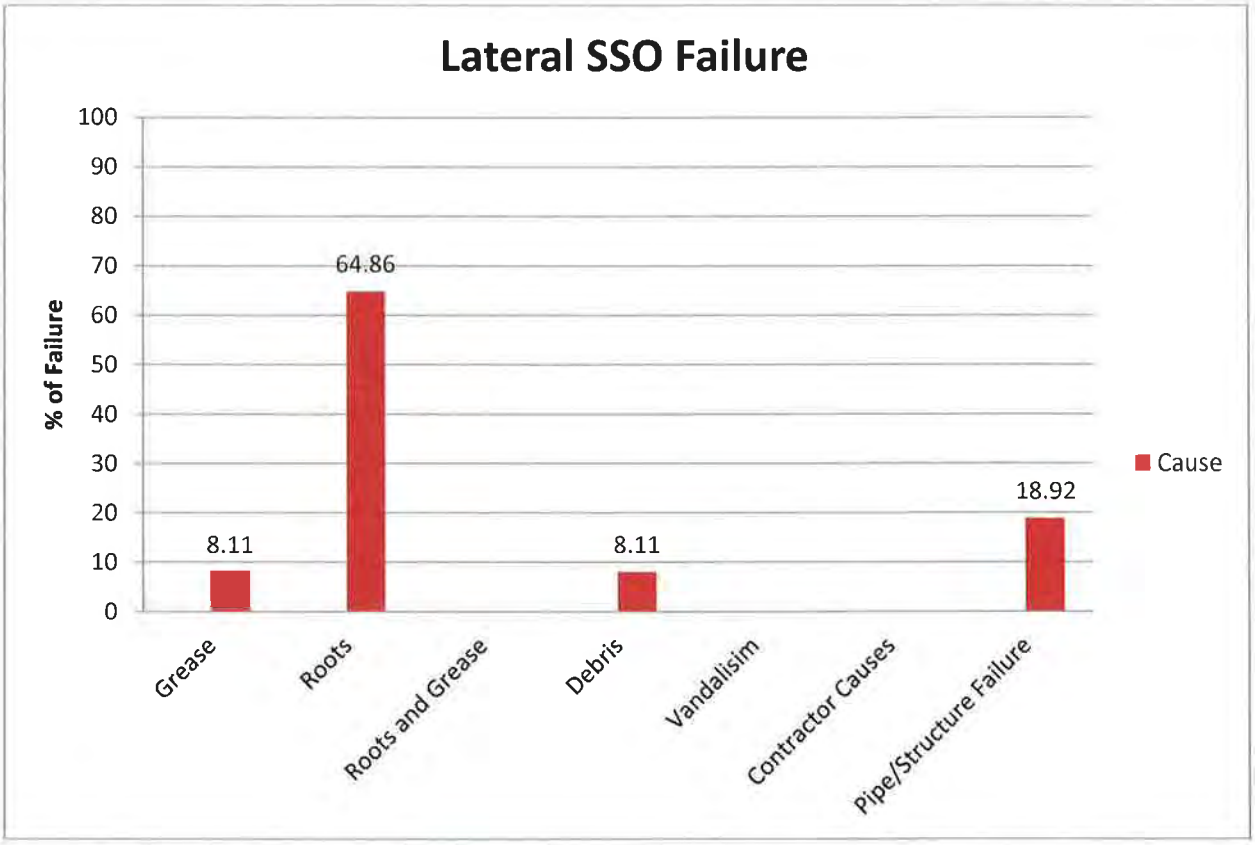
Mainline Stoppages by Cause

	Fiscal Year							
	7/8	8/9	9/10	10/11	11/12	12/13		
Cause	**Count**						Total	%
Grease	3	1	2	2			8	57.14
Roots		1		1			2	14.29
Roots & Grease								
Debris								
Vandalisim								
Contractor Causes	1						1	7.14
Pipe/Structure Failure		2	1				3	21.43
Total	4	4	3	3			14	100.00



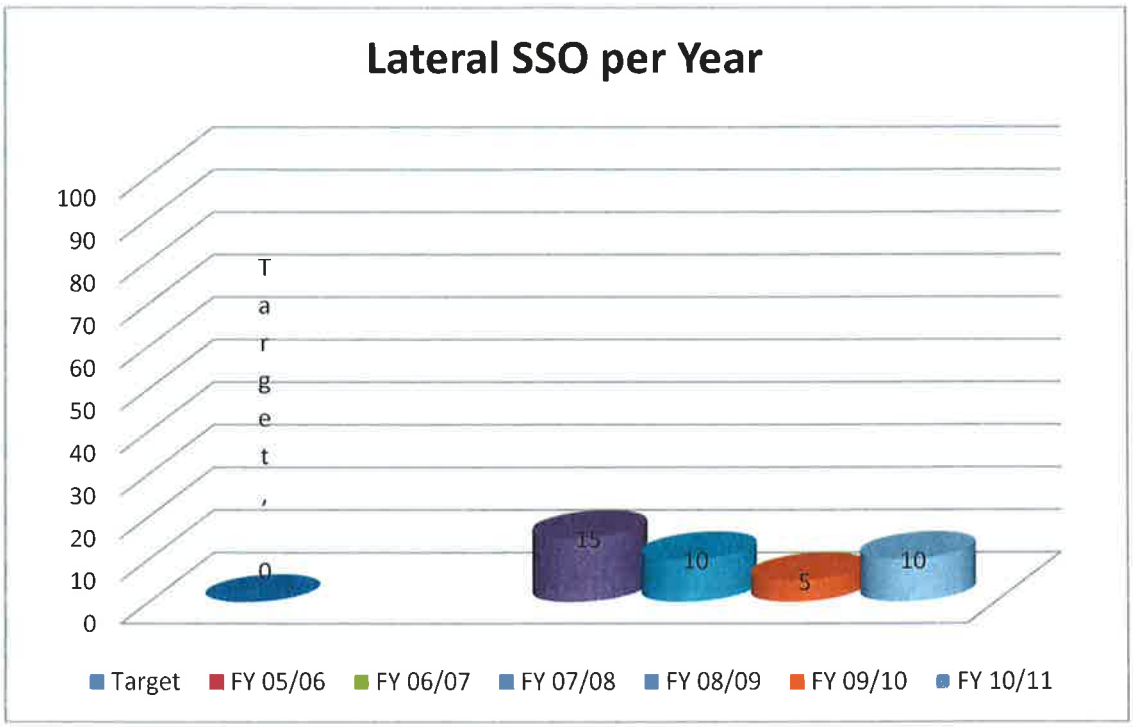
Note: The data represents trends from FY 2007 to present

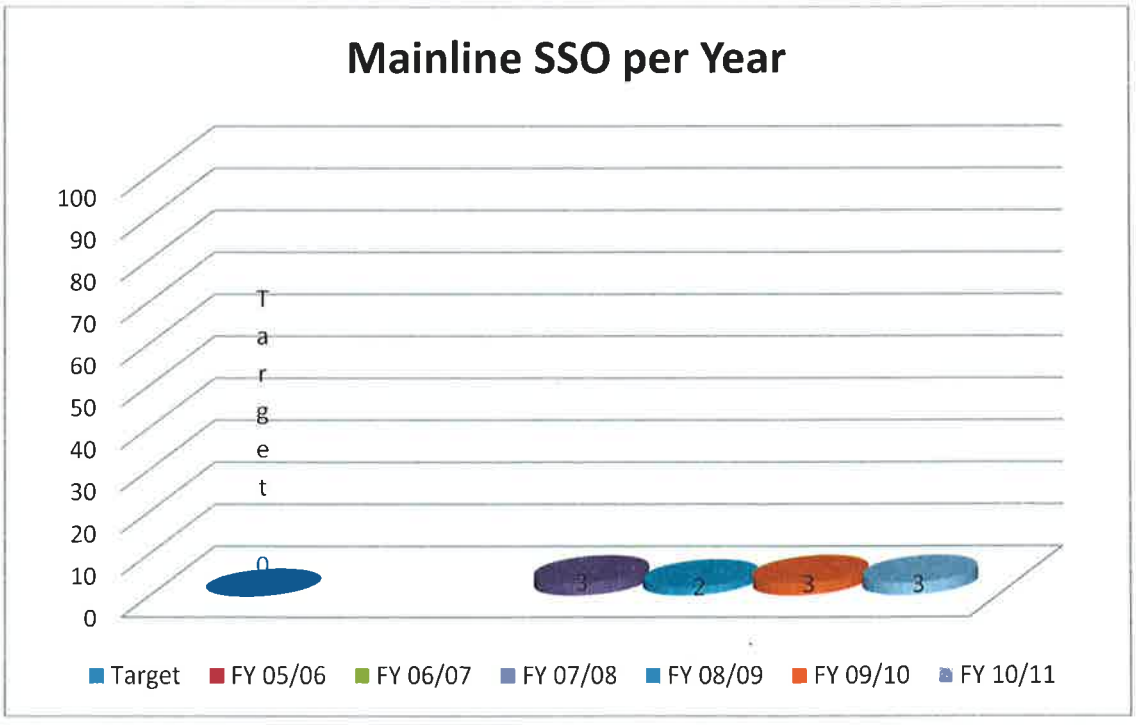
Lateral Stoppages by Cause								
	Fiscal Year							
	7/8	8/9	9/10	10/11	11/12	12/13		
Cause	**Count**						Total	%
Grease	1	2					3	8.11
Roots	8	5	4	7			24	64.86
Roots and Grease								
Debris	1	1		1			3	8.11
Vandalisim								
Contractor Causes								
Pipe/Structure Failure	4		1	2			7	18.92
Total	14	8	5	10			37	100.00



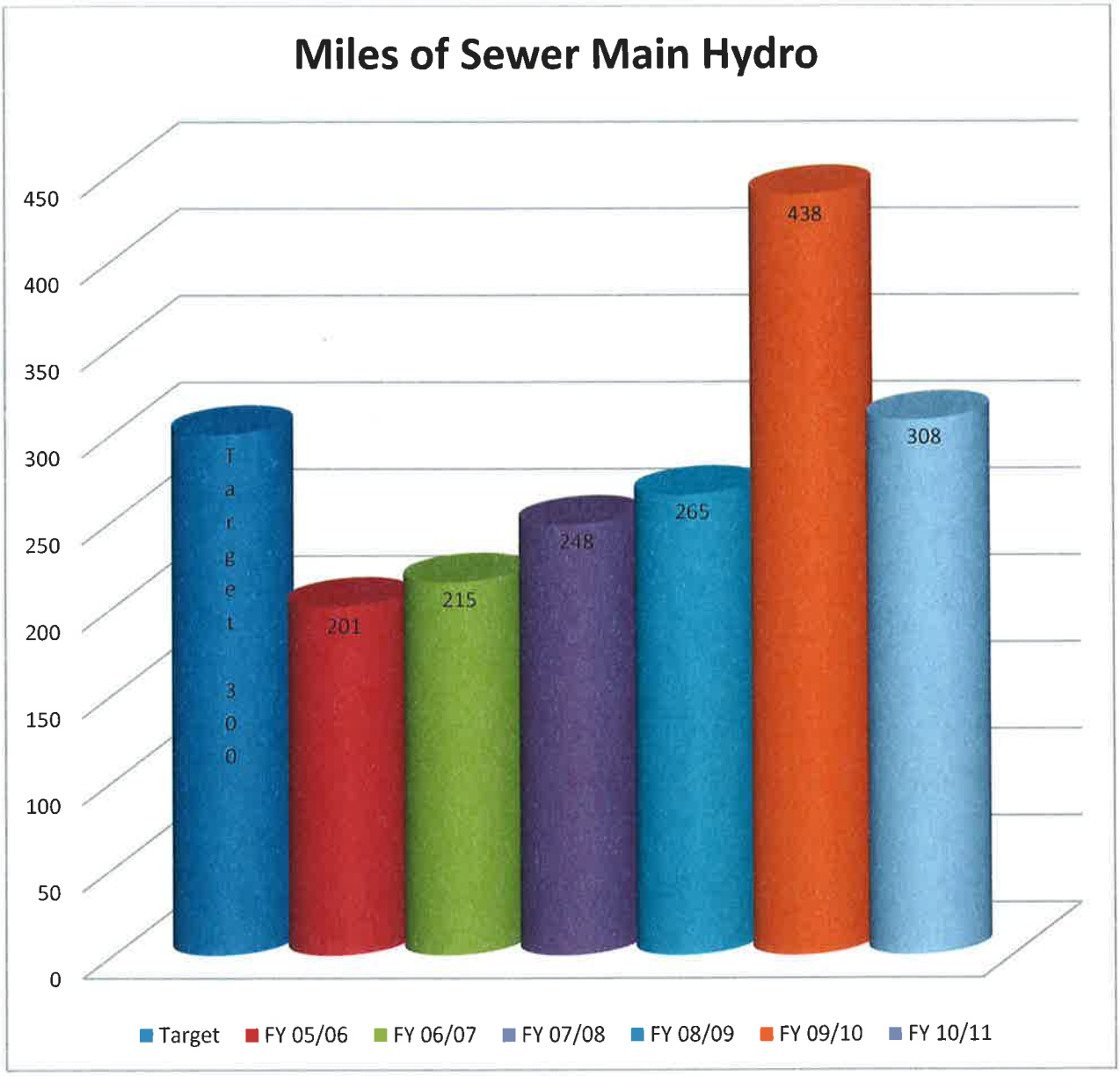
Note: The data represents trends from FY 2007 to present

Lateral/Mainline SSO Charts FY 07 to Present

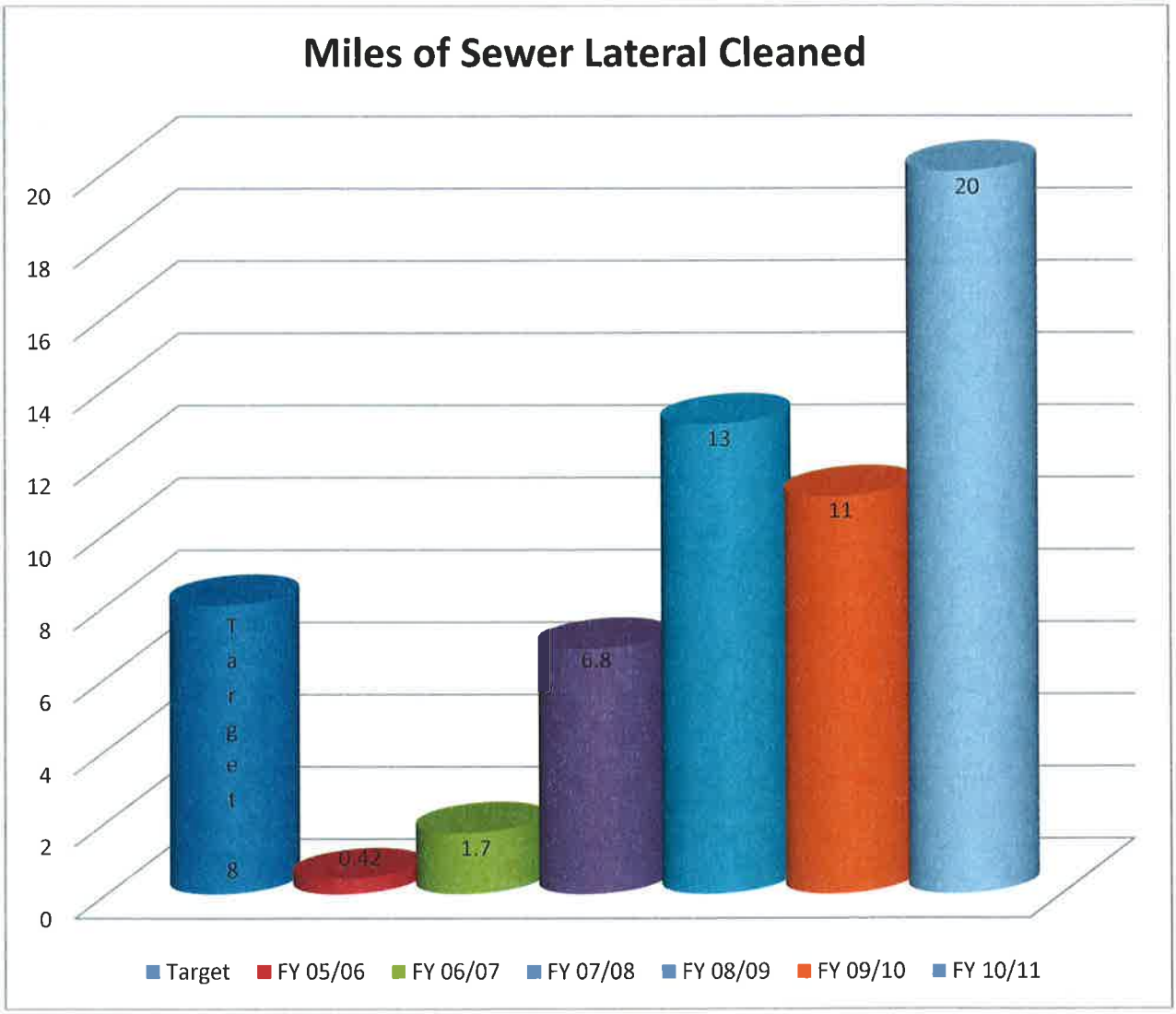




Vactor Footage Chart



Sewer Lateral Cleaned Chart



Appendix 10-2

SSPM Audit Fiscal Year 2012/2013

CITY OF ROSEVILLE
Sewer System Management Plan (SSMP)
Biennual Audit for FY 11/12 – FY 12/13

Date: December 2013

Prepared by: Eric Nielsen, P.E., Water Works Engineers
Michael Fisher, P.E., Water Works Engineers
Tyler Mills, E.I.T., Water Works Engineers

Assisted by: Chris Bracco, City Wastewater Superintendent
Dan Pruden, City Wastewater Supervisor

Table of Contents

SECTION 1 Audit Objectives 3
SECTION 2 Agency Background / System Information 4
2.1 Review of Last SSMP Audit 4
2.2 Review of FY11/12 and FY12/13 5
SECTION 3 SSO Trends 6
3.1 Historical SSO Data 6
3.2 SSO Reduction Performance Goals 8
SECTION 4 Audit Procedure 11
4.1 Review of SSMP Compliance 11
4.2 Review of SSMP Effectiveness 11
SECTION 5 Audit of SSMP Elements 12
5.1 Goals 12
5.2 Organization 12
5.3 Legal Authority 13
5.4 Operation and Maintenance Program 15
5.5 Design and Performance Provisions 19
5.6 Overflow Emergency Response Plan 20
5.7 FOG Control Program 23
5.8 System Evaluation and Capacity Assurance Plan 27
5.9 Monitoring, Measurement, and Program Modifications 29
5.10 SSMP Program Audits 33
5.11 Communication Program 34
SECTION 6 Audit Summary 37
SECTION 7 Appendices 42
7.1 Appendix – Historical SSO Data 43
7.2 Appendix – Performance Indicators 44
7.3 Appendix – Sample Performance Indicator Assessment Form 45

WATERWORKS ENGINEERS

List of Tables

Table 1. Overview of System Indicators 4
Table 2. Summary of Findings from the Last SSMP Internal Audit 5
Table 3. CIWQS and City SSO Historic Data 6
Table 4. Leading Causes of SSOs in FY11/12 and FY12/13 8
Table 5. SSO Reduction Goals 8
Table 6. Planned R&R and CIP Projects Planned Before Next SSMP Audit 10
Table 7. Goals for SSO Response Time 10
Table 8. Compliance with SSS WDR D.13.i - Goals 12
Table 9. Compliance with SSS WDR D.13.ii - Organization 12
Table 10. Compliance with SSS WDR D.13.iii – Legal Authority 13
Table 11. Compliance with SSS WDR D.13.iv – O&M Program 15
Table 12. Performance Measures related to SSS WDR D.13.iv(b) 16
Table 13. Performance Measures related to SSS WDR D.13.iv(c) 18
Table 14. Compliance with SSS WDR D.13.v – Design and Performance Provisions 19
Table 15. Compliance with SSS WDR D.13.vi - OERP 20
Table 16. Compliance with SSS WDR D.13.vii – FOG Control Program 23
Table 17. Compliance with SSS WDR D.13.viii - SECAP 27
Table 18. Schedule of CIPs to Address Capacity Deficiencies 28
Table 19. Compliance with SSS WDR D.13.ix – MMM 29
Table 20. Summary of Current Preventative Maintenance Performance Metrics 31
Table 21. Current Performance Measures to Monitor SSO Trends 32
Table 22. Compliance with SSS WDR D.13.x – SSMP Program Audits 33
Table 23. Compliance with SSS WDR D.13.xi – Communications Program 34
Table 24. Summary of SSMP Compliance Deficiencies 37
Table 25. Summary of Audit Recommendations 37

List of Figures

Figure 1: Number of SSOs per Fiscal Year 7
Figure 2: Average Gallons per SSO 7

SECTION 1 Audit Objectives

This report summarizes the results of the required Sewer System Management Plan (SSMP) internal audit process for the FY 11/12 and FY 12/13 evaluation period. The purpose of the SSMP is to provide a written framework for sanitary sewer collection system management, operation, and maintenance programs executed by the City of Roseville (City) with the ultimate goal of minimizing sanitary sewer overflows (SSOs) and achieving compliance with California State Water Resources Control Board (SWRCB) Order No. 2006-0003-DWQ, the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR). The SSMP audit is based on a review of performance measures established to evaluate the City's success in achieving compliance with various requirements of the SSS WDRs and implementing programs as stated in the SSMP. The SSMP audit process allows the SSMP document to evolve over time through the identification of potential enhancements in the management, operation and maintenance of the sanitary sewer collection system and the implementation of changes to the SSMP to address any deficiencies.

The City of Roseville is committed to complete biennial audits of the SSMP consistent with the procedure outlined in Appendix J-1 of the SSMP. To ensure that the audits are performed objectively, the City assigns this task to individuals that are removed from the daily activities of the Wastewater Collections (WWC) division. These individuals, along with the assistance from the Wastewater Collection Superintendent and/or Supervisor, must have a working knowledge of the collection system and the ability to gather the appropriate data to perform the audit. The following tasks, at a minimum shall be performed with each audit:

1. Compare the records from the computerized maintenance management system (CMMS) of record, to the data reported to the California Integrated Water Quality System (CIWQS). Review performance metrics tracked by the WWC division versus previous years to identify trends. (see **Section 3.1**)
2. Review condition assessment data and rehabilitation philosophy/strategies with the Wastewater Superintendent and/or Supervisor and the Rehabilitation Manager. **(See Section 5.4)**
3. Review records from previous internal audits, to ensure noted deficiencies have been addressed. (**this Section**)
4. Review preventative maintenance schedules, responses to SSOs, and mitigation of SSO causes. (see **Section 3.1**)
5. Review SSO Emergency Response Plan (SSOERP) and identify improvements if needed. (see **Section 5.6**)
6. Identify accomplishments in improving the collection system.
7. Record all findings during the audit process and keep the audit on file. (see **Section 5.10**)

SECTION 2 Agency Background / System Information

The City of Roseville is located in Placer County and situated approximately 16 miles north of Sacramento. The City covers approximately 42 square miles near the base of foothills of the Sierra Mountains. The elevations in Roseville range from approximately 250 feet to 100 feet above sea level with an average slope across the City of 0.5% from east to west. Several streams flow through the City (i.e., Dry Creek, Pleasant Grove Creek, Kaseburg Creek, Linda Creek, Cirby Creek, Secret Ravine, and Miners Ravine).

The City is responsible for operation and maintenance of a growing sewer system. The current population is approximately 122,000. The population of the City of Roseville grew 48.6% between 2000 and 2010, which is more than five times the national average according the U.S. Census Bureau. The City's sewer collection system has grown in step with the rapid population growth. The City currently provides service to over 41,000 connections to the system. **Table 1** provides additional information about the City collection system and WWC division over the last two SSMP audit periods.

Table 1. Overview of System Indicators

Audit	FY 09/10 – 10/11	FY 11/12 – 12/13
Miles of Mainline	522	485.52*
Miles of laterals (lower)	208	235.3
Pump stations	13	14
Population served	118,788	122,060
WWC Staff	24	25
Annual Budget (FY1 – FY2)	$3,200,000 / $3,200,00	$3,400,000 / $3,800,00
Category 1 SSOs	2	2
Category 2 SSOs	19	75

* Previously recycled water pipelines were included in "Miles of Mainline".

The City treats the wastewater conveyed through its collection system at two regional wastewater treatment plants owned and operated by the City (i.e., the Dry Creek and Pleasant Grove WWTPs). Two satellite agencies (i.e., South Placer Municipal Utility District and Placer County) discharge wastewater into the City's collection system. A small portion of the City's collection system discharges into the Sacramento Area Sewer District system and is treated at the Sacramento Regional WWTP.

2.1 Review of Last SSMP Audit

An internal audit of the City SSMP was conducted and concluded on March 14, 2012 which reviewed the activities and performance related to the SSMP for the fiscal year 2010/2011 (FY10/11). **Table 2** summarizes the identified deficiencies and the associated action items outlined in the previous SSMP audit. The table also shows the date when the identified deficiencies have been resolved. All identified deficiencies in the previous audit were addressed quickly. The three items that have a "Yes" in the "Resolved" column were found to have been updated when reviewed as part of this audit, but no revision date was available. The remainder of the deficiencies were updated in the SSMP and referenced documents and marked with a revision/updated date.

Table 2. Summary of Findings from the Last SSMP Internal Audit

Element	Action Item	Resolved
1 – Goals	Review and revise goals. Goal 1 is obsolete since the City's SSMP development plan and implementation schedule is complete.	16 APR 2012
2 – Organization	LRO needs to be updated on City's website.	3 MAR 2012
	Section 2.2 outlining SSMP Responsibility Organization Chart needs to be updated, then placed on City's website.	16 APR 2012
	Management contact information needs to be updated on City's website and general position descriptions need updating.	Yes
	Contact information for maintenance personnel and after-hour response needs to be updated on City's website.	22 FEB 2012
	Chain of Communication reporting section needs to be updated on City's website, along with RWQCB contacts updated.	9 MAY 2012
4 – O&M	Business process needs to be developed to ensure mapping updates are completed.	28 MAR 2012
	Update needed to App D-6 (Equipment Inventory) and D-7 (Critical Parts)	Yes
6 – OERP	Updates needed to Appendix F (SSOERP Documents). Changes to SSOERP flowchart are needed for notifications. Information needs to be updated on City's website.	20 MAR 2012
8 – MMM	Update Element 9.4 to add lateral lining and maintenance programs. Remove the measure for chemical root control as the City does not use chemicals to control root growth.	16 APR 2012
11 - Communication	SSMP and supporting documents need to be updated on the City's website. Revisions and log kept internally, but neglected to update via the website.	Yes

2.2 Review of FY11/12 and FY12/13

Over the past two fiscal years it has been a priority of the City to eliminate mainline SSOs, which pose the largest risk for Category 1 SSOs due to the larger volumetric flowrate of wastewater in mainlines versus laterals. Having only six mainline SSOs (two Category 1 and four Category 2) over the two year period for an average of 0.62 SSOs/100 miles of pipeline per year is evidence of that priority. Of the six, two SSOs were caused by an unusually large storm that was reported as greater than the design capacity of a 10 year 24 hours storm. Two SSOs were caused by the accumulation of Fats, Oils, and Grease (FOG), and the last two were caused by overgrown roots.

Due to the large number of SSOs from laterals over the current audit period, plans were developed to address the issue of lateral SSOs. Records of the events listed the causes of the 71 lateral SSOs as; roots (49), debris (12), pipe failure (9), and vandalism (1). In FY11/12 the City rehabilitated 0.22 miles of laterals and 0.25 miles of laterals in FY12/13. Also, the Roseville WWC has developed and implemented an eeling program for lateral lines as a preventative maintenance activity targeted at reducing SSOs from laterals. This plan is explained below in **Section 3.2** regarding SSO reduction goals.

SECTION 3 SSO Trends

3.1 Historical SSO Data

There are a total of 77 spills that occurred in the fiscal years of 2011/2012 and 2012/2013. Information regarding the 77 SSOs is located in **Appendix 7.1** of this internal audit and includes information such as; date, location, spill type, spill volume, spill volume recovered, and a short description.

One of the City-defined tasks of the internal audit is to compare the information submitted to the state CIWQS database against the information keep in the City records regarding SSO events. **Table 3** organizes the data by source to show discrepancies, if any, between the data reported to CIWQS and the City's records.

Table 3. CIWQS and City SSO Historic Data

SSO Historical Data since last SSMP Internal Audit	CIWQS Data FY 11/12 – 12/13	Internal Records FY 11/12 – 12/13
The total number of potential SSO service calls received	-	943 service calls
The total number of SSOs reported	77 SSOs	77 SSOs
The reported total volume of SSOs	2053 gallons	2053 gallons
The reported total volume of SSOs that reached waters of the state	405 gallons	405 gallons
The percent volume of SSOs recovered	80%	80%
The average SSO response time	23 minutes	21 minutes
The average SSO duration time	18 minutes	-

The WWC Superintendent verifies, on a quarterly basis, the data in CIWQS against the information gathered and maintained by the City on individual SSO Field Report Forms on a regular basis. The information presented in the column labeled "Internal Records" of **Table 3** represents the summarized information reported in the various performance measures maintained by the City.

The City strives to maintain quality data regarding historical SSOs so that trends in the occurrences and potential causes of SSOs can be investigated. The following discussion investigates the City's historical SSO data to identify potential SSO trends so that future efforts can be targeted to reduce SSOs.

Figure 1: Number of SSOs per Fiscal Year

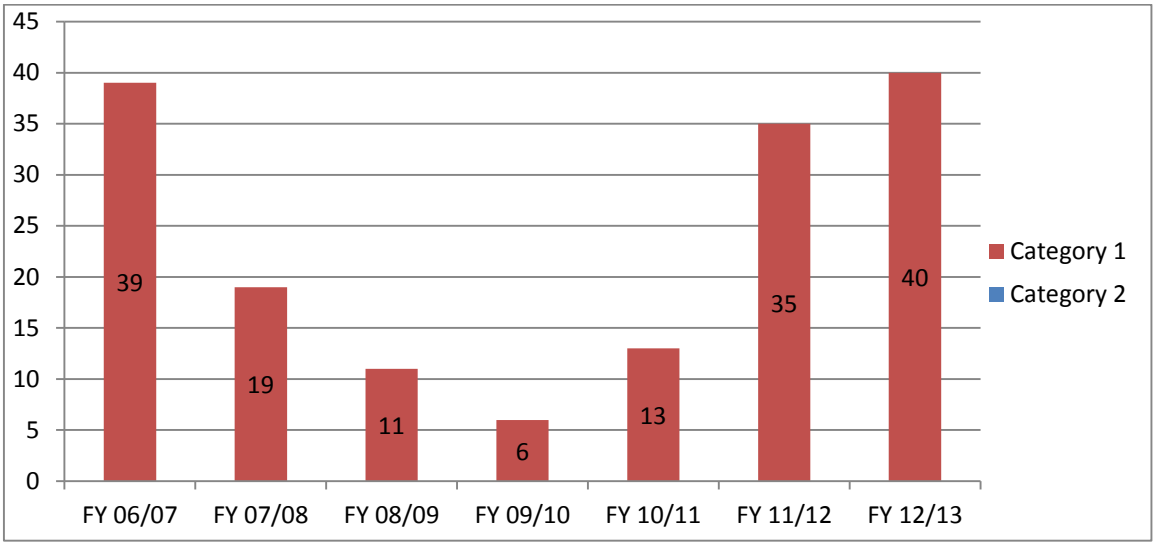
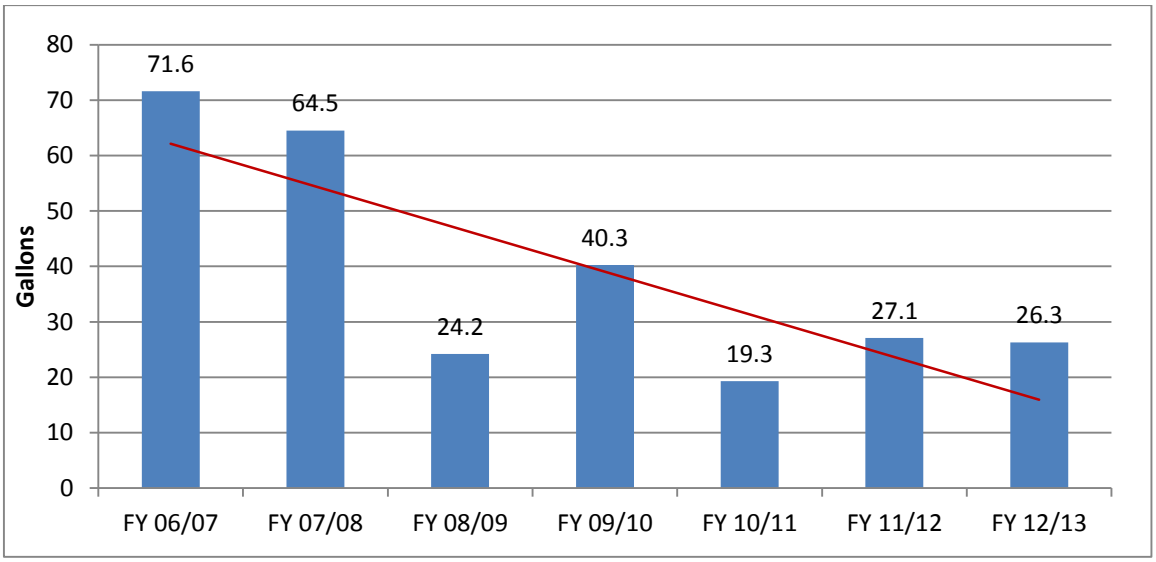


Figure 1 shows a decrease in the number of SSOs per year from FY06/07 to FY09/10 and an increase in the number of SSOs since that time. However, if we investigate the average spill volume for each SSO over the same time period, we see a downward trend (see **Figure 2**). Although the number of SSOs in FY11/12 and FY12/13 is similar to the number of SSOs seen in FY06/07, the average spill volume per SSO during FY11/12 and FY12/13 is less than half of what was recorded during FY06/07 and FY07/08.

Figure 2: Average Gallons per SSO



These trends indicate that the City has effectively targeted its efforts to limit large-volume SSOs through the preventative maintenance programs for mainline assets (e.g., hydroflushing, CCTV inspection) and the City SSO emergency response plan. However, these trends also show that the number of SSOs (specifically those from laterals) is on the rise over the period of this internal audit.

The City's SSO records were queried to identify the leading causes of SSOs. **Table 4** shows the leading causes of SSOs in the City by 1) the number of SSOs, 2) the spill volume of SSOs, and 3) the average spill volume per SSO.

Table 4. Leading Causes of SSOs in FY11/12 and FY12/13

By Number		By Volume		By Average Volume per SSO	
Cause	**Number**	**Cause**	**Gallons**	**Cause**	**Gallons**
Roots	51	Roots	1235	Capacity	200
Debris	12	Capacity	400	FOG	39
Pipe Failure	9	Debris	222	Roots	24
FOG	2	Pipe Failure	114	Debris	19
Capacity	2	FOG	77	Pipe Failure	13
Vandalism	1	Vandalism	5	Vandalism	5

Table 4 shows that root growth in pipelines is the major cause of an occurrence of a SSO, and capacity-deficient pipelines are the major cause for SSOs with large spill volumes. The actions planned as a result of this SSMP audit will target the leading causes to most effectively reduce the number and spill volume of SSOs.

3.2 SSO Reduction Performance Goals

One of the goals of the City's SSMP is "to minimize the frequency of SSOs". The City has set specific goals to monitor its performance in regards to the frequency of SSOs. **Table 5** compares the City SSO goals against the actual number of SSOs during the timeframe of the last SSMP internal audit, the timeframe of the current SSMP internal audit, and the table lists the SSO goals projected before the City's next internal SSMP audit. It should be noted that the goals for the upcoming two fiscal years reflect the change in how SSOs will be categorized and reported to the state based on the recent SSS WDR Revised Monitoring and Reporting Program (Revised MRP) (WQ 2013-0058-EXEC). Additional recommendations on tasks the City should implement to comply with the Revised MRP are described in **Section 5.9**.

Table 5. SSO Reduction Goals

	FY09/10 – 10/11		FY11/12 – 12/13		FY13/14 – 14/15
	Goal	Actual	Goal	Actual	**Goal**
Mainline SSOs	6[1]	4	6[1]	6	**6**
Lateral SSOs	38[2]	17	38[2]	71	**70**
Category 1 SSOs	0	2	0	2	**0**
Category 2 SSOs	28[3]	19	28[3]	75	**6**
Category 3 SSOs[4]	-	-	-	-	**70**
Total SSOs	**44**	**21**	**44**	**77**	**76**

[1] Based on a goal of 0.6 mainline SSOs per 100 miles of sewer main per year w/ 487 miles of mains.
[2] Based on a goal of 8.0 lateral SSOs per 100 miles of service laterals per year w/ 235 miles of laterals.
[3] Based on a goal of 2.0 Category 2 SSOs per 100 miles of sewer pipe per year w/ 722 miles of total pipe.
[4] Category 3 was added as a new spill definition by State Order No. WQ 2013-0058-EXEC in Sept. 2013.

The SSO performance goals for the period before the next internal SSMP audit are set consistent with the performance metrics set by the City (i.e., number SSOs per 100 miles of pipe per year) and the performance of municipal agencies in the state. The goal for the number of mainline SSOs is based on an aggressive performance measure of 0.6 SSOs per 100 miles of mainline per year. The performance of the City has been consistent against this goal based on the data in **Table 5**, and represents a satisfactory level of service. The goal for the number of lateral SSOs was exceeded during the period of this internal audit. This goal was adjusted to a total of 70 lateral SSOs for the next SSMP audit period. This represents a realistic goal for the City to strive for and represents a reduction in the number of lateral SSOs. This goal represents an average of approximately 15 SSOs per 100 miles of service lateral per year, which is significantly less (i.e., 42% less) than the statewide average of 26 SSOs per 100 miles of pipe for municipal agencies according to past SSO Facility Operational Reports provided by the State Board.

3.2.1 Planned Efforts to Reach Identified SSO Reduction Goals

The following section describes specific changes to be implemented based on the identified SSO trends to meet the target reduction goals in **Table 5**. The discussion of planned efforts is broken down into a number of potential categories (i.e., cleaning, tools, maintenance schedules, BMPs, staffing, funding, and training). It is recommended that these categories for potential changes be revisited with each subsequent SSMP internal program audit to examine if they may apply to future conditions. Changes in each category may not be necessary in each audit, but addresses each category provides a holistic approach to SSO reduction.

Changes to be employed to sanitary sewer system cleaning

No planned changes to current cleaning activities are anticipated to meet SSO reduction goals.

Changes to be employed to sanitary sewer system tools and/or technology

The City has implemented a standard operating procedure to utilize trenchless technology to rehabilitate service laterals that are prone to blockages. After hour service calls are tracked by the City for each sewer service lateral. Once a sewer service lateral receives six after hour service calls, it is lined to minimize root growth.

Changes to be employed to sanitary sewer system maintenance and repair schedules

The City has investigated methods to decrease the growing number of SSOs from laterals. The City reinforced the efforts of its eeling program near the end of FY12/13. More details about the eeling program are outlined in **Section 5.4**. Based on the data collected during the two months that the eeling program has been in effect, there has been marked improvement. The City of Roseville averaged approximately four lateral SSOs per month during the period of this audit. In the two months since the start of the new eeling program, there was an average of one lateral SSO per month. Although the new eeling program has only been in effect for a short time, the preliminary results indicate that it is effective in reducing the number of SSOs from laterals and should be continued. The new eeling program is one of the planned efforts to meet the SSO reduction goals set in **Table 5**.

Changes to be employed to sanitary sewer system best management practices

No planned changes to sewer system best management practices are anticipated to meet SSO reduction goals.

Changes to be employed to sanitary sewer system staffing levels

The City intends to hire one additional staff during the period of the next SSMP audit.

Changes to be employed to sanitary sewer system funding levels

No planned changes to funding levels are anticipated to meet SSO reduction goals.

Changes to be employed to sanitary sewer system training

It is anticipated that training of WWC staff to the revised OERP (see **Section 5.6**) will be required to effective meet the SSO reduction goals.

Measures to Assure No Repeat SSOs

"No repeat overflows from the same location" is one of the City's SSMP goals and one of the performance measures tracked over time. The City employs various strategies to meet the goal of no repeat SSOs from the same location. The City completes a System Failure Form for every SSO that occurs to identify any potential for a repeat blockage.

Table 6 describes the related sanitary sewer system rehabilitation and capital improvement projects, including schedules and costs, planned before the next SSMP internal program audit.

Table 6. Planned R&R and CIP Projects Planned Before Next SSMP Audit

Project	Year	Cost
Atkinson / Dry Creek Crossing	2013	$ 314,500
Shadowbrook Lift Station Rehab and Replacement	2014	$ 525,000
2012 CIPP Rehab Project	2014	$ 1,890,000
Wastewater Interceptor Inspection and Assessment	2014	$ 500,000
Sewer Line / Clean Out / Sewer Service Upgrades	2014	$ 300,000
WW – Technology Replacement	2014	$ 50,000
Sewer Manhole Upgrade	2014	$ 250,000
2013 CIPP Rehab Project	2015	$ 1,890,000
Sewer Line / Clean Out / Sewer Service Upgrades	2015	$ 300,000
WW – Technology Replacement	2015	$ 50,000
Sewer Manhole Upgrade	2015	$ 250,000

Table 7 describes the target goals for time between notification of a potential SSO and arrival on scene for containment (i.e., SSO response time) under varying conditions.

Table 7. Goals for SSO Response Time

Condition	Goal
During normal business hours	40 minutes
After business hours / holidays	40 minutes

SECTION 4 Audit Procedure

Per SSS WDR Section D.13.x, the objective of this audit is to focus on evaluating the effectiveness of the SSMP and the City's compliance with the SSMP requirements identified in the SSS WDR order. This section describes the procedure used to accomplish this objective.

4.1 Review of SSMP Compliance

An assessment of the City of Roseville's SSMP was conducted as part of the audit against the requirements outlined in the SSS WDR. The subsections of **SECTION 5** below are organized by SSMP element. Each subsection contains a table which lists the requirements of section D.13 of the SSS WDR for the respective SSMP element and indicates the level of compliance of the SSMP against that requirement. The compliance status of the City's SSMP is indicated with one of the following ratings; *1 - in compliance, 2 - not in compliance, or 3 – N/A with written justification in SSMP*. If there are deficiencies with regards to compliance, an explanation of the deficiency is given. Each deficiency will have associated SSMP enhancements which may include action items, SSMP adjustments, and/or timelines of planned completion.

4.2 Review of SSMP Effectiveness

Subsequent to the indication of the level of compliance of the SSMP in relation to the requirements of the SSS WDR, an evaluation of the effectiveness of the SSMP elements will be conducted to comply with the requirements for SSMP audits per subsection D.13.x of the SSS WDR. Where appropriate, recommendations will be made based on the results of this audit to identify tasks to improve the effectiveness of SSMP activities. Wherever possible, performance metrics will be used to measure the effectiveness of SSMP elements. Performance indicators (PIs) will be recommended for SSMP elements that do not currently have a means for quantifiably measuring performance and where it is justified.

A summary of the recommended modifications made throughout this SSMP internal program audit is included in **SECTION 6** – Audit Summary.

SECTION 5 Audit of SSMP Elements

This chapter evaluates all elements of the City's SSMP. Each section of this chapter is associated with one of the eleven elements of the SSMP required by SSS WDR D.13. Each element is evaluated for compliance and effectiveness using the procedure described above in **Sections 4.1** and **4.2**, respectively.

5.1 Goals

5.1.1 Compliance

Table 8. Compliance with SSS WDR D.13.i - Goals

SSMP Requirement	Compliance	Deficiencies
i Properly manage, operate, and maintain all portions of the City's wastewater collection system.	1	-

5.1.2 Effectiveness of SSMP Elements and Recommended Modifications

Roseville Goals (SSMP 1.2)

- Description of Current Status: The City currently has six goals identified in the SSMP.
- Level of Effectiveness: The goals the City of Roseville recorded in the SSMP have been effective in guiding the activities of the City and support the objective of the SSS WDR to protect waters of the state.
- Recommendations: No recommended modifications at this time.

5.2 Organization

5.2.1 Compliance

Table 9. Compliance with SSS WDR D.13.ii - Organization

SSMP Requirement	Compliance	Deficiencies
ii(a) Identify Legally Responsible Official (LRO)	1	-
ii(b) SSMP responsibility and organization chart	1	-
ii(c) Chain of communication for reporting SSOs	1	-

5.2.2 Effectiveness of SSMP Elements and Recommended Modifications

List Legally Responsible Official (LRO) (SSMP 2.1)

- Description of Current Status: Currently Ken Glotzbach (Utility Manager) and Chris Bracco (Wastewater Collections Superintendent) are registered in the California Integrated Water Quality System (CIWQS) as legally responsible officials as of 9 SEP 2013. This type of information is recorded in Appendix B-1 of the City SSMP, which is accessible to the public via the City website.
- Level of Effectiveness: Posting Appendix B-1 on the City website is effective in communicating the legally responsible officials and data submitters for the City to the public.

- Recommendations: Appendix B-1 needs to be updated to show Ken Glotzbach and Chris Bracco as LROs for the City. Additionally, once Dan Pruden (Wastewater Collections Supervisor) is registered as a Data Submitter in CIWQS, his information should be added to Appendix B-1 and updated on the City website.

SSMP Responsibility Organization Chart (SSMP 2.2)

- Description of Current Status: The SSMP Resposibility Organization Chart (SSMP Figure 2-1) is current in the SSMP, with descriptive definitions of each individual's responsibilities. Additionally, a narrative of "general position descriptions" are outlined in section 2.2 of the SSMP.
- Level of Effectiveness: The chart is effective in defining the work flow and responsibilities of the individual as well as departments within the City of Roseville's operations with relation to the SSMP.
- Recommendations: No recommended modifications at this time.

Chain of Communication Reporting Chart (SSMP 2.3)

- Description of Current Status: The internal notification contact chart is current and readily available to all faculty members of the waste water utility district. The City of Roseville has a 24 hour call center and a full time staff wastewater utility customer service representative. This individual's job is to respond to any service calls including but not limited too; backups, SSOs, smell complaints, etc.
- Level of Effectiveness: This has been effective as represented in customer notification to operator arrival time average is 23 minutes during business and non-business hours over the past two fiscal years. This average time is well below the target of 40 minute arrival time. There is only one instance that the operator arrival time exceeded the target 40 minutes in the past two year. This track record indicates the right people are getting the information to correct staff members make a quick decision to respond and mitigate the SSO.
- Recommendations: Figure 2.2 in SSMP section 2.3 has typographical errors. There is text missing. The figure found in SSMP Appendix F-1 (1) - *SSO Procedures Flowchart* is the same chart, but includes all of the text. WWE recommends reinserting the figure from Appendix F-1 (1) into section 2.3 of the SSMP with the corrections made.

  Appendix B-3 includes a call list of staff members who are on call during non-business hours; this is out of date, but also unnecessary. WWE recommends the City develop a SOP for the call center procedures for receiving calls and mobilizing field staff. A call list may be kept internally as deemed necessary by the City.

5.3 Legal Authority

5.3.1 Compliance

Table 10. Compliance with SSS WDR D.13.iii – Legal Authority

SSMP Requirement	Compliance	Deficiencies
iii(a) Prevent illicit discharges	1	-
iii(b) Properly designed and constructed sewers	1	-
iii(c) Ensure access to laterals owned/maintained by City	1	-
iii(d) Limit the discharge of FOG and other debris	1	-
iii(e) Enforce any violation of City ordinances	1	-

5.3.2 Effectiveness of SSMP Elements and Recommended Modifications

Industrial Pretreatment Program (SSMP 3.2)

- Description of Current Status: The Industrial Waste Section (IWS) administers the Pretreatment Program Enforcement Response Plan and implements enforcement procedures specified by the U.S. EPA in accordance with 40CFR 403.5 (f) (5). The IWD has the authority to permit and monitor significant industrial users (SIUs) and small commercial/industrial dischargers.
- Level of Effectiveness: The implementation of the Pretreatment Program Enforcement Response Plan has been effective in providing the City the authority to control and prevent illicit discharges to the collection system.
- Recommendations: No recommended modifications at this time.

Municipal Code and Design and Construction Standards (SSMP 3.3)

- Description of Current Status: The City's design and construction standards regulate the preparation of plans for construction of additions/improvements to the sewer. The Roseville Municipal Code (RMC) section 14.12.040 requires that building sewers and connection into the public sewer system conform to the requirements of the building and plumbing code or other applicable rules and regulations of the City. The RMC also requires an installation of a lateral line clean out at the point of connection with the public sewer.
- Level of Effectiveness: The City design and construction standards and the RMC section 14.12.040 have been effective in providing the City the legal authority to properly design and construct the sewers and connections.
- Recommendations: No recommended modifications at this time.

Municipal Code – Sewer Access Authority (SSMP 3.4)

- Description of Current Status: The Charter in the RMC, Article X Sec. 10.01 designates the authority to access City owned and operated facilities, either within or outside its corporate limits, for a number of activities including, but not limited to maintenance, inspection, and repair related to sewage collection.
- Level of Effectiveness: This authority gives legal access to all City-owned sewer facilities. The City has not had issues to date with lack of access to facilities based on legal authority. The current legal authority to access sewer facilities has been effective in supporting the goals of the SSMP.
- Recommendations: No recommended modifications at this time.

Municipal Code – FOG (SSMP 3.5)

- Description of Current Status: The RMC section 14.12.050 provides authority to require grease and grit interceptors when the director deems necessary for proper handling of liquid waste. Chapter 14.14 is the FOG ordinance that provides liquid discharge requirements for Food Service Establishments (FSEs). An FSE must remain in compliance with this ordinance or fees as explained in 14.14.140 can be cited.
- Level of Effectiveness: This ordinance is effective in identifying the required equipment/BMPs for FSEs as well as indicating the authority of the City to enforce the FOG requirements
- Recommendations: No recommended modifications at this time.

Municipal Code – Enforcement Authority (SSMP 3.6)

- Description of Current Status: The RMC section 14.12.060 provides authority to penalize violators of the City's code requirements. An individual may be charged with an infraction or a misdemeanor, at the discretion of the city attorney.
- Level of Effectiveness: The authority to penalize infractions that may cost the City recourses has proven effective to maintain proper use of the wastewater collection system.
- Recommendations: No recommended modifications at this time.

Inter-Agency Agreements and Satellite Systems (SSMP 3.7)

- Description of Current Status: The City of Roseville has the following agreements in effect:
  - Joint Exercise of Powers Agreement for the South Placer Wastewater Authority
  - Agreement Regarding the Operation and use of the South Placer Regional Wastewater Facilities
- Level of Effectiveness: These agreements have proven effective in laying out the legal requirements and responsibilities of the regional partners (City of Roseville, South Placer Municipal Utility District, and Placer County) with regards to planning, financing, acquisition, ownership, construction, and operation of Regional Wastewater Facilities for the treatment of the wastewater collected and conveyed through the City's collection system, and treated at the Regional Wastewater Facilities.
- Recommendations: No recommended modifications at this time.

5.4 Operation and Maintenance Program

5.4.1 Compliance

Table 11. Compliance with SSS WDR D.13.iv – O&M Program

SSMP Requirement	Compliance	Deficiencies
iv(a) Collection system maps	1	-
iv(b) Preventive O&M activities	1	-
iv(c) Rehabilitation and Replacement (R&R) plan	1	-
iv(d) Training	1	-
iv(e) Equipment and critical replacement parts	1	-

5.4.2 Effectiveness of SSMP Elements and Recommended Modifications

Roseville Collection System Maps (SSMP 4.2)

- Description of Current Status: The City maintains electronic and hard copy maps of the sanitary sewer system and storm drain system. The electronic mapping data are accessible in the City's GIS and hard copy maps are located in the various utility department offices and field crew trucks.
  Maps are updated with new sub-divisions, repairs, or rehabilitation or replacement of assets that require updating of the maps. The City Mapping Update Policy is followed in order in ensure mapping is correct and completed in GIS and made available to the required users.

- Level of Effectiveness: The City meets the requirements of section D.13.iv(a) of the SSS WDR for maintaining up-to-date mapping. However, the City currently has not identified the number and length of pipeline in the collection systems that is located in easements. Doing so will assist the City in identifying assets located in areas that are potentially difficult to access, thus increasing the risk of identifying and/or responding to SSOs from those locations.
- Recommendations:
    - Include the Mapping Update Policy document as an appendix to the SSMP and post it on the City's SSMP page of its website.

Roseville Preventive Operations & Maintenance Activities (SSMP 4.3)

- Description of Current Status: The audit identified and verified that the WWC engages in programs to complete the following routine preventative O&M programs/activities: cleaning program, CCTV inspection, visual inspection, regular maintenance, construction/repair, rehabilitation projects, customer service, and staff support.

  In response to the increased number of SSOs from laterals over the last two years, the City has reassigned one additional crew to the eeling program for service lines. Eeling is a mechanical cleaning process used to remove roots or blockages.

  The City has SOPs for both office and field workflows related to CCTV inspection work. SSMP appendices D-4 and F-4 are the same SOP for SSO Containment and Mitigation. The SSMP identifies that the City has standard operating procedures for SSO response and mitigation, backhoe operation, sewer cleaning equipment, locating and marking USAs.
- Level of Effectiveness: The City sets a number of metrics to measure the performance of the O&M activities, which are listed in SSMP section 9.4. The performance measures related to the O&M activities are listed in **Table 12**. The table also lists the targets for each performance measure and the actual performance accomplished in FY11/12 and FY12/13. The table shows that the City has met or exceeded the target level of performance in all of the measures that have a target.

Table 12. Performance Measures related to SSS WDR D.13.iv(b)

Performance Measure	Target	FY11/12	FY12/13
Total miles cleaned per year	250	277	272
Total miles of mechanical root control per year	-	9.74	11.23
Total number of sewer maintenance field staff	NA	23	23
Average high velocity cleaning per crew per day	NA	1866 LF	1852 LF
Average cost of sewer mechanical cleaning	-	$1.57 /LF	$1.36/LF

The City's recent effort to bolster its eeling program has initially shown a high level of effectiveness. As mentioned in **Section 3.2.1**, the number of SSOs from laterals has dropped from four SSOs per month on average to one SSO per month on average after the initiation of the changes to the eeling program.

The SOPs for preventative maintenance work are in their preliminary stages and could be more effective if they were finalized and documented for frequent use. The SOP WWC – 01 for SSO Containment found

in the SSMP appendices, could be used as a template for standardizing the development of the remaining SOPs.

- Recommendations:
  - Identify targets for all performance measures so that data collected can be compared to a goal to assess performance and the effectiveness of SSMP activities. A comprehensive review of benchmarks or performance measures/indicators is discussed in the recommendations of **Section 5.9**.
  - Continue the efforts of the recently revised eeling program due to the immediate impact on the frequency of SSOs from laterals. Data on the number of lateral SSOs per month should be monitored so that the impact of these efforts can be evaluated at the time of the next internal SSMP audit.
  - Develop SOPs for the regular preventative maintenance activities using SOP-WWC-01 as a template. The following is a list of suggested SOPs based on the activities currently tracked with performance measures:
    - Lift station maintenance
    - Receiving and responding to customer service request

Rehabilitation and Replacement Plan (SSMP 4.4)

- Description of Current Status: Pipelines and manholes are regularly inspected in accordance with the City's WWC Capital Improvement Plan, which began in 2006. The NASSCO rating system is used to document observations and rate defects. The length of pipeline and the number of manholes inspected each year are tracked with performance measures. The City evaluates the risk of failure for each asset based on the various data sources it maintains (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections) and assigns high risk assets to the Rehabilitation and Replacement (R&R) Plan.

  The City keeps a list of known R&R CIP projects that is developed and maintained by the Rehabilitation Manager. This list outlines the planned projects over the next five year to rehabilitate the system and includes information such as; the year of action, the project budget, the bid amount for current projects, the project status (e.g., in design, in construction, in punch list, completed), and tracking of various milestones.
- Level of Effectiveness: The City sets a number of metrics to measure the performance of the WWC activities, which are listed in SSMP section 9.4. The performance measures related to the inspection activities and R&R program are listed in **Table 13**. The table also lists the targets for each performance measure and the actual performance accomplished in FY11/12 and FY12/13. The table shows that the City has met or exceeded the target level of performance in all of the measures that have a target, with one exception. In FY11/12 the City missed its goal for total miles of CCTV inspection by 0.8 miles (2.7% of the goal). The City responded in the following fiscal year by more than doubling the targeted goal for CCTV inspection.

Table 13. Performance Measures related to SSS WDR D.13.iv(c)

Performance Measure	Target	FY11/12	FY12/13
Total miles visually inspected per year (not CCTV)	-	0.25	0.25
Independent manhole inspections per year	1054	1424	1328
Number of laterals rehabilitated using CIPP per year	50	134	50
Total miles CCTV inspected per year (main)	30	29.2	67.6
Average cost of CCTV	-	$0.48/LF	$0.56/LF

The known R&R CIP projects list has proven effective in identifying and planning the projects to be completed to address high risk areas of the system.

- Recommendations: The following recommendations are given to increase the effectiveness of this SSMP element:
    - Develop SOPs for regular inspection activities using SOP-WWC-01 as a template. The following is a list of suggested SOPs based on the activities currently tracked with performance measures:
        - Alarm testing of lift stations
    - Document the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data.

Training (SSMP 4.5)

- Description of Current Status: The WWC require all employees to be certified with CWEA, DMV, CPR, First Aid, Confined Space Policy, and Gas Detector Policy, as well be trained in equipment safety, maintain OSHA rules, and review material safety data sheets.
- Level of Effectiveness: The training program has been effective in safe, well-trained staff. Over this audit period the City has reported three on-the-job accidents; two in FY11/12 and one in FY12/13. The City strives for zero on-the-job accidents and uses the training programs to improve safety at work.
- Recommendations:
    - The SSMP internal audit from FY10/11 stated that NASSCO training for condition assessment should be added to SSMP Element 4.5. The City implements the NASSCO rating system for collecting condition assessment data and provides this training to the WWC staff. While this is not a requirement of the SSS WDR, the City needs to decide if this training will be referenced in SSMP Element 4.5.
    - Use the SOPs recommended to be developed in this section as a training tool for WWC staff. The SOPs can also be used to inform contractors working in the system of the role they play in responding to and mitigating potential SSOs.

Equipment and Critical Replacement Parts (SSMP 4.6)

- Description of Current Status: The equipment inventory is found in Appendix D of the SSMP. WWC equipment use is monitored and maintained by the following persons:
    - WWC Superintendent – Equipment
    - Materials Technician – Pipes, manholes

- Mechanical Maintenance – Lift station equipment and appurtenances

The City currently has critical parts on hand but there are limited records about those parts. Appendix D-7 of the SSMP contains a matrix of the City lift stations and the types of critical spare parts (i.e., bubbler compressor, PLC cards, pumps, fuses, level control, radio telemetry, and heater/overloads).

- Level of Effectiveness: The City has experienced one SSO related to a lift station failure since 2007. The SSO occurred in 2008 as a result of a failed bubbler line, which caused the lift station to shut down. The volume of this spill was only 10 gallons due to the quick response of City staff and all 10 gallons were recovered. However, this lift station that caused the SSO is one of the smallest in the system with regards to flow rate. Although the probability of a lift station failure may be low based on the low frequency of SSOs from lift stations in the past, the consequence of such a failure could be very high and justifies the need for up-to-date records of critical spare parts.
- Recommendations:
  - The SSMP identifies the WWC Superintendent as the person responsible for maintaining lists of the equipment and critical spare parts. The position directly responsible for tracking equipment and maintaining up-to-date equipment and critical spare parts lists is Materials Technician. The SSMP should be updated to correctly reflect the responsible party for equipment and critical spare parts.

5.5 Design and Performance Provisions

5.5.1 Compliance

Table 14. Compliance with SSS WDR D.13.v – Design and Performance Provisions

SSMP Requirement	Compliance	Deficiencies
v(a) Sanitary sewer design and construction specifications	1	-
v(b) Procedures and standards for inspecting and testing new and R&R projects	1	-

5.5.2 Effectiveness of SSMP Elements and Recommended Modifications

Sanitary Sewer Design and Specifications (SSMP 5.2)

- Description of Current Status: The City's design and construction standards are available on the City website. These designs encompass the design needs for the waste water system for the City of Roseville. These standard details are available on records in the county office as well as on the City's website. The operating procedure for testing of new constructed pipes is clear and effective in determining readiness of newly constructed pipe. City specifications are updated as needed.
- Level of Effectiveness: These design and construction standards are effective in ensuring that new or rehabilitated infrastructure is designed and constructed in a manner acceptable to the City.

- Recommendations: No recommended modifications at this time.

Sanitary Sewer System Construction and Performance Provisions (SSMP 5.3)

- Description of Current Status: Section 91-12 of the City's Sanitary Sewer Construction Standards defines the criteria for testing and cleaning of installed sewer improvements. There is a punch list that must be followed to indicate compliance with this measure to ensure proper construction.
- Level of Effectiveness: This process lessens the chance of pipe failure by verifying, through proper testing, that new construction and rehabilitation work are completed correctly.
- Recommendations: No recommended modifications at this time.

5.6 Overflow Emergency Response Plan

5.6.1 Compliance

Table 15. Compliance with SSS WDR D.13.vi - OERP

SSMP Requirement	Compliance	Deficiencies
vi(a) Proper notification procedures	1	-
vi(b) Program for appropriate SSO response	1	-
vi(c) Procedure for prompt notification to regulatory agencies	1	-
vi(d) Procedures for appropriate staff and contractor training	1	
vi(e) Procedures to address emergency operations (e.g., traffic, crowd control)	1	-
vi(f) Program to ensure containment of SSO to prevent discharge and minimize adverse impacts on the environment	1	-

The State Water Board amended the monitoring and reporting program (MRP) with revised requirements (Revised MRP WQ 2013-0058-EXEC) that took effect September 9, 2013. The revised requirements are available at the State Water Resources Control Board's Sanitary Sewer Overflow Reduction Program website (http://www.waterboards.ca.gov/water_issues/programs/sso/). The changes from these revised requirements include the type data that must be collected in the event of an SSO and the follow up reporting that is required.

- Recommendations:
  - Complete all unpopulated fields in the revised "Collection System Questionnaire" in CIWQS. Enrollees have six months from the date that the revised MRP became effective to complete the questionnaire. This means that the questionnaire must be completed by approximately March 9,

2014. If this questionnaire is not completed by that time, the system will lock the Enrollee out from all reporting capabilities.

5.6.2 Effectiveness of SSMP Elements and Recommended Modifications

Notification Procedures (SSMP 6.2)

- Description of Current Status: The notification procedures are available in the on-call service vehicles and in the main office. The procedures include an easy to read flow chart with corresponding action items including contact information for the parties that require notification during an SSO event.
- Level of Effectiveness: The measures taken to ensure proper notification have been effective in providing prompt notification to the required parties based on various SSO scenarios. This is evident in the fact that the average SSO response time is just under 24 minutes for this audit period.
- Recommendations: No recommended modifications at this time.

Response Program (SSMP 6.3)

- Description of Current Status: The response procedure are documented in Appendix F-1 Section 2 of the SSMP and are summarized in a flow chart of actions required to respond to and mitigate a SSO.
- Level of Effectiveness: The flow chart steps through a series of yes/no questions to guide SSO responders to on the sequence of actions to proper assess and mitigate a SSO. This chart is simple and effective in explaining a process in which to mitigate an SSO.
  The SSO Response Program has been effective in responding and mitigating SSOs. This is evident in the fact that the average SSO duration is under 18 minutes. The average spill volume is less than 27 gallons and the average volume of SSO recovered is just over 21 gallons. The SSO response crew recovers on average almost 80% of a SSO. These averages come from the SSO data from this audit period (i.e., last two fiscal years).
- Recommendations:
  - Figure 6.2 in SSMP section 6.3 has a typographical error. There is text missing in some of the decision boxes. The same figure is in SSMP Appendix F-1(1) without the missing text. WWE recommends reinserting the figure with the corrections made or removing the figure from the SSMP and only reference Appendix F-1(1).
  - Section 2.I.A of the City SSO Response Procedures indicates that the time a call was received notifying the City of a SSO will be used as the SSO start time on the forms reported to CIWQS. WWE recommends that the City develop a SOP for estimating the start time of SSOs to include additional methods for examining possible start times to support the SSO start time entered into CIWQS.
  - The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the

decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station.

Regulatory Notification Procedure (SSMP 6.4)

- Description of Current Status: The Superintendent and Utility Manager are the legally responsible officials (LRO) for certification of SSO reports submitted to CIWQS data base. Also the Superintendent and Supervisor are responsible for reporting SSO to RWQCB, OES and Placer Environmental Health Department as necessary.
  Level of Effectiveness: This section clearly indicates the responsibility of the LRO regarding reporting SSO events to the proper authorities. To date, the City has not encountered a situation in which notification information for a required party was not available to City staff responding to a SSO.
- Recommendations: No recommended modifications at this time.

Staff and Contractors Training (SSMP 6.5)

- Description of Current Status: Each employee is required to complete SSO response procedure training. Updates and review of SSO training are included in the weekly tailgate meeting throughout the year. Contractors are also required to implement the procedures identified in the SSO training prior to working within the collection system.
- Level of Effectiveness: The implementation of the training program has been very successful as indicated in the historical data. Response and mitigation times of SSOs are almost half of the WWC set target time of 40 minutes.
- Recommendations: No recommended modifications at this time.

Emergency Response Coordination (SSMP 6.6)

- Description of Current Status: Employees are required to complete Emergency Action plan training annually. This covers HAZ WOPER 1st responder and Roseville's Incident Command System (ICS). These procedures, processes and systems are also reviewed through the year in weekly safety tail gate meetings.
- Level of Effectiveness: Training with HAZ WOPER is an effective way to ensure safety of the staff members when dealing with hazardous waste and materials.
- Recommendations: No recommended modifications at this time.

Spill Mitigation and Containment Procedure (SSMP 6.7)

- Description of Current Status: An SSOERP is available for staff to review and following during an emergency which includes an SOP for spill mitigation and containment.
- Level of Effectiveness: The SSOERP is comprehensive with indication of proper responsibilities as well as SOPs for containment (SOP WWC-01) and spill rate estimation (Section 5 of SSOERP).
- Recommendations: No recommended modifications at this time.

5.7 FOG Control Program

5.7.1 Compliance

Table 16. Compliance with SSS WDR D.13.vii – FOG Control Program

SSMP Requirement	Compliance	Deficiencies
vii(a) Public education plan	1	-
vii(b) FOG disposal plan	1	-
vii(c) Legal authority to prohibit SSOs and blockages caused by FOG discharges	1	-
vii(d) BMPs, grease removal devices, recordkeeping, and reporting requirements	1	-
vii(e) Authority to inspect and enforce FOG ordinance	1	-
vii(f) FOG Characterization Assessment and Hot Spot Cleaning Schedule	1	-
vii(g) FOG Control Program Measures	1	-

5.7.2 Effectiveness of SSMP Elements and Recommended Modifications

Public Education Plan (SSMP 7.2)

- Description of Current Status: There is a comprehensive FOG outreach program to residents, restaurants and the plumbing community on the proper disposal of FOG that the WWC adopted in May 2006. The main objective is to educate City of Roseville residents and restaurants on the proper disposal of FOG to meet or exceed outreach standards set forth in the State General WDR Requirements.
- Level of Effectiveness: This program implements modern media communication technologies; TV advertisements, flyers, inter-active website information, and information printed on monthly statements. The Public Education Plan recommends reaching out to K-12 schools to provide public education about the issues related to proper disposal of materials to the collection system. The efforts the City has made to incorporate multi-media information and target future users of the system appear to be effective in reaching the objective of educating the public on the proper disposal of FOG and other substances.
- Recommendations:
    - List Sean Bigley as the responsible party for the FOG Public Education Plan.

FOG Disposal Plan (SSMP 7.3)

- Description of Current Status: The Lab/Industrial Waste Supervisor oversees the Industrial Waste Pretreatment Program and FOG control program. Each food service establishment (FSE) is required to obtain a FOG wastewater discharge permit (FOG WDP). There are currently 294 permitted FSEs in the City. The Lab/Industrial Waste Supervisor oversees the inspection of permitted FSEs. A FOG WDP holder is required to keep all manifests, receipts and invoices of all cleaning, maintenance, grease removal from the grease control device, disposal carrier and disposal site location for no less than three years.

The City provides information about the permitting process and permit applications on the City website (address below) as a resource for businesses within the City.
http://www.roseville.ca.us/eu/wastewater_utility/fats_oils_n_grease/businesses.asp
City residents are offered free curbside pickup of FOG services that can be scheduled with the City. This helps ensure that FOG from residential units is properly collected and disposed. Information about the FOG pickup program can be found at the link below.
http://www.roseville.ca.us/eu/wastewater_utility/fats_oils_n_grease/residential.asp

- Level of Effectiveness: The City has developed a comprehensive FOG disposal program to address the various dischargers of FOG to the collection system. This program appears effective because the City has only had two FOG-related SSOs over the audit period (less than 3% of the total spills). This indicates that amount of FOG being disposed into the collection system is manageable and the FOG disposal program is meeting its objective in limiting the amount of FOG.
- Recommendations: No recommended modifications at this time.

Record Keeping Requirements (SSMP 7.4)

- Description of Current Status: The RMC Section 14.14.260 – "Recordkeeping requirements" includes a list of items that may be required to be kept for no less than three years and made available upon request of a FOG inspector/Industrial Waste technician or City representative. The SSMP further identifies which of these recordkeeping items is mandatory for a FSE and which items may be deemed mandatory at the discretion of the City.
- Level of Effectiveness: The recordkeeping requirements and timeframes identified in the RMC have been effective in providing the City the information necessary to enforce permit requirements of FSEs.
- Recommendations: No recommended modifications at this time.

Legal Authority to Prohibit SSOs and Blockages Caused by FOG Discharges (SSMP 7.5)

- Description of Current Status: The RMC section 14.12.050 provides authority to require grease and grit interceptors when the director deems necessary for proper handling of liquid waste. Additionally, chapter 14.14 of the RMC defines the City's FOG ordinance and provides the authority to implement its FOG control program, prohibit SSOs and blockages caused by FOG, and limit the concentration of FOG as set forth in RMC section 14.26.140.
- Level of Effectiveness: These codes are effective in organizing the type of equipment required to reduce FOG discharged from FSEs, as well as indicating the authority of the City to prohibit SSOs and blockages due to FOG. The City FOG Ordinance is also effective in a practical way because if the City has reason to believe that a FSE or residence is contributing too much FOG, it can numerically test the effluent from the property against the concentrations limits set in RMC section 14.26.140 to identify if there is a violation.
- Recommendations: No recommended modifications at this time.

BMP, Grease Removal Devices, Recordkeeping, and Reporting Requirements (SSMP 7.6)

Description of Current Status: The Industrial Waste Section requires that all FSEs have best management practices (BMPs) in accordance with the City FOG ordinance. Also each FSE must have an appropriately

sized grease removal device per the Uniform Plumbing Code and they must maintain records as outlined in section 7.4 of the SSMP.

The City provides information about BMP requirements, BMP posters, and BMP information sheets on the following topics; proper grease disposal, requirements for new and remodeled FSEs, grease interceptor maintenance, grease trap maintenance, selecting a grease hauler, a list of licensed grease haulers, dumpster maintenance, and equipment cleaning on the City website (address below) as a resource for businesses within the City.

http://www.roseville.ca.us/eu/wastewater_utility/fats_oils_n_grease/businesses.asp

The City supplements the information provided on its website through onsite inspections/meetings with FSEs to reinforce the level of understanding of the FOG program and its requirements.

- Level of Effectiveness: The City's efforts to disseminate information regarding BMPs, grease removal devices and the associated record keeping and reporting requirements have been effective.
- Recommendations: No recommended modifications at this time.

Inspection and Enforcement Authority – FOG Producers (SSMP 7.7)

- Description of Current Status: All FSEs that discharge wastewater containing FOG into the sewer system are required to obtain a Fat, Oil, and Grease Water Discharge Permit (FOG WDP) from the City. FOG WDPs are expressly subject to all provisions of the ordinances and regulations regarding FOG, charges for use, and violation fees established by the City. The RMC section 14.14.290 provides City representatives right of entry to access and inspect permitted FSEs.

  The City currently has 294 FSEs subject to FOG control that are connected to its system. All 294 FSEs are permitted under the City's FOG control program. Over the past 12 months, all 294 of the FSEs received a FOG inspection. During that same time zero enforcement actions were initiated. The Industrial Waste Section plans to conduct 294 FOG inspections (i.e., every FSE again) in the next 12 months.
- Level of Effectiveness: Over the period of this audit, two SSOs (less than 3% of the total spills over the audit period) were caused by blockages in the collection system due to FOG. The total volume of wastewater that left the system as a result of these two spills was 77 gallons or less than 4% of the total volume of wastewater spilled during the audit period. As identified in **Section 3.1** above, FOG is not a significant contributor the number or volume of SSOs. If FOG were a significant contributor to SSOs, then it would be expected that the number of enforcement actions might be higher and potentially taken against FSEs contributing to the blockages. However, the low number of FOG-related SSOs correlates with the low number of FOG-related enforcement actions.

  Currently, the communication between IWS and WWC departments is limited regarding the correlation between pipelines with deposits of FOG and FSEs with poor maintenance of BMPs and grease removal devices.
- Recommendations:
  - Schedule routine meetings between WWC and IWS to share findings from preventative maintenance activities and FSE inspections to identify FSEs who are negatively impacting the collection system by discharging excessive amounts of FOG. An active FSE inspection program and communication of inspection results is key to a FOG control program.

FOG Characterization Assessment and Hot Spot Cleaning Schedule (SSMP 7.8)

- Description of Current Status: The City conducted a FOG characterization assessment of the system that established a hot spot cleaning schedule. This schedule includes quarterly, semiannually, and annually cleaning to ensure that FOG is controlled in these lines that are subject to FOG blockages. Additionally, each hot spot is CCTV inspected once each year to verify the cleaning schedule is adequate to mitigate the probability of a FOG blockage. The cleaning schedule and records of cleaning are documented in the CMMS. The City currently has 101 pipeline segments on the hot spot cleaning schedule.
- Level of Effectiveness: The City's aggressive hot spot cleaning schedule has proven effective in limiting the number of SSOs due to FOG blockages.
- Recommendations:
    - Develop a SOP describing the process of how pipelines are added to the hot spot cleaning schedule, how the cleaning frequency (i.e., quarterly, semiannually, annually) for each hot spot is initially set, and how the cleaning frequency for an individual hot spot may be adjusted over time.
    - SSMP section 7.8, paragraph three contains a typographical error. It states that "sewer line maintenance work orders are issued and completed to ensure that hot spot lines **do** have grease blockages/SSOs between cleaning schedules". The word "do" should be changed to "do not".

FOG Control Program Measures (SSMP 7.9)

- Description of Current Status: The Industrial Waste Section has instituted a FOG waste discharge permit (FOG WDP) as the method of source control for FSEs. A FSE must obtain a FOG WDP before it is able to discharge to the public sewer per the RMC section 14.14.030. The City uses the FOG WDP as a means to apply incremental and progressive discipline if permit holders are in violation of the FOG ordinance until performance measurements are met.
- Level of Effectiveness: This City's FOG source control measures have proven effective during the period of this audit with respect to the low number of FOG-related SSOs.
- Recommendations: No recommended modifications at this time.

5.8 System Evaluation and Capacity Assurance Plan

5.8.1 Compliance

Table 17. Compliance with SSS WDR D.13.viii - SECAP

SSMP Requirement	Compliance	Deficiencies
viii(a) Evaluate hydraulic deficiencies	2	The schedule is to be reviewed and updated consistent with the SSMP review and update requirements in SSS WDR D.14 (i.e., every 5 years). The schedule is 7 years old.
viii(b) Establish design criteria	1	-
viii(c) Establish short- and long-term CIP	1	-
viii(d) Develop schedule of completion dates for CIP	1	-

5.8.2 Effectiveness of SSMP Elements and Recommended Modifications

Evaluation Process – Capacity Enhancement Projects (SSMP 8.2)

- Description of Current Status: The City developed two hydraulic models (i.e., the Roseville Model Project and the South Placer Wastewater Authority (SPWA) Wastewater Systems Evaluation Project) to identify peak flows in each collection system component (i.e., pipe and pump station). The evaluation of hydraulic capacity using these two models identified potential deficiencies and recommended improvements. Additionally, the City has started the process of evaluating the hydraulic capacity of the collection system again.
- Level of Effectiveness: Appendix I-1 of the SSMP indicates that the system evaluation & capacity assurance plan will be reviewed and updated every five years. The Roseville Model Project and the SPWA Wastewater Systems Evaluation Project were both conducted in 2006 (seven years ago). According to the SSMP, the system should have been reevaluated in 2011. However, the modeling efforts conducted in 2006 have been effective in evaluating the system and planning for future capacity.
- Recommendations: Complete the recently initiated capacity assessment so that changes to the system can be updated and recent flow monitoring results can be used to update findings to reflect current conditions and revisions to planned development. The City should consider revising the planned frequency for system evaluation updates if a frequency of five years is not warranted based on system needs.

Design Criteria (SSMP 8.3)

- Description of Current Status: The City established a 10-year 24-hour peak wet weather design storm for the evaluation of existing collection system components and sizing of new collection system components. This included the development of wastewater flow generation factors based on water use records and flow monitoring data.
- Level of Effectiveness: A 10-year 24-hour peak wet weather design storm has been effective in accounting for the impact wet weather on the system and planning for system improvements. In December 2012, a

storm occurred that resulted in two Category 1 SSOs that were caused by excessive rainfall as reported to CIWQS. This was actually one SSO that had two appearance points. The appearance points were two manholes that are located next to a utility path/bike path that runs along a tributary to Linda Creek. The combined SSO volume was approximately 400 gallons, all of which flowed into the creek. Considering the relatively small SSO volume that resulted from the rainfall event, the existing design storm appears sufficient.

- Recommendations: Add documentation to internal SSO reports showing that the amount of precipitation over a 24-hour period exceeded 2.82 inches if the cause of the SSO is identified as "rainfall exceeded design". The lower bound of the 10-year 24-hour precipitation frequency estimate with a 90% confidence interval from the NOAA Atlas 14, Volume 6, Version 2 data for the Rocklin (station ID 04-7516) is 2.82 inches.

  Investigate excessive I/I observed from satellite agencies (e.g., observed peaking factors) associated with storms that caused an SSO to document the correlation between the SSO and the excessive offsite I/I.

Capacity Enhancement Measures (SSMP 8.4)

- Description of Current Status: The SPWA Wastewater Systems Evaluation includes the identification of short and long-term Capital Improvement Projects (CIP) to meet current and future build-out flow projections for trunk sewers larger than 15 inches. Two capacity deficiencies under peak wet weather scenarios were identified in the SPWA Wastewater Systems Evaluation. The Roseville Model Project did not include the identification of capacity improvement projects.
- Level of Effectiveness: The Roseville Model Project evaluated the capacity of every pipe within the City collection system. However, the project did not identify measures to address capacity deficiencies. Appendix H-1 of the SSMP states that the process of identifying projects to address capacity deficiencies will be performed by the City at a later date.
- Recommendations: No recommended modifications at this time.

Capital Improvement Program Schedule (SSMP 8.5)

- Description of Current Status: The following table lists the projects that are identified in the SPWA Wastewater Systems Evaluation that identify the City as the agency with the primary responsibility for the project. The other projects identified in the SPWA Wastewater Systems Evaluation do not list the City as the agency with primary responsibility, so they are not considered in this audit.

Table 18. Schedule of CIPs to Address Capacity Deficiencies

CIPs (from SPWA Report)	Responsible Agency	Assigned Date	Completed Date	Revised Date
Improvement Project 5 – Area D	Roseville	APR 2006	SEP 2006	NA
Improvement Project 6 – Area E	Roseville	APR 2006	NA	NA

SSMP Appendix H-1 states that the SPWA project at Area D, which consisted of installing a diversion structure to shed approximately 1.1 mgd at manhole B06-313 to the existing 33-inch trunk sewer, was

completed by the fall of 2006. Flow monitoring of Area E was completed and following the evaluation of the data, it was determined that the proposed sewer relief project is not required.
The existing CIP schedule is

- Level of Effectiveness: The schedule of capital improvement projects to address potential hydraulic deficiencies in the system has been effective in identifying the tasks needed to assure hydraulic capacity within the collection system.
- Recommendations: No recommended modifications at this time.

5.9 Monitoring, Measurement, and Program Modifications

5.9.1 Compliance

Table 19. Compliance with SSS WDR D.13.ix – MMM

SSMP Requirement	Compliance	Deficiencies
ix(a) Maintain metrics to prioritize SSMP activities	1	-
ix(b) Measure effectiveness of SSMP elements	1	-
ix(c) Assess preventative maintenance program	1	-
ix(d) Update elements based on evaluations	1	-
ix(e) Identify and illustrate SSO trends	1	-

5.9.2 Effectiveness of SSMP Elements and Recommended Modifications

Utility Metrics to Prioritize SSMP Activities (SSMP 9.2)

- Description of Current Status: The City has established four categories of metrics to monitor and measure the effectiveness of the various elements of this SSMP: System Information, Financial Information, Sewer Maintenance, and Performance Measures. In addition to these metrics, the City maintains a number of performance measures related to various SSMP activities. A summary of all of the performance measures tracked by the City is included in **Appendix 7.2** of this internal audit.
- Level of Effectiveness: Appendix I has effectively been used to identify and track the specific metrics in each of the four categories established by the City.
- Recommendations: Update Appendix I-Benchmarking Metrics on City website with information from FY11/12 and FY12/13.

Metrics to Monitor Effectiveness of SSMP (SSMP 9.3)

- Description of Current Status: SSMP Appendix I is a schedule that assigns individual staff members to one or more SSMP element and defines the frequency that each element must be monitored and updated.
- Level of Effectiveness: The City currently tracks performance using a number of metrics. However, none of these metrics are associated with specific SSMP elements. Some of these metrics have identified targets or goals, but not all. These metrics can be used to measure the effectiveness of elements, but without associating metrics with specific SSMP elements and without setting goals for each metric it is difficult to monitor the effectiveness of the SSMP.
- Recommendations:

- Update Appendix I. This appendix includes information from the initial 2007 Implementation Schedule. The initial SSMP implementation and the SWRCB compliance schedule concluded many years ago and does not need to be included in the SSMP. However, the information regarding the continual implementation of the SSMP such as the document location, responsible person, and review frequency should be included.
- Identify the metrics that correspond with specific elements of the SSMP and develop numerical goal ranges so the data currently collected and monitored by the City can be used as performance indicators (PIs) to quantitatively monitor SSMP effectiveness. The ultimate measure of SSMP effectiveness is the limiting of SSOs. However, setting goals for activities related to various SSMP elements and measuring performance against those goals, will help determine how success in those elements, relates to the overall effectiveness of limiting SSOs. Associating metrics with specific SSMP elements will allow for direct assessment of those elements and provide consistency in their evaluation in future audits. **Appendix 7.2** of this internal audit contains a list of PI and associates each one with a SSMP element, a suggested audit frequency, and a person responsible for monitoring that PI. A sample Performance Indicator Assessment Form is included in **Appendix 7.3** of this internal audit. Performance Indicator Assessment Forms can be developed for each metric and assessed periodically by the person responsible, according to the suggested audit frequency for that metric. At the time of the next internal SSMP audit, the completed Performance Indicator Assessment Forms can be used to evaluate the effectiveness of SSMP elements and included as attachments to the audit.
- Consider tracking additional metrics targeted at measuring the effectiveness of SSMP elements that do not currently have metrics associated with them. A list of potential performance measures listed by SSMP element is included in **Appendix 7.2** of this internal audit.

Metrics to Assess Preventative Maintenance Program (SSMP 9.4)

- Description of Current Status: The metrics listed in SSMP section 9.4 are measured, recorded, and analyzed to assess the effectiveness of the preventative maintenance program. **Table 20** below contains a summary of the metrics listed in SSMP section 9.4 as well as other performance metrics tracked by the City in various appendices and reports. The column labeled "Source" identifies which plan, appendix, or report tracks a particular metric.

Table 20. Summary of Current Preventative Maintenance Performance Metrics

Performance Indicator	Unit	Target	Source
Sewer main - flushed	Miles	250	A, B, C, D, E
Service laterals - cleaned	Miles	8	D
Sewer main – visually inspected (not CCTV)	Miles	-	A, B
Manholes – cleaned and inspected	Number	1054	A, D
Manholes - rehabilitated	Number	25	D
Service laterals - rehabilitated	Number	50	A, C, D, E
Service laterals – mechanically cleaned (eeled)	Miles	8	A, E
Sewer main - CCTV inspected	Miles	30	A, B, C, D, E
Service laterals - CCTV inspected	Miles	16	B, D, E
Total number of sewer maintenance field staff	Number	-	A, B
Working staff time to PM program	%	80	D
Total emergency work orders	Number	-	B
Average high velocity cleaning per crew per day	LF/day	-	A, B
Average cost of sewer mechanical cleaning	$/LF	-	A, B
Average cost of hydro cleaning	$/LF	-	B
Average cost of CCTV (main)	$/LF	-	A, B
Average cost of CCTV (lateral)	$/LF	-	B
Cleanouts - installed	Number	100	B, C, D
On-the-Job accidents	Number	0	D, E
Average response time to customer inquiry	Minutes	40	A, D, C

A = SSMP section 9.4
B = SSMP Appendix I
C = WW Collections KPIs
D = Program / Performance Reports
E = Strategic Plan Data

- Level of Effectiveness: The City tracks a number of metrics to quantitatively evaluate the performance of the activities of the preventative maintenance program. This is effective because it allows the City to monitor the performance of particular activities over time and against other metrics (e.g., staffing levels, SSO trends) to determine correlations between the data. However, not all of the metrics have an associated goal, which makes it difficult to assess whether or not that activity is meeting the intended result.
- Recommendations: Using the data collected in SSMP Appendix I as a reference, develop goals for metrics that track preventative maintenance activities and identify the person/position responsible for tracking data against those goals. See **Appendix 7.2** for a list of potential performance indicators for preventative maintenance activities with responsible parties.

SSMP Performance Monitoring and Update Process (SSMP 9.5)

- Description of Current Status: Individual staff responsibilities for each SSMP element and the frequency that each element must be monitored are defined in SSMP Appendix I. The City tracks revisions/updates to the SSMP using a SSMP Revision Log that is maintained by the LRO. The SSMP Revision Log is a

spreadsheet that chronicles revisions to the SSMP by logging the date of the revision, the SSMP element that was changed, a brief description of the change, and who made the change.

- Level of Effectiveness: The SSMP Revision Log is effective in tracking changes to the SSMP.
- Recommendations: Assign the individuals responsible for the various elements of the SSMP to complete the Performance Indicator Assessment Forms that are developed for their SSMP elements. See **Appendix 7.2** for a list of potential performance indicators with the assigned responsible parties.

SSO Trends – Frequency, Location and Volume (SSMP 9.6)

- Description of Current Status: The metrics listed in SSMP section 9.6 are measured, recorded, and analyzed to identify and illustrate SSO trends, including: frequency, location, and volume. **Table 21** below contains a summary of the metrics listed in SSMP section 9.6 as well as other performance metrics tracked by the City in various appendices and reports. The column labeled "Source" identifies which plan, appendix, or report tracks a particular metric.

Table 21. Current Performance Measures to Monitor SSO Trends

Performance Measure	Unit	Target	Source
SSOs - Total number, mains and laterals	Number	-	A, B
SSOs - Total volume, mains and laterals	Gal	-	A, B
SSOs - Total volume recovered	Gal	-	B
SSOs - Total number of wet weather	Number	-	A, B
SSOs - Total volume of wet weather	Gal	-	A, B
SSOs - % of spills caused by FOG (main)	%	-	A, B
SSOs - % of spills caused by roots (main)	%	-	A, B
SSOs - % of spills caused by Vandalism (main)	%	-	A, B
SSOs - caused by LS failures	Number	-	A, B
SSOs - caused by pipe failures	Number	-	A, B
SSOs - % of spill volume caused by FOG (lateral)	%	-	A, B
SSOs - % of spill volume caused by roots (lateral)	%	-	A, B
SSOs - % of spill volume caused by Vandalism (lateral)	%	-	A, B
Customer service requests per year	Number	-	A, B
Sewer odor complaints	Number	-	A, B
Flooding claims per year	Number	-	A, B
Cost of flooding claims per year	$	-	A, B
SSO – Repeats within two years	Number	0	B, C
SSOs - Category 1	Number	0	C, D
SSOs / 100 mi pipe / year - Category 2	Number	2.0	C
SSOs / 100 mi pipe / year - Mainline	Number	0.6	C
SSOs / 100 mi pipe / year - Lateral	Number	8.0	C

A = SSMP section 9.6
B = SSMP Appendix I
C = WW Collections KPIs
D = Program / Performance Reports

- Level of Effectiveness: Data for most of the metrics listed in **Table 21** are tracked annually in SSMP Appendix I and the Program / Performance Report. This allows the City to effectively review trends in SSOs over time.
- Recommendations: Using the data collected in SSMP Appendix I as a reference, set performance goals for the metrics used to illustrate SSO trends. See **Appendix 7.2** for a list of potential performance indicators related to SSO trends.

5.10 SSMP Program Audits

5.10.1 Compliance

Table 22. Compliance with SSS WDR D.13.x – SSMP Program Audits

SSMP Requirement	Compliance	Deficiencies
x Conduct periodic audits	1	-

5.10.2 Effectiveness of SSMP Elements and Recommended Modifications

Audit Procedures, Roles, and Responsibilities (SSMP 10.2)

- Description of Current Status: The City conducts an internal audit biennially with a primary focus on the evaluation of system metrics towards the elimination of preventable SSO and the reduction of the impact of those SSOs that do occur.
  The City developed an audit form as a template to record information produced during internal SSMP audits. This form is included in SSMP Appendix J-2.
- Level of Effectiveness: The internal audit has had success in identifying areas of improvement. The past audit identified two major enhancements and plans were put in place to improve the SSMP. This audit has specified additional recommended enhancements. The regular review of the SSMP is effective in assuring the usefulness of the planned activities.
  The Audit Form in Appendix J-2 assesses the compliance of the SSMP. However, the Audit Form does not adequately evaluate the effectiveness of the SSMP elements. SSS WDR D.13(x) requires that the internal audits evaluate both the *effectiveness* of the SSMP and the Enrollee's *compliance* with the SSMP requirements.
- Recommendations:
  - Post this SSMP internal audit to the City website.
  - Schedule the next internal SSMP audit for July - August 2015.
  - The SSMP must be recertified by the City Council before January 21, 2014. Per SSS WDR D.14, the City must have the SSMP updated and re-certified by the governing board (i.e., City Council) every five years. The City Council approved the original SSMP on January 21, 2009 which sets the date for re-certification on January 21, 2014.

- Revise Appendix J-1 to reflect recommendations for review of performance indicators (i.e., metrics associated with specific SSMP elements and the associated timelines).
- Revise Appendix J-2 (Audit Form) to provide areas in the tables for each SSMP element to conduct an assessment of both 1) the compliance against SSMP requirements and 2) the effectiveness of the SSMP element. Information gathered on the recommended Performance Indicator Assessment Forms should be included in the "Support Documents and Data" section of the Audit Form.

SSMP Program Modification/Update Process (SSMP 10.3)

- Description of Current Status: The City established a program for monitoring and reviewing sewer performance metrics on a periodic basis and the status of each element of the SSMP on a biennial basis. The City conducts internal SSMP audits every two years following the adoption of this SSMP. The Wastewater Utility Manager is assigned to initiate/direct corrective action when and if SSMP deficiencies are identified between/during periodic internal audits.
- Level of Effectiveness: The City has been prompt in responding to deficiencies/enhancements identified during regular reviews of SSMP data and during formal internal audits as documented in the City's SSMP Revision Log.
- Recommendations:
  - Document the submittal process for proposed changes to the SSMP. The process may include, the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes.

5.11 Communication Program

5.11.1 Compliance

Table 23. Compliance with SSS WDR D.13.xi – Communications Program

SSMP Requirement	Compliance	Deficiencies
xi(a) Communicate on a regular basis with the public and tributary/satellite systems regarding SSMP	1	-

5.11.2 Effectiveness of SSMP Elements and Recommended Modifications

Internal Communication – Staff, Utility Commission, and City Council (SSMP 11.2)

- Description of Current Status: The WWC uses two PowerPoint presentations for the purpose of presenting internally to the City Council and City staff, the purposes of the SSMP. The presentations are organized in a simple manner to explain an overview of the SSS WDR. These presentations support the City's WDR Awareness Program with the goal to provide staff with an overview of the SSS WDR regulation and educate the Public Utilities Commission and the City Council.

- Level of Effectiveness: This has been an effective way to ensure the City Council and WWC department have clear communications regarding the expectations place on the City with regards to complying with the regulation, the City's SSMP to limit SSOs and address the requirements of the regulation. These presentations were used during the initial implementation of the SSMP to educate City Council and staff on the new requirements being placed on the City.
- Recommendations:
    - As of September 2013 the State Water Board amended the MRP of the SSS WDR. Update or develop a new PowerPoint presentation to reflect the new reporting requirements and how it affects the City.

Stakeholder Communication – Residential, Commercial and Industrial (SSMP 11.3)

- Description of Current Status: The City communicates information about the SSMP by posting the entire SSMP (including appendices) on the City website. The contact information of the City's LROs is included on the website inviting public input or questions about the SSMP.

  The City has a created a PowerPoint presentation for the purpose of presenting in a public setting. The presentation is organized in a simple manner to provide an overview of the SSS WDR. This presentation has been presented as needed to the public in regards to informing the public about the implementation process of the SSMP to limit SSOs.

  The City also produces a series newsletters called "EU Today" that are distributed to customers and posted on the City website every two months with information about FOG and what not to flush. A crucial step to prevent SSOs is collaboration with the public.

  The City developed a marketing objective and strategy for the FOG outreach program targeted to Roseville residents and restaurants. The outreach program includes television advertisement, mail notices and direct visits to heavy FOG producing food service establishments. The City developed a budget, broken down by month, to fund the activities of the FOG outreach marketing plan.

  Additionally, the City joined with other agencies in the region (the Cities of Auburn and Lincoln and Placer County) to develop an outreach program to educate residents about the consequences of what is put into the sewers with of ultimate goal of protecting the environment. The Live Sewer Smart campaign has information available on the internet, monthly newsletters, and the campaign participates in public events.
- Level of Effectiveness:

  Posting the SSMP on the City website has been an effective way for communicating information about the SSMP to the public. The City has made significant efforts to modify/update the SSMP so that the information there is current and accessible to all who desire access.

  The PowerPoint presentation has been used in public meetings. The effectiveness of how well these presentations educate the general public about the SSMP is difficult to measure.

  The City devotes significant staff time on a regular and reoccurring basis to produce the "EU Today" newsletters. These newsletters are distributed to the City's customers on a regular basis and provide another conduit of information about the ways the customers can support the aims of the SSMP.

The FOG outreach program has multiple ways of communicating information to the public. This increases the likelihood that all members of the community will receive information about the items that may be properly disposed into the waste water conveyance system.

The LiveSewerSmart campaign has been another effective tool in communicating to the public about the ways in which they impact the potential for blockages and SSOs in the system.

- Recommendations: No recommended modifications at this time.

Tributary/Satellite Communication (11.4)

- Description of Current Status: The City has created and implemented agreements to facilitate communication with tributary/satellite agencies. The WWC routinely communicates with their satellite partners and often supports them with mutual aid sharing equipment and resources. The City has three formal agreements that include the following:
  - The Joint Exercise of Powers Agreement for the SPWA
  - The Agreement Regarding the Operation and Use of the South Placer Regional WW Facilities
  - The Funding Agreement Relating to the South Placer Regional WW Facilities
- Level of Effectiveness: Having agreements in place is great preparation for establishing a source of help during an emergency event. A quarterly meetings with the regional partners has proven effective to discuss the ongoing coordinate between the tributary/satellite systems.

  A small portion of the City discharges to the Sacramento Area Sewer District's (SASD) sewer collection system. The City identified this portion of its system that is satellite to SASD and is in the process of formalizing an agreement with SASD about the expectations between the two agencies.
- Recommendations:
  - Finalize the formal agreement with Sacramento Area Sewer District (SASD) regarding the discharge of wastewater from the City collection system into the SASD system.
  - Update SSMP section 11.4 to reference Appendix C-5 for the Joint Exercise of Powers Agreement for the SPWA and to reference SSMP Appendix C-6 for the Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities.
  - Update SSMP Appendix K-5 to include the Funding Agreement Relating to the South Placer Wastewater Facilities. It currently includes only the flysheet.
  - Update SSMP document to reference the appendices included on the City website (i.e., Appendix K-6 Sewer Smart Newsletter and Appendix K – FOG Pharm Outreach 2012-13 Budget).

SECTION 6 Audit Summary

This section summarizes the level of compliance of the SSMP with the SSMP requirements identified in subsection D.13 and the identified deficiencies as described in **Section 4.1**. **Table 24** is a summary of the results of that evaluation.

Table 24. Summary of SSMP Compliance Deficiencies

SSMP Requirement	Compliance	Deficiencies
viii(a) Evaluate hydraulic deficiencies	2	The schedule is to be reviewed and updated consistent with the SSMP review and update requirements in SSS WDR D.14 (i.e., every 5 years). The schedule is 7 years old.

This section also summarizes the recommended enhancements made during the process of evaluating each SSMP elements effectiveness as described in **Section 4.2**. **Table 25** is a summary of those recommendations.

Table 25. Summary of Audit Recommendations

SSMP Section	Recommendation	Timeline for Completion
2.1	Appendix B-1 needs to be updated to show Ken Glotzbach and Chris Bracco as LROs for the City. Additionally, once Dan Pruden (Wastewater Collections Supervisor) is registered as a Data Submitter in CIWQS, his information should be added to Appendix B-1 and updated on the City website.	JAN 2014
2.3	Figure 2.2 in SSMP section 2.3 has typographical errors. There is text missing. The figure found in SSMP Appendix F-1 (1) - SSO Procedures Flowchart is the same chart, but includes all of the text. WWE recommends reinserting the figure from Appendix F-1 (1) into section 2.3 of the SSMP with the corrections made.	JAN 2014
2.3	Appendix B-3 includes a call list of staff members who are on call during non-business hours; this is out of date, but also unnecessary. WWE recommends the City develop a SOP for the call center procedures for receiving calls and mobilizing field staff. A call list may be kept internally as deemed necessary by the City.	JAN 2014
4.2	Include the Mapping Update Policy document on the City SSMP website	JAN 2014
4.3	Identify targets for all performance measures so that data collected can be compared to a goal to assess performance and the effectiveness of SSMP activities. A comprehensive review of benchmarks or performance measures/indicators is discussed in the recommendations of **Section 5.9.**	JAN 2014
4.3	Continue the efforts of the recently revised eeling program due to the immediate impact on the frequency of SSOs from laterals. Data on the number of lateral SSOs per month should be monitored so that the impact of these efforts can be evaluated at the time of the next internal SSMP audit.	JAN 2014

SSMP Section	Recommendation	Timeline for Completion
4.3	Develop SOPs for the regular preventative maintenance activities using SOP-WWC-01 as a template. The following is a list of suggested SOPs based on the activities currently tracked with performance measures: ▪ Lift station maintenance ▪ Receiving and responding to customer service request	JUL 2014
4.4	Develop SOPs for regular inspection activities using SOP-WWC-01 as a template. The following is a list of suggested SOPs based on the activities currently tracked with performance measures: ▪ Alarm testing of lift stations	JUL 2014
4.4	Document the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data.	SEP 2014
4.5	The SSMP internal audit from FY10/11 stated that NASSCO training for condition assessment should be added to SSMP Element 4.5. The City implements the NASSCO rating system for collecting condition assessment data and provides this training to the WWC staff. While this is not a requirement of the SSS WDR, the City needs to decide if this training will be referenced in SSMP Element 4.5.	JAN 2014
4.5	Use the SOPs recommended to be developed in this section as a training tool for WWC staff. The SOPs can also be used to inform contractors working in the system of the role they play in responding to and mitigating potential SSOs.	JAN 2014
4.6	The SSMP identifies the WWC Superintendent as the person responsible for maintaining lists of the equipment and critical spare parts. The position directly responsible for tracking equipment and maintaining up-to-date equipment and critical spare parts lists is Materials Technician. The SSMP should be updated to correctly reflect the responsible party for equipment and critical spare parts.	JAN 2014
6	Complete all unpopulated fields in the revised "Collection System Questionnaire" in CIWQS. Enrollees have six months from the date that the revised MRP became effective to complete the questionnaire. This means that the questionnaire must be completed by approximately March 9, 2014. If this questionnaire is not completed by that time, the system will lock the Enrollee out from all reporting capabilities.	JAN 2014
6.3	Figure 6.2 in SSMP section 6.3 has a typographical error. There is text missing in some of the decision boxes. The same figure is in SSMP Appendix F-1(1) without the missing text. WWE recommends reinserting the figure with the corrections made or removing the figure from the SSMP and only reference Appendix F-1(1).	JAN 2014
6.3	Section 2.I.A of the City SSO Response Procedures indicates that the time a call was received notifying the City of a SSO will be used as the SSO start time on the forms reported to CIWQS. WWE recommends that the City develop a SOP for estimating the start time of SSOs to include additional methods for examining possible start times to support the SSO start time entered into CIWQS.	JAN 2014

SSMP Section	Recommendation	Timeline for Completion
6.3	The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station.	JAN 2014
7.2	List Sean Bigley as the responsible party for the FOG Public Education Plan.	JAN 2014
7.7	Schedule routine meetings between WWC and IWS to share findings from preventative maintenance activities and FSE inspections to identify FSEs who are negatively impacting the collection system by discharging excessive amounts of FOG.	JAN 2014
7.8	Develop a SOP describing the process of how pipelines are added to the hot spot cleaning schedule, how the cleaning frequency (i.e., quarterly, semiannually, annually) for each hot spot is initially set, and how the cleaning frequency for an individual hot spot may be adjusted over time.	JUL 2014
7.8	SSMP section 7.8, paragraph three contains a typographical error. It states that "sewer line maintenance work orders are issued and completed to ensure that hot spot lines **do** have grease blockages/SSOs between cleaning schedules". The word "do" should be changed to "do not".	JAN 2014
8.2	Reevaluate the capacity of the system so that changes to the system can be updated and recent flow monitoring results can be used to update findings to reflect current conditions and revisions to planned development. The City should consider revising the planned frequency for system evaluation updates if a frequency of five years is not warranted based on system needs.	JAN 2014
8.3	Add documentation to internal SSO reports showing that the amount of precipitation over a 24-hour period exceeded 2.82 inches if the cause of the SSO is identified as "rainfall exceeded design". The lower bound of the 10-year 24-hour precipitation frequency estimate with a 90% confidence interval from the NOAA Atlas 14, Volume 6, Version 2 data for the Rocklin (station ID 04-7516) is 2.82 inches.	JAN 2014
9.2	Update Appendix I-Benchmarking Metrics on City website with information from FY11/12 and FY12/13	JAN 2014
9.3	Update Appendix I. This appendix includes information from the initial 2007 Implementation Schedule. The initial SSMP implementation and the SWRCB compliance schedule concluded many years ago and does not need to be included in the SSMP. However, the information regarding the continual implementation of the SSMP such as the document location, responsible person, and review frequency should be included	JAN 2014
9.3	Identify the metrics that correspond with specific elements of the SSMP and develop numerical goal ranges so the data currently collected and monitored by the City can be used as performance indicators (PIs) to quantitatively monitor SSMP effectiveness.	JAN 2014

SSMP Section	Recommendation	Timeline for Completion
9.3	Consider tracking additional metrics targeted at measuring the effectiveness of SSMP elements that do not currently have metrics associated with them. A list of potential performance measures listed by SSMP element is included in **Appendix 7.2** of this internal audit.	JAN 2014
9.4	Using the data collected in SSMP Appendix I as a reference, develop goals for metrics that track preventative maintenance activities and identify the person/position responsible for tracking data against those goals. See **Appendix 7.2** for a list of potential performance indicators for preventative maintenance activities with responsible parties.	JAN 2014
9.5	Assign the individuals responsible for the various elements of the SSMP to complete the Performance Indicator Assessment Forms that are developed for their SSMP elements. See **Appendix 7.2** for a list of potential performance indicators with the assigned responsible parties.	JAN 2014
9.6	Using the data collected in SSMP Appendix I as a reference, set performance goals for the metrics used to illustrate SSO trends. See **Appendix 7.2** for a list of potential performance indicators related to SSO trends.	JAN 2014
10.2	Post this SSMP internal audit to the City website.	JAN 2014
10.2	Schedule the next internal SSMP audit for July - August 2015.	JAN 2014
10.2	The SSMP must be recertified by the City Council before January 21, 2014. Per SSS WDR D.14, the City must have the SSMP updated and re-certified by the governing board (i.e., City Council) every five years. The City Council approved the original SSMP on January 21, 2009 which sets the date for re-certification on January 21, 2014.	JAN 2014
10.2	Revise Appendix J-1 to reflect recommendations for review of performance indicators (i.e., metrics associated with specific SSMP elements and the associated timelines).	JAN 2014
10.2	Revise Appendix J-2 (Audit Form) to provide areas in the tables for each SSMP element to conduct an assessment of both 1) the compliance against SSMP requirements and 2) the effectiveness of the SSMP element. Information gathered on the recommended Performance Indicator Assessment Forms should be included in the "Support Documents and Data" section of the Audit Form.	AUG 2015
10.3	Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes.	DEC 2014
11.2	As of September 2013 the State Water Board amended the MRP of the SSS WDR. Update or develop a new PowerPoint presentation to reflect the new reporting requirements and how it affects the City.	JAN 2014
11.4	Finalize the formal agreement with Sacramento Area Sewer District (SASD) regarding the discharge of wastewater from the City collection system into the SASD system.	DEC 2014

SSMP Section	Recommendation	Timeline for Completion
11.4	Update SSMP section 11.4 to reference Appendix C-5 for the Joint Exercise of Powers Agreement for the SPWA and to reference SSMP Appendix C-6 for the Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities.	JAN 2014
11.4	Update SSMP Appendix K-5 to include the Funding Agreement Relating to the South Placer Wastewater Facilities. It currently includes only the flysheet.	JAN 2014
11.4	Update SSMP document to reference the appendices included on the City website (i.e., Appendix K-6 Sewer Smart Newsletter and Appendix K – FOG Pharm Outreach 2012-13 Budget).	JAN 2014

SECTION 7 Appendices

7.1 Appendix – Historical SSO Data

7.2 Appendix – Performance Indicators

7.3 Appendix – Sample Performance Indicator Assessment Form

7.1 Appendix – Historical SSO Data

Dated: FY 2012 – FY 2013

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
7/20/2011	127 Elm Street A Roseville, 95678	Category 2	20	20	Root intrusion	Root intrusion caused 20 gallons of sewage to spill from Gravity sewer; City Cleanout at 127 A Elm Street to Unpaved surface; Other (specify below);Landscape Area: No surface water body affected:
8/13/2011	201 Berkeley Avenue Roseville, 95678	Category 2	50	50	Debris-Rags	Debris-Rags caused 50 gallons of sewage to spill from Gravity sewer at 201 Berkeley Ave to Other paved surface: No surface water body affected:
8/22/2011	251 Elm Street Roseville, 95678	Category 2	20	20	Debris-Rags	Debris-Rags caused 20 gallons of sewage to spill from Gravity sewer; City Cleanout at 251 Elm Street to Unpaved surface: No surface water body affected:
9/11/2011	1332 Blossom Hill Way Roseville, 95661	Category 2	15	15	Root intrusion	Root intrusion caused 15 gallons of sewage to spill from Gravity sewer at 1332 Blossom Hill to Street/curb and gutter; Other (specify below);Landscape Area: No surface water body affected:
10/3/2011	319 Fifth Street Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer at 319 Fifth ST to Unpaved surface; Landscape Area: No surface water body affected:
10/7/2011	1414 Frances Drive Roseville, 95661	Category 2	30	30	Root intrusion	Root intrusion caused 30 gallons of sewage to spill from Gravity sewer at 1414 Frances Drive to Street/curb and gutter; Unpaved surface: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
10/8/2011	304 Walton Way Roseville, 95678	Category 2	20	20	Debris-Rags Wipes and Toilet Paper	Debris-Rags; Wipes and Toilet Paper caused 20 gallons of sewage to spill from Gravity sewer at 304 Walton Way to Street/curb and gutter: No surface water body affected:
10/11/2011	1718 Russell Way Roseville, 95661	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer at 1718 Russell Way to Unpaved surface; Landscape Area: No surface water body affected:
10/12/2011	1549 Misty Wood Drive Roseville, 95747	Category 2	10	10	Root intrusion	Root intrusion caused 10 gallons of sewage to spill from Gravity sewer at 1549 Misty Wood Drive to Street/curb and gutter: No surface water body affected:
11/28/2011	750 Atlantic Street Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer at 750 Atlantic St to Other paved surface: No surface water body affected:
12/2/2011	111 Valencia Avenue Roseville, 95678	Category 2	10	9	Root intrusion	Root intrusion caused 10 gallons of sewage to spill from Gravity sewer at 111 Valencia Ave to Unpaved surface; Landscape Area: No surface water body affected:
12/6/2011	600 Wemberly Drive Roseville, 95678	Category 2	20	20	Root intrusion	Root intrusion caused 20 gallons of sewage to spill from Gravity sewer at 600 Wemberly Drive to Other paved surface: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
12/10/2011	206 Irene Avenue Roseville, 95678	Category 2	2	2	Debris-Rags	Debris-Rags caused 2 gallons of sewage to spill from Gravity sewer at 206 Irene Avenue to Other paved surface; Contained in low area by driveway- Not spilling upon operator arrival: No surface water body affected:
12/16/2011	8980 Box Canyon Way Roseville, 95747	Category 2	10	10	Debris-Rags	Debris-Rags caused 10 gallons of sewage to spill from Gravity sewer at 8980 Box Canyon Way to Street/curb and gutter: No surface water body affected:
12/20/2011	1014 Coloma Way Roseville, 95661	Category 2	5	5	Other (specify below) Construction Debris	Other (specify below);Construction Debris caused 5 gallons of sewage to spill from Gravity sewer at 1014 Coloma Way to Unpaved surface; Other (specify below);Landscape Area: No surface water body affected:
12/29/2011	Joanne Lane Roseville, 95678	Category 2	480	480	Root intrusion	Root intrusion caused 480 gallons of sewage to spill from Manhole at SMH B05-240 to Other (specify below);Open Field and landscape area: No surface water body affected:
1/18/2012	219 Estates Drive Roseville, 95678	Category 2	10	10	Pipe structural problem/failure	Pipe structural problem/failure caused 10 gallons of sewage to spill from Gravity sewer at 219 Estates Drive to Street/curb and gutter: No surface water body affected:
1/25/2012	322 Berkeley Avenue Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer at 322 Berkeley Ave to Unpaved surface: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
1/25/2012	1162 Cirby Way Roseville, 95661	Category 2	45	45	Pipe structural problem/failure	Pipe structural problem/failure caused 45 gallons of sewage to spill from Gravity sewer at 1162 Cirby Way to Other paved surface: No surface water body affected:
12/23/2011	8025 Bauser Avenue Roseville, 95747	Category 2	15	15	Root intrusion	Root intrusion caused 15 gallons of sewage to spill from Gravity sewer at 8025 Bauser Ave to Unpaved surface; Landscape Area: No surface water body affected:
1/27/2012	1313 Champion Oaks Drive Roseville, 95661	Category 2	30	30	Root intrusion	Root intrusion caused 30 gallons of sewage to spill from Gravity sewer; City Cleanout at 1313 Champion Oaks Drive to Unpaved surface; Landscape: No surface water body affected:
2/9/2012	515 Encinal Avenue Roseville, 95747	Category 2	10	10	Root intrusion Roots and Offset	Root intrusion; Roots and Offset caused 10 gallons of sewage to spill from Gravity sewer; Sewer Cleanout at 515 Encinal Ave to Unpaved surface; Landscape: No surface water body affected:
2/15/2012	824 Elefa Street Roseville, 95678	Category 2	10	10	Pipe structural problem/failure	Pipe structural problem/failure caused 10 gallons of sewage to spill from Gravity sewer; Cleanout at 824 Elefa Street to Street/curb and gutter: No surface water body affected:
3/5/2012	1326 Chignahuapan Way Roseville, 95747	Category 2	1	1	Debris-General	Debris-General caused 1 gallons of sewage to spill from Gravity sewer; Cleanout at 1326 Chignahuapan Way to Unpaved surface; Contained in high grass area: Not spilling upon arrival: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
3/4/2012	406 Clinton Avenue Roseville, 95678	Category 2	15	15	Pipe structural problem/failure Broken pipe at mainline	Pipe structural problem/failure; Broken pipe at mainline caused 15 gallons of sewage to spill from Gravity sewer; Cleanout in alley at 406 Clinton Ave to Other paved surface; Spill was in paved alley, contained by dirt berm and low areas in the alley: No surface water body affected:
3/10/2012	417 Pleasant Street Roseville, 95678	Category 2	6	6	Pipe structural problem/failure	Pipe structural problem/failure caused 6 gallons of sewage to spill from Gravity sewer at 417 Pleasant Street to Unpaved surface; Contained in flower bed: Vacuumed all wet dirt from area: No surface water body affected: Spill was stopped upon arrival: Instructed resident to obstain from using until arrival
3/27/2012	335 Pleasant Street Alta Ave, 95678	Category 2	2	2	Root intrusion	Root intrusion caused 2 gallons of sewage to spill from Gravity sewer; Cleanout at 335 Pleasant Street to Unpaved surface; Spill was in lawn: Removed all standing water and debris from landscape: No surface water body affected:
4/9/2012	221 Ash Street Roseville, 95678	Category 2	14	13	Other (specify below) Mortar or pool plaster in mainline caused backup out of cleanout at 221 Ash St	Other (specify below);Mortar or pool plaster in mainline caused backup out of cleanout at 221 Ash St caused 14 gallons of sewage to spill from Gravity sewer; Cleanout at 221 Ash St at 221 Ash St to Unpaved surface; Contained in Lawn Area: No surface water body affected: Vactor main to remove mortar, cctv mainline to access cleaning effectiveness

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
4/11/2012	401 Vernon Street Roseville, 95678	Category 2	32	31	Root intrusion	Root intrusion caused 32 gallons of sewage to spill from Gravity sewer; City Cleanout at 401 Vernon St to Other paved surface; Unpaved surface; Spill was in parking lot and portion of overflow soaked into dirt landscape area: No surface water body affected: Service has been rehabilitated using CIPP liner
4/18/2012	2017 Katherine Place Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer; City Cleanout at 2017 Katherine Place to Street/curb and gutter; Spill contained in low area in gutter: Not spilling upon arrival: No surface water body affected: Work order created to CIPP line lateral
4/19/2012	936 Parry Street Roseville, 95678	Category 2	10	8	Root intrusion Was not spilling upon arrival	Root intrusion; Was not spilling upon arrival caused 10 gallons of sewage to spill from Gravity sewer; City Cleanout at 936 Parry Street to Unpaved surface; Lawn area: No surface water body affected:
5/1/2012	402 Main Street Roseville, 95678	Category 2	10	10	Debris-Rags Large rags in service that didn't dissolve	Debris-Rags; Large rags in service that didn't dissolve caused 10 gallons of sewage to spill from Gravity sewer; City Cleanout at 402 Main Street to Separate storm drain; Unpaved surface; Storm Drain DI was plugged full of dirt, and contained spill in inlet box: Line was not spilling upon arrival: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
5/30/2012	200 Atlantic Street Roseville, 95678	Category 2	15	15	Pipe structural problem/failure Pipe had separated causing blockage	Pipe structural problem/failure; Pipe had separated causing blockage caused 15 gallons of sewage to spill from Gravity sewer; City Cleanout at 200 Atlantic St to Other paved surface: No surface water body affected: Dig to repair lateral and restore service
6/7/2012	504 Church Street Roseville, 95678	Category 2	1	1	Debris-Rags Disposable wipes	Debris-Rags; Disposable wipes caused 1 gallons of sewage to spill from Gravity sewer; City Cleanout at 504 Church St to Other paved surface; Sidewalk and gutter: No surface water body affected:
6/15/2012	321 Elefa Street Roseville, 95678	Category 2	5	5	Vandalism Plastic window part was down cleanout and plugged lateral	Vandalism; Plastic window part was down cleanout and plugged lateral caused 5:0 gallons of sewage to spill from Gravity sewer; City Cleanout at 321 Elefa Street to Other paved surface; Unpaved surface; Spill was located in alley behind address: No surface water body affected:
7/8/2012	1104 Dartmouth Avenue Roseville, 95678	Category 2	5	5	Pipe structural problem/failure line has sag in it causing paper to build up	Pipe structural problem/failure; line has sag in it causing paper to build up caused 5 gallons of sewage to spill from Gravity sewer; Paper spilled from cleanout when homeowner removed cap from city cleanout at 1104 Dartmouth Ave to Other paved surface; Spill stayed on driveway and was not actively spilling upon arrival: No surface water body affected: Created work order to replace lateral

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
7/17/2012	300 Roseville Street Roseville, 95678	Category 2	50	50	Root intrusion Service was not spilling upon arrival and resident saw water standing in alley, after neighbor brought it to her attention:	Root intrusion; Service was not spilling upon arrival and resident saw water standing in alley, after neighbor brought it to her attention: caused 50 gallons of sewage to spill from Gravity sewer; City cleanout at 300 Roseville Street to Other paved surface; Spill was naturally contained in a low spot in the alley pavement: No surface water body affected:
7/19/2012	209 Birch Street Roseville, 95678	Category 2	10	10	Root intrusion Spoke with neighbor and resident and they stated they only saw the debris in the gutter, not the actual spill occur: No water was running upon arrival	Root intrusion; Spoke with neighbor and resident and they stated they only saw the debris in the gutter, not the actual spill occur: No water was running upon arrival caused 10 gallons of sewage to spill from Gravity sewer; City Cleanout had evidence of spill but was not spilling upon arrival at 209 Birch St to Street/curb and gutter; Low point in gutter held water from spill: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
7/20/2012	310 Oakridge Drive Roseville, 95661	Category 2	74	74	Debris-Rags Spill was caused by rags hanging up on roots in service:	Debris-Rags; Spill was caused by rags hanging up on roots in service: caused 74 gallons of sewage to spill from Gravity sewer; Cleanout was buried under landscape at 310 Oakridge Dr to Separate storm drain; Street/curb and gutter; Spill was in curb and gutter, and made it to storm drain DI 503' away from cleanout: Storm drain manhole was checked, and found completely dry: Vactored affected areas and vacuumed water out and returned to sewer system: No surface water body affected:
7/23/2012	175 Lincoln Street Roseville, 95678	Category 2	6	6	Root intrusion	Root intrusion caused 6 gallons of sewage to spill from Gravity sewer; Spill occurred from the city cleanout back of sidewalk: Neighbor noticed water coming from cleanout and notified resident at 175 South Lincoln St to Street/curb and gutter; Spill was contained in sunken area of gutter: No surface water body affected: Lateral has been scheduled for CIPP liner to rectify root intrusion
8/10/2012	1227 South Bluff Drive Roseville, 95678	Category 2	10	10	Root intrusion	Root intrusion caused 10 gallons of sewage to spill from Gravity sewer; Spill occurred from city cleanout, however, it wasn't spilling upon arrival: SSO occurred when eeling was started on the service: at 1227 South Bluff to Street/curb and gutter; Fully contained in gutter with dry sweep: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
8/1/2012	233 East Street Roseville, 95678	Category 2	53	53	Other (specify below) Debris-rags and roots caused the overflow	Other (specify below);Debris-rags and roots caused the overflow caused 53 gallons of sewage to spill from Gravity sewer; Spill point was from flushing branch on dead end line at 233 East Street to Street/curb and gutter; Spill was contained in gutter using rubber berm and dry sweep: All spilled water was vacuumed and area flushed: All water was captured and returned to sewer system: No surface water body affected: Section of main with root intrusion will be re-directed for better alignment: Flushing branch will be removed with a manhole installed in it's place: Upon completion, all pipe in section will be new pipe:
8/15/2012	98 Alta Vista Avenue Roseville, 95678	Category 2	75	70	Grease deposition (FOG)	Grease deposition (FOG) caused 75 gallons of sewage to spill from Gravity sewer; Manhole; Manhole and cleanout approx: 5' away from manhole at 98 Alta Vista AV to Separate storm drain; Unpaved surface; Other (specify below);Spill reached a DI that day lighted to a drainage channel along the railroad tracks: Spill was contained in this area, although we assumed approx 5 gallons seeped into dry dirt: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
8/30/2012	905 Main Street Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer; City Cleanout at 905 Main Street to Street/curb and gutter; Spill was contained in gutter with dry sweep: No surface water body affected: Follow up work order generated to CIPP line lower lateral
9/19/2012	159 Donner Avenue Roseville, 95678	Category 2	5	5	Root intrusion Root intrusion caused backup	Root intrusion; Root intrusion caused backup caused 5 gallons of sewage to spill from Gravity sewer; Cleanout was not spilling upon arrival at 159 Donner Ave to Street/curb and gutter: No surface water body affected: Work order generated to repair offset and damage caused by root intrusion
9/24/2012	615 Encinal Avenue Roseville, 95678	Category 2	5	5	Root intrusion Root intrusion and rags in the lower lateral	Root intrusion; Root intrusion and rags in the lower lateral caused 5 gallons of sewage to spill from Gravity sewer; Spilled from city cleanout at 615 Encinal Ave to Street/curb and gutter; Unpaved surface; Lateral was not spilling upon operator arrival, as resident had stopped all water use in the house: Spill was partially in a lawn area as well as the sidewalk, curb and gutter: No surface water body affected: Work order generated in CIPP line lateral

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
10/20/2012	995 Darling Way Roseville, 95678	Category 2	18	15	Root intrusion	Root intrusion caused 18 gallons of sewage to spill from Gravity sewer; City cleanout wasn't spilling upon arrival, but there was evidence of prior spill: Approx 3 gallons soaked into landscape area: Resident stated spill had only been going on for a few minutes: at 995 Darling Way to Unpaved surface; Other (specify below);Landscape/planter bed area: No surface water body affected:
11/1/2012	1100 Creekridge Court Roseville, 95747	Category 2	25	25	Root intrusion	Root intrusion caused 25 gallons of sewage to spill from Gravity sewer; Cleanout at 1100 Creekridge Ct to Street/curb and gutter; Spill was contained in gutter by leaves and debris, but was not actively spilling upon arrival: No surface water body affected:
11/3/2012	601 Encinal Avenue Roseville, 95678	Category 2	35	35	Root intrusion	Root intrusion caused 35 gallons of sewage to spill from Gravity sewer; Neighbor noticed a smell and traced odor back to this address, and then called dispatch service: Notified neighbor of water coming from city cleanout at 601 Encinal to Street/curb and gutter; Spill was contained in gutter by leaves and debris: Vacuumed all material out of gutter: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
11/5/2012	2208 Bud Court Roseville, 95661	Category 2	75	75	Root intrusion	Root intrusion caused 75 gallons of sewage to spill from Gravity sewer; Spill was from City cleanout, however, at phone call to homeowner, they indicated that all water had stopped, but her children had washed the driveway down with garden hose: at 2208 Bud Ct to Separate storm drain; Street/curb and gutter; Storm Drain DI is approx 450' from address, and minimal water had made it to the di: Di and gutter were flushed and all water vacuumed out: Spill volume was estimated by L x W x Depth of water, plus minimal volume in basin of DI: No surface water body affected:
12/2/2012	Eastridge Drive Roseville, 95661	Category 1	100	0	Rainfall exceeded design (Separate CS Only) Collection System was inundated by storm surge	Rainfall exceeded design (Separate CS Only);Collection System was inundated by storm surge caused 100:0 gallons of sewage to spill from Manhole; Spill was slowing seeping from the gap between the manhole frame and the manhole cover: The manhole was bolted down, slowing the release of water: at Eastridge Drive -East of Bridge to Surface water: Surface water body affected: Visually inspected the collection system and verified surcharge conditions were receding:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
12/2/2012	Eastridge Drive Roseville, 95661	Category 1	300	0	Rainfall exceeded design (Separate CS Only) Collection system was inundated by storm surge	Rainfall exceeded design (Separate CS Only);Collection system was inundated by storm surge caused 300:0 gallons of sewage to spill from Manhole; Spill was seeping from the gap between the frame and the cover: The manhole was also bolted down: at Eastridge Drive- West of Bridge to Surface water: Surface water body affected: Visually inspected collection system and verified surcharge conditions were receding
11/24/2012	1941 Inglis Way Roseville, 95678	Category 2	3	3	Root intrusion	Root intrusion caused 3 gallons of sewage to spill from Gravity sewer; City Cleanout- No visible water, but toilet paper was standing around cleanout at 1941 Inglis Way to Unpaved surface; Landscaped Area: No surface water body affected:
11/28/2012	1955 Inglis Way Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer; City cleanout at 1955 Inglis Way to Street/curb and gutter; Other (specify below);Landscape Area: No surface water body affected:
11/26/2012	1501 Colonial Parkway Roseville, 95661	Category 2	10	10	Root intrusion	Root intrusion caused 10 gallons of sewage to spill from Gravity sewer; City cleanout at 1501 East Colonial to Street/curb and gutter: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
12/14/2012	120 Fig Street Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer; City Cleanout at 120 Fig Street to Other paved surface; Sidewalk: No surface water body affected:
12/31/2012	301 Loretto Drive Roseville, 95661	Category 2	15	15	Other (specify below) Private plumber lost screw plug down line and was wedged in lower lateral, causing spill	Other (specify below);Private plumber lost screw plug down line and was wedged in lower lateral, causing spill caused 15 gallons of sewage to spill from Gravity sewer; City cleanout at 301 Loretto Drive to Street/curb and gutter; Used dry sweep to contain water in gutter: No surface water body affected:
12/31/2012	138 Cedar Street Roseville, 95678	Category 2	10	10	Root intrusion	Root intrusion caused 10 gallons of sewage to spill from Gravity sewer at 138 Cedar St to Street/curb and gutter; Used dry sweep to contain spill in gutter: All areas were flushed and vacuumed: No surface water body affected:
1/14/2013	376 Circuit Drive Roseville, 95678	Category 2	20	20	Root intrusion	Root intrusion caused 20 gallons of sewage to spill from Gravity sewer at 376 Circuit Drive to Other paved surface; Street/curb and gutter; Sidewalk: No surface water body affected: Added to lateral maintenance group project, 4 month interval
1/17/2013	1080 Douglas Boulevard Roseville, 95678	Category 2	10	10	Root intrusion	Root intrusion caused 10 gallons of sewage to spill from Gravity sewer at 1080 Douglas Blvd to Street/curb and gutter: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
1/18/2013	108 Ben Ezra Avenue Roseville, 95678	Category 2	10	10	Pipe structural problem/failure Pipe had failed due to significant roots crushing pipe	Pipe structural problem/failure; Pipe had failed due to significant roots crushing pipe caused 10 gallons of sewage to spill from Gravity sewer at 108 Ben Ezra Avenue to Other paved surface; Street/curb and gutter: No surface water body affected: Lateral was repaired at point of pipe failure, and work order generated to CIPP line entire service:
1/21/2013	2318 Cirby Way Roseville, 95661	Category 2	6	6	Root intrusion	Root intrusion caused 6 gallons of sewage to spill from Gravity sewer at 2318 N Cirby Way to Street/curb and gutter; Unpaved surface; Landscape area: No surface water body affected: Work order created and scheduled to CIPP line lateral
1/28/2013	1741 Evergreen Drive Roseville, 95747	Category 2	10	10	Root intrusion Root intrusion is coming from backside of cleanout wye: Notified homeowner that he would need to maintain or repair the break in their line	Root intrusion; Root intrusion is coming from backside of cleanout wye: Notified homeowner that he would need to maintain or repair the break in their line caused 10 gallons of sewage to spill from Gravity sewer; City cleanout at 1741 Evergreen Drive to Street/curb and gutter: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
2/12/2013	1332 Blossom Hill Way Roseville, 95661	Category 2	3	3	Pipe structural problem/failure Lateral had been CIPP lined within the last few weeks, and resin did not setup, causing the liner to collapse enough to hold back paper products	Pipe structural problem/failure; Lateral had been CIPP lined within the last few weeks, and resin did not setup, causing the liner to collapse enough to hold back paper products caused 3 gallons of sewage to spill from Gravity sewer; City cleanout at 1332 Blossom Hill to Other paved surface; Street/curb and gutter; Sidewalk and landscape area: No surface water body affected: Bad spot of liner has been cut out and repaired
2/16/2013	497 Diamond Bar Lane Roseville, 95678	Category 2	5	5	Pipe structural problem/failure House is on the top end of a dead end run: Lateral ties into main with a tee rather than a wye: Resident has also replaced all toilet fixtures with low flow units: All of this together equates to a problem with moving paper and waste through the lateral: Work order created to replace tee with wye to aid better flow angle:	Pipe structural problem/failure; House is on the top end of a dead end run: Lateral ties into main with a tee rather than a wye: Resident has also replaced all toilet fixtures with low flow units: All of this together equates to a problem with moving paper and waste through the lateral: Work order created to replace tee with wye to aid better flow angle: caused 5 gallons of sewage to spill from Gravity sewer; City cleanout at 497 Diamond Bar Ln to Street/curb and gutter: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
3/11/2013	120 Silverado Circle Roseville, 95678	Category 2	2	2	Other (specify below) Cleanout was holding water, but not spilling: As technician began to clear blockage, the cleanout started to spill: Cleared line and water subsided:	Other (specify below);Cleanout was holding water, but not spilling: As technician began to clear blockage, the cleanout started to spill: Cleared line and water subsided: caused 2 gallons of sewage to spill from Gravity sewer; City Cleanout at 120 Silverado Circle to Street/curb and gutter; Other (specify below);Landscape Area: No surface water body affected: Failure analysis showed root coming in from backside of wye, and traveling through coupling: Wye was dug up and replaced, large roots were removed from customer side of lateral: Lateral is also very flat
3/15/2013	237 La Rue Alley Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer; Cleanout- Resident was informed to stop all water use, and was not spilling upon arrival: at 237 LaRue Alley to Other (specify below);Landscape Area: No surface water body affected: Work order generated to CIPP line the lateral
3/23/2013	1505 Antrim Court Roseville, 95747	Category 2	8	8	Root intrusion	Root intrusion caused 8 gallons of sewage to spill from Gravity sewer; Resident was requested to stop all water use, and lateral was not spilling upon arrival at 1505 Antrim Ct to Street/curb and gutter; Other (specify below);Grass Area: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
3/23/2013	211 Kenroy Lane Roseville, 95678	Category 2	10	10	Root intrusion	Root intrusion caused 10 gallons of sewage to spill from Gravity sewer at 211 Kenroy Lane to Street/curb and gutter: No surface water body affected: Created work order to repair cleanout
4/2/2013	1415 frances Drive Roseville, 95661	Category 2	25	25	Root intrusion	Root intrusion caused 25 gallons of sewage to spill from Gravity sewer; City cleanout at 1415 Frances Drive to Street/curb and gutter; No water was spilling upon arrival: Overflow was contained by debris and a large offset in gutter: No surface water body affected: Work order generated to CIPP line lateral
4/9/2013	215 Coronado Avenue Roseville, 95678	Category 2	47	47	Root intrusion	Root intrusion caused 47 gallons of sewage to spill from Gravity sewer at 215 Coronado Ave to Other paved surface; Spill was contained with dry sweep and dirt berm: No surface water body affected:
4/14/2013	1307 Sheffield Way Roseville, 95661	Category 2	3	3	Root intrusion	Root intrusion caused 3 gallons of sewage to spill from Gravity sewer; Sewer cleanout in front lawn at 1307 Sheffield Way to Unpaved surface; Landscape lawn area: No surface water body affected:
4/18/2013	1015 Sunset Drive Roseville, 95678	Category 2	2	2	Root intrusion	Root intrusion caused 2 gallons of sewage to spill from Gravity sewer; City cleanout in landscape area: Not spilling upon arrival at 1015 Sunset Dr to Unpaved surface; Landscape: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
4/30/2013	2218 Americana Drive Roseville, 95747	Category 2	5	0	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer; City Cleanout at 2218 Americana Drive to Street/curb and gutter; Area was dry, but there was evidence of debris on sidewalk and gutter in front of address: No surface water body affected:
4/30/2013	512 Royer Street Roseville, 95678	Category 2	10	10	Root intrusion	Root intrusion caused 10 gallons of sewage to spill from Gravity sewer; City cleanout at 512 Royer St to Unpaved surface: No surface water body affected: Created work order to repair damaged pipe caused by root intrusion:
5/10/2013	330 Circuit Drive Roseville, 95678	Category 2	20	20	Root intrusion City cleanout started spilling after resident had a plumber clear their portion of the line: The large mass of roots stayed in the lower lateral, caused it to back up and spill	Root intrusion; City cleanout started spilling after resident had a plumber clear their portion of the line: The large mass of roots stayed in the lower lateral, caused it to back up and spill caused 20 gallons of sewage to spill from Gravity sewer; City cleanout had evidence of spill: at 330 Circuit Drive to Street/curb and gutter; Spill was contained in gutter by leaves and dirt: No surface water body affected:
6/20/2013	1795 Vista Creek Drive Roseville, 95661	Category 2	5	5	Debris-Rags	Debris-Rags caused 5 gallons of sewage to spill from Gravity sewer; City Cleanout at 1795 Vista Creek Dr to Street/curb and gutter: No surface water body affected:

Date Of SSO	Address Of SSO	Spill Type	Spill Volume (gal)	Spill Volume Recovered (gal)	Spill Cause	Overall Description
7/14/2013	618 Lassen Way Roseville, 95678	Category 2	5	5	Root intrusion	Root intrusion caused 5 gallons of sewage to spill from Gravity sewer; City cleanout: Customer said it was not spilling, and no one was home at 618 Lassen Way to Street/curb and gutter: No surface water body affected:

7.2 Appendix – Performance Indicators

SSS WDR Element	SSS WDR Ref.	Description	Performance Indicator	Unit	Target	City SSMP (section)	Utility Metrics (SSMP Appendix I)	WW Collections KPI.doc	Program / Performance Report FY12/13	Strategic Plan Data FY12/13.xls	Performance Metrics.xls	Suggested Audit Frequency	Suggested Responsible Party
Organization	D.ii.c	Chain of communication	Average response time to customer inquiry	Minutes	40		Data	40	-	-	-	Quarterly	Office Assistant
			Total customer service requests	Number	0	(9.6)	Data	-	-	-	-	Quarterly	Office Assistant
			Total sewer odor complaints	Number	0	(9.6)	Data	-	-	-	-	Quarterly	Office Assistant
			Average rating in feeback survey card	Number	5	-	Data	-	-	-	-	Quarterly	Office Assistant
O&M	D.iv.a	Maps	Average response time to map update requests	Days	30	-	-	-	-	-	-	Quarterly	GIS Manager
	D.iv.b	PM activites	Manholes - cleaned & visually inspected per year	Number	1054	(9.4)	-	-	1054	-	-	Quarterly	WWC Supervisor
			Sewer main - flushed per year	Miles	250	(9.4)	Data	250	250	250	-	Quarterly	WWC Supervisor
			Service laterals - cleaned per year	Miles	8	-	-	-	8	-	-	Quarterly	WWC Supervisor
			Service laterals - mechancially cleaned (eeled) per year	Miles	8	(9.4)	-	-	-	8	-	Quarterly	WWC Supervisor
			Working staff time to PM program	%	80	-	-	-	80	-	-	Quarterly	WW Superindendent
			Number of customer accounts per wastewater employee	Number	561	(9.4)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of work orders completed as emergency	%	0.4	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Average cost of hydro cleaning	$/ lf	0.36	-	Data	-	-	-	-	Annually	WW Superindendent
			Average cost of sewer mechanical cleaning	$/lf	1.6	(9.4)	Data	-	-	-	-	Annually	WW Superindendent
	D.iv.c	R&R plan	Manholes - rehabilitated (i.e., lined with CIPP)	Number	25	-	-	-	25	-	-	Annually	Rehabiliation Manger
			Sewer main - CCTV inspected per year	Miles	30	(9.4)	Data	30	30	30	-	Quarterly	WWC Supervisor
			Service laterals - CCTV inspected per year	Miles	16	-	Data	-	8	16	-	Quarterly	WWC Supervisor
			Service laterals - rehabilitated per year	Number	50	(9.4)	-	50	50	50	-	Quarterly	WW Superindendent
			Cleanouts - installed per year	Number	100	-	-	100	100	75	-	Quarterly	WWC Supervisor
			Total miles rehabed or replaced per year (main)	Miles	5	(9.6)	Data	-	-	-	-	Annually	Rehabiliation Manger
			Total miles rehabed or replaced per year (lateral)	Miles	0.25	(9.6)	Data	-	-	-	-	Annually	Rehabiliation Manger
			Annual capital budget for sewer rehab/replacement	$M	1.8	-	Data	-	-	-	-	Annually	Rehabiliation Manger
			Average cost of CCTV (main)	$/lf	0.53	(9.4)	Data	-	-	-	-	Annually	WW Superindendent
			Average cost of CCTV (lateral)	$/lf	1.34	-	Data	-	-	-	-	Annually	WW Superindendent
	D.iv.d	Training	On-the-Job accidents	Number	0	-	-	-	0	0	-	Quarterly	Safety Manager
	D.iv.e	Critical Parts	% of required number of identified critical parts are stocked	%	100	-	-	-	-	-	-	Annually	Materials Technician
Design	D.v.a & b	Construction	% of new sewer main construction accepted vs. inspected	%	100	(9.6)	Data	-	-	-	-	Annually	GIS Manager
			% of new sewer lateral construction accepted vs. inspected	%	100	(9.6)	Data	-	-	-	-	Annually	GIS Manager
OERP	D.vi.a	Notification	Average response time to SSO	Minutes	40	-	Data	-	-	-	-	Quarterly	WWC Supervisor
	D.vi.b	SSO response	Average SSO duration (main)	Minutes	40	-	-	-	-	-	-	Quarterly	WWC Supervisor
			Average SSO duration (lateral)	Minutes	40	-	-	-	-	-	-	Quarterly	WWC Supervisor
FOG	D.vii.a	Public education	FOG public education outreach program events per year	Number	4	-	-	-	-	-	-	Annually	Administrative Analyst
	D.vii.b	FOG disposal	Number of curbside FOG pickups per year	Number	25	-	-	-	-	-	-	Annually	Refuse Division
			% of CCTV inspections with grease observations (DAGS, >20%)	%	5	-	-	-	-	-	-	Quarterly	WWC Supervisor
	D.vii.d	BMPs & Devices	% of total FSEs with grease removal devices or waiver/variance	%	100	-	-	-	-	-	-	Annually	IWS Inspector
			% of total FSEs with a variance	%	5	-	-	-	-	-	-	Annually	IWS Inspector
	D.vii.e	FOG inspections	FSE FOG inspections per year	Number	294	-	-	-	-	-	-	Quarterly	IWS Inspector
			Coordination meetings between WWC and IWS per year	Number	4	-	-	-	-	-	-	Quarterly	IWS Inspector
	D.vii.f	Hot Spots	% of hot spot pipes CCTV inspected each year	%	100	-	-	-	-	-	-	Annually	WW Superindendent
			Number of spills caused by hot spots	Number	0	-	-	-	-	-	-	Quarterly	WW Superindendent
			Volume of spill volume caused hot spots	Gal	0	-	-	-	-	-	-	Quarterly	WW Superindendent
SECAP	D.viii.a	Evaluation	Frequency for capacity assurance evaluation (hydraulic model)	Years	5	App I	-	-	-	-	-	Annually	EU Engineering
MMM	D.ix.e	SSO trends	Total number of SSOs, mains and laterals	Number	76	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Total SSO volume, mains and laterals	Gal	2000	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of total SSO volume recovered	%	100	-	Data	-	-	-	-	Quarterly	WW Superindendent
			Total number of wet weather SSOs	Number	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Total volume of wet weather SSOs	Gal	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSOs caused by FOG (main)	%	1	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSOs caused by roots (main)	%	70	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSOs caused by Vandalism (main)	%	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Number of SSOs caused by LS failures	Number	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Number of SSOs caused by pipe failures	Number	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSO volume caused by FOG (lateral)	%	10	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSO volume caused by roots (lateral)	%	75	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSO volume caused by Vandalism (lateral)	%	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Repeat SSOs within two years	Number	0	(9.6)	Data	0	-	-	-	Quarterly	WW Superindendent
			Category 1 SSOs	Number	0	-	-	0	0	-	-	Quarterly	WW Superindendent
			SSOs / 100 mi pipe / year - Category 2	Number	2.0	-	-	2.0	-	-	-	Quarterly	WW Superindendent
			SSOs / 100 mi pipe / year - Lateral	Number	15.0	-	-	8.0	-	-	8	Quarterly	WW Superindendent
			SSOs / 100 mi pipe / year - Mainline	Number	0.6	-	-	0.6	-	-	0.6	Quarterly	WW Superindendent
			Flooding claims per year	Number	0	(9.6)	Data	-	-	-	-	Annually	WW Superindendent
			Total cost of claims per year	$	0	(9.6)	Data	-	-	-	-	Annually	WW Superindendent

Legend

Green Text Indicates the goal for the respective performance measure as stated in the associated document.

"Data" Indicates that is recorded and tracked but no goal is defined in the associated document.

7.3 Appendix – Sample Performance Indicator Assessment Form

Goal:	**MRP (FY 2014 / 2015)**
Responsible Person (RP):	WWC Superintendent

Description of Performance Indicator(s) (PIs):

The State Water Board has recently concluded that the existing Monitoring and Reporting Program must be amended to remain adequate enough to advance the Sanitary Sewer Overflow Reduction Program objectives, assess compliance, and enforce the requirements of the Sanitary Sewer Systems Waste Discharge Requirements. The amended MRP will become effective on September 9, 2013 concurrent with the routine bimonthly CIWQS maintenance release. The Wastewater Collection Division is responsible for submitting, signing, and certifying all reports required by the SSS WDRs and the amended MRP order. The PIs listed below track the completion of tasks necessary for the City to remain compliant with the SSS WDRs.

PIs and Data Analysis Methods:

1. *Completion of unpopulated fields in revised "Collection System Questionnaire"*
   Discussion & Scoring Criteria: The City has three (3) months after September 9, 2013 to complete all unpopulated fields in the revised "Collection System Questionnaire" before the CIWQS locks you out from all reporting. After the questionnaire is completed, the system will default back to the annual update requirement and lock you out from all reporting only if the questionnaire is not updated at least annually.

2. *Update of OERP section in SSMP*
   Discussion & Scoring Criteria: The Overflow and Emergency Response Plan section of the City's SSMP must be updated in accordance with the amended MRP by January 21 2014, when a board review of the SSMP will take place.

PI	A+	A	A-	B+	B	B-	C+	C	C-	D	F
1	All unpopulated fields completed by December 9, 2013.			N/A			N/A			All or some of the unpopulated fields not completed by December 9, 2013.	
2	OERP section fully updated in SSMP before review.			N/A			N/A			OERP section never, or only partially, updated before review.	

Performance Tracking		
PI	**Measured Value**	**Performance Assessment Comments**
1		
2		

Recommendations for Programmatic or SSMP Updates
PI 1 – Completion of unpopulated fields in revised "Collection System Questionnaire" Recommendation: **PI 2 – Update of OERP section in SSMP** Recommendation:

Signature of Responsible Person: (sign when complete)	Date:

Appendix 10-3

SSPM Audit Fiscal Years 13/14 and 14/15

CITY OF ROSEVILLE
Sewer System Management Plan (SSMP)
Biennial Audit for FY 13/14 – FY 14/15

Date: June 2016

Prepared by: Michael Fisher, P.E., Water Works Engineers
Tim Lewis, E.I.T., Water Works Engineers

Assisted by: Chris Bracco, City Wastewater Superintendent
Dan Pruden, City Wastewater Supervisor

Table of Contents

SECTION 1 Audit Objectives 3
SECTION 2 Agency Background / System Information 4
2.1 Review of Last SSMP Audit 5
2.2 Review of FY13/14 and FY14/15 11
SECTION 3 SSO Trends 11
3.1 Historical SSO Data 11
3.2 Performance Measures 14
SECTION 4 Audit Procedure 15
4.1 Review of SSMP Compliance 15
4.2 Review of SSMP Effectiveness 15
SECTION 5 Audit of SSMP Elements 17
5.1 Goals 17
5.2 Organization 17
5.3 Legal Authority 19
5.4 Operation and Maintenance Program 21
5.5 Design and Performance Provisions 24
5.6 Overflow Emergency Response Plan 25
5.7 FOG Control Program 28
5.8 System Evaluation and Capacity Assurance Plan 31
5.9 Monitoring, Measurement, and Program Modifications 32
5.10 SSMP Program Audits 35
5.11 Communication Program 37
SECTION 6 Audit Summary 38
SECTION 7 Appendices 44
7.1 Appendix – Historical SSO Data 45
7.2 Appendix – Performance Indicators 46
7.3 Appendix – Sample Performance Indicator Assessment Form 47

List of Tables

Table 1. Overview of System Indicators 4
Table 2. Summary of Findings from the Last SSMP Internal Audit 5
Table 3: CIWQS and City SSO Historic Data 11
Table 4: Regional Comparison of SSO Data 13
Table 5. Leading Causes of SSOs in FY13-15 (results from FY11-13 in parenthesis) 14
Table 6: Performance Measures 15
Table 7. Compliance with SSS WDR D.13.i - Goals 17
Table 8. Compliance with SSS WDR D.13.ii - Organization 17
Table 9. Compliance with SSS WDR D.13.iii – Legal Authority 19
Table 10. Compliance with SSS WDR D.13.iv – O&M Program 21
Table 11. Performance Measures related to SSS WDR D.13.iv(b) 22
Table 12. Performance Measures related to SSS WDR D.13.iv(c) 23
Table 13. Compliance with SSS WDR D.13.v – Design and Performance Provisions 24
Table 14. Compliance with SSS WDR D.13.vi - OERP 25
Table 15. Compliance with SSS WDR D.13.vii – FOG Control Program 28
Table 16. Compliance with SSS WDR D.13.viii - SECAP 31
Table 17. Compliance with SSS WDR D.13.ix – MMM 32
Table 18. Current Performance Measures to Monitor SSO Trends 35
Table 19. Compliance with SSS WDR D.13.x – SSMP Program Audits 35
Table 20. Compliance with SSS WDR D.13.xi – Communications Program 37
Table 21. Summary of SSMP Compliance Deficiencies 38
Table 22. Summary of Audit Recommendations 39

List of Figures

Figure 1: Number of SSOs per Fiscal Year 12
Figure 2: Average Gallons per SSO 13

SECTION 1 Audit Objectives

This report covers the results of the required Sewer System Management Plan (SSMP) internal audit process for the City of Roseville (City) for fiscal years 2013-2014 (FY13/14), and 2015-2015 (FY14/15). The purpose of the SSMP is to provide a written framework and process for sanitary sewer collection system (collection system) management, operation, and maintenance programs executed by the City with the ultimate goal of minimizing sanitary sewer overflows (SSOs) and sustaining compliance with the California State Water Resources Control Board (SWRCB) order No. 2006-0003-DWQ, the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR). The basis for the SSMP internal audit process is reviewing the performance of the collection system versus the performance measures used by the City to evaluate compliance with the various requirements of the SSS WDRs. The intention of the SSMP audit is to help the SSMP evolve over time as a "living document" that City continually adjusts after identifying potential enhancements and implementing changes to address any deficiencies to the management, operation and maintenance of the City sanitary sewer collection system.

The City is committed to completing the SSMP internal audit (Audit) on a biennial basis that is consistent with the procedure outlined in Appendix J-1 of the SSMP. The City completed its first Audit for FY 2011-2012, but subsequently contracted Water Works Engineers (WaterWorks) to conduct the FY 11/12-13/14 biennial audit. Similarly, the City contracted WaterWorks to complete the FY 13/14-14/15 biennial audit, the results of which are detailed in this document. The key objective of the Audit is to review SSMP compliance, implementation, and effectiveness. The key tasks performed in this Audit are detailed below:

1. Review records from previous internal audits, and confirm deficiencies have been addressed (See SECTION 2)
2. Analyze the City's historical SSO data and performance measures listed in the SSMP (See SECTION 3)
3. Using a standardized audit procedure detailed in SECTION 4 , identify deficiencies and provide recommendations that could improve the effectiveness of the SSMP (See SECTION 4).
4. Analyze the City's preventative maintenance (PM) program and rehabilitation and replacement (R&R) program as it relates to the operation and maintenance of the collection system (See Section 5.4)
5. Review the Sanitary Sewer Overflow Emergency Response Plan (SSEORP) for SSOs and identify improvements as needed (See Section 5.6)
6. Document all findings during the Audit and retain it on file (See SECTION 6)

SECTION 2 Agency Background / System Information

The City of Roseville is located in Placer County and is situated approximately 16 miles north of the City of Sacramento. Along Interstate 80, Roseville is located adjacent to the City of Rocklin in the north-east and the City of Citrus Heights in the south. The City covers approximately 42 square miles near the base of the foothills of the Sierra Mountains. Typical elevations are within a range of 250 to 100 feet of sea level with an average slope across the City of 0.5% from east to west. Several streams flow through the City (i.e., Dry Creek, Pleasant Grove Creek, Kaseburg Creek, Linda Creek, Cirby Creek, Secret Ravine, and Miners Ravine.).

The City is responsible for the operation and maintenance of a continually growing collection system that has grown over 5% since the last internal audit to now serve approximately 129,000 people. Table 1 below highlights key indicators about the City collection system.

Table 1. Overview of System Indicators

Audit	FY 11/12 – 12/13	FY 13/14 – 14/15
Miles of Mainline	485.52	501.11
Miles of laterals (lower)	235.3	238
Pump stations	14	15
Sewer service lateral connections	41,568	43,619
Population served	122,060	128,832
WWC Staff	25	28
Annual Budget (FY1 – FY2)	$3,400,000 / $3,800,00	$3,700,000 / $4,000,000
Category 1 SSOs	2	0
Category 2 SSOs	75	0
Category 3 SSOs	-	89

The City treats wastewater conveyed through its collection system at two regional wastewater treatment plants that are both owned and operated by the City (i.e., Dry Creek and Pleasant Grove WWTPs). Two other satellite collection systems owned and operated by other agencies (i.e., South Placer Municipal Utility District and Placer County) discharge directly into the City's collection system as well. One small portion of the City's collection system, however, discharge outside of Roseville into the Sacramento Area Sewer District (SASD) collection system and is treated at the Sacramento Regional WWTP. The City is a part of the Central Valley Region 5 (Sacramento sub-region) of the SWRCB.

2.1 Review of Last SSMP Audit

The previous biennial SSMP audit for Roseville was conducted by WaterWorks for FY 11/12-12/13 and was completed in December 2013. In the last Audit, a list of approximately 40 recommended actions to address deficiencies or improve the effectiveness of the City SSMP were listed. That list is re-inserted and adapted in Table 2 below, along with a description of the status of the task (i.e., Completed, Ongoing Updates, In/No Progress, Considered) per the latest SSMP documents on the City's website and based on information from City staff.

Table 2. Summary of Findings from the Last SSMP Internal Audit

Element	Action Item	Status
2 – Organization	Appendix B-1 needs to be updated to show Ken Glotzbach and Chris Bracco as LROs for the City. Additionally, once Dan Pruden (Wastewater Collections Supervisor) is registered as a Data Submitter in CIWQS, his information should be added to Appendix B-1 and updated on the City website.	Completed.
	Figure 2.2 in SSMP section 2.3 has typographical errors. There is text missing. The figure found in SSMP Appendix F-1 (1) - SSO Procedures Flowchart is the same chart, but includes all of the text. WWE recommends reinserting the figure from Appendix F-1 (1) into section 2.3 of the SSMP with the corrections made.	Completed
	Appendix B-3 includes a call list of staff members who are on call during non-business hours; this is out of date, but also unnecessary. WWE recommends the City develop a SOP for the call center procedures for receiving calls and mobilizing field staff. A call list may be kept internally as deemed necessary by the City.	Considered.
4 – O&M	Include the Mapping Update Policy document on the City SSMP website	No Progress
	Identify targets for all performance measures so that data collected can be compared to a goal to assess performance and the effectiveness of SSMP activities. A comprehensive review of benchmarks or performance measures/indicators is discussed in the recommendations of **Section 5.9.**	No Progress.
	Continue the efforts of the recently revised eeling program due to the immediate impact on the frequency of SSOs from laterals. Data on the number of lateral SSOs per month should be monitored so that the impact of these efforts can be evaluated at the time of the next internal SSMP audit.	Considered.
	Develop SOPs for the regular preventative maintenance activities using SOP-WWC-01 as a template. The following is a list of suggested SOPs based on the	Considered

	activities currently tracked with performance measures: ▪ Lift station maintenance ▪ Receiving and responding to customer service request	
	Develop SOPs for regular inspection activities using SOP-WWC-01 as a template. The following is a list of suggested SOPs based on the activities currently tracked with performance measures: -Alarm testing of lift stations	Considered
	Document the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data.	No Progress
	The SSMP internal audit from FY10/11 stated that NASSCO training for condition assessment should be added to SSMP Element 4.5. The City implements the NASSCO rating system for collecting condition assessment data and provides this training to the WWC staff. While this is not a requirement of the SSS WDR, the City needs to decide if this training will be referenced in SSMP Element 4.5.	Considered.
	Use the SOPs recommended to be developed in this section as a training tool for WWC staff. The SOPs can also be used to inform contractors working in the system of the role they play in responding to and mitigating potential SSOs.	Considered.
	The SSMP identifies the WWC Superintendent as the person responsible for maintaining lists of the equipment and critical spare parts. The position directly responsible for tracking equipment and maintaining up-to-date equipment and critical spare parts lists is Materials Technician. The SSMP should be updated to correctly reflect the responsible party for equipment and critical spare parts.	Completed.
6 – OERP	Complete all unpopulated fields in the revised "Collection System Questionnaire" in CIWQS. Enrollees have six months from the date that the revised MRP became effective to complete the questionnaire. This means that the questionnaire must be completed by approximately March 9, 2014. If this questionnaire is not completed by that time, the system will lock the Enrollee out from all reporting capabilities.	Completed

	Figure 6.2 in SSMP section 6.3 has a typographical error. There is text missing in some of the decision boxes. The same figure is in SSMP Appendix F-1(1) without the missing text. WWE recommends reinserting the figure with the corrections made or removing the figure from the SSMP and only reference Appendix F-1(1).	Completed.
	Section 2.I.A of the City SSO Response Procedures indicates that the time a call was received notifying the City of a SSO will be used as the SSO start time on the forms reported to CIWQS. WWE recommends that the City develop a SOP for estimating the start time of SSOs to include additional methods for examining possible start times to support the SSO start time entered into CIWQS.	Considered.
	The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station.	In Progress.
7 – FOG Control Program	List Sean Bigley as the responsible party for the FOG Public Education Plan.	Ongoing updates.
	Schedule routine meetings between WWC and IWS to share findings from preventative maintenance activities and FSE inspections to identify FSEs who are negatively impacting the collection system by discharging excessive amounts of FOG.	Considered.
	Develop a SOP describing the process of how pipelines are added to the hot spot cleaning schedule, how the cleaning frequency (i.e., quarterly, semiannually, annually) for each hot spot is initially set, and how the cleaning frequency for an individual hot spot may be adjusted over time.	In Progress
	SSMP section 7.8, paragraph three contains a typographical error. It states that "sewer line maintenance work orders are issued and completed to ensure that hot spot lines **do** have grease blockages/SSOs between cleaning schedules".	Completed

	The word "do" should be changed to "do not".	
8 – SECAP	Reevaluate the capacity of the system so that changes to the system can be updated and recent flow monitoring results can be used to update findings to reflect current conditions and revisions to planned development. The City should consider revising the planned frequency for system evaluation updates if a frequency of five years is not warranted based on system needs.	In Progress
	Add documentation to internal SSO reports showing that the amount of precipitation over a 24-hour period exceeded 2.82 inches if the cause of the SSO is identified as "rainfall exceeded design". The lower bound of the 10-year 24-hour precipitation frequency estimate with a 90% confidence interval from the NOAA Atlas 14, Volume 6, Version 2 data for the Rocklin (station ID 04-7516) is 2.82 inches.	Considered
9 – MMM	Update Appendix I-Benchmarking Metrics on City website with information from FY11/12 and FY12/13	Completed.
	Update Appendix I. This appendix includes information from the initial 2007 Implementation Schedule. The initial SSMP implementation and the SWRCB compliance schedule concluded many years ago and does not need to be included in the SSMP. However, the information regarding the continual implementation of the SSMP such as the document location, responsible person, and review frequency should be included	No Progress
	Identify the metrics that correspond with specific elements of the SSMP and develop numerical goal ranges so the data currently collected and monitored by the City can be used as performance indicators (PIs) to quantitatively monitor SSMP effectiveness.	Considered
	Consider tracking additional metrics targeted at measuring the effectiveness of SSMP elements that do not currently have metrics associated with them. A list of potential performance measures listed by SSMP element is included in **Appendix 7.2** of this internal audit.	Considered

	Using the data collected in SSMP Appendix I as a reference, develop goals for metrics that track preventative maintenance activities and identify the person/position responsible for tracking data against those goals. See **Appendix 7.2** for a list of potential performance indicators for preventative maintenance activities with responsible parties.	Considered
	Assign the individuals responsible for the various elements of the SSMP to complete the Performance Indicator Assessment Forms that are developed for their SSMP elements. See **Appendix 7.2** for a list of potential performance indicators with the assigned responsible parties.	Considered
	Using the data collected in SSMP Appendix I as a reference, set performance goals for the metrics used to illustrate SSO trends. See **Appendix 7.2** for a list of potential performance indicators related to SSO trends.	Considered
10 – SSMP Program Audits	Post this SSMP internal audit to the City website.	No Progress
	Schedule the next internal SSMP audit for July - August 2015.	Considered
	The SSMP must be recertified by the City Council before January 21, 2014. Per SSS WDR D.14, the City must have the SSMP updated and re-certified by the governing board (i.e., City Council) every five years. The City Council approved the original SSMP on January 21, 2009 which sets the date for re-certification on January 21, 2014.	Completed
	Revise Appendix J-1 to reflect recommendations for review of performance indicators (i.e., metrics associated with specific SSMP elements and the associated timelines).	No progress.

	Revise Appendix J-2 (Audit Form) to provide areas in the tables for each SSMP element to conduct an assessment of both 1) the compliance against SSMP requirements and 2) the effectiveness of the SSMP element. Information gathered on the recommended Performance Indicator Assessment Forms should be included in the "Support Documents and Data" section of the Audit Form.	No progress.
	Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes.	In progress.
11 - Communication	As of September 2013 the State Water Board amended the MRP of the SSS WDR. Update or develop a new PowerPoint presentation to reflect the new reporting requirements and how it affects the City.	Completed.
	Finalize the formal agreement with Sacramento Area Sewer District (SASD) regarding the discharge of wastewater from the City collection system into the SASD system.	Completed.
	Update SSMP section 11.4 to reference Appendix C-5 for the Joint Exercise of Powers Agreement for the SPWA and to reference SSMP Appendix C-6 for the Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities.	In Progress
	Update SSMP Appendix K-5 to include the Funding Agreement Relating to the South Placer Wastewater Facilities. It currently includes only the flysheet.	No Progress.
	Update SSMP document to reference the appendices included on the City website (i.e., Appendix K-6 Sewer Smart Newsletter and Appendix K – FOG Pharm Outreach 2012-13 Budget).	No progress.

2.2 Review of FY13/14 and FY14/15

The City has prioritized eliminating SSOs from the collection system and was successful preventing any Category 1 and Category 2 SSOs during the FY 13/14-14/15 audit period. A total of 10 Category 3 mainline SSOs occurred, of which 5 were caused by Grease Deposition (FOG) issues (i.e., 50% of all mainline SSOs). A total of 79 Category 3 lateral SSOs occurred, of which 63 were caused by Root intrusion (i.e., 80% of all lateral SSOs).

SECTION 3 SSO Trends

3.1 Historical SSO Data

A total of 89 Category 3 SSOs occurred during FY 2013/14 (47 SSOs) and FY 2014/15 (42 SSOs). Information regarding these SSOs is located in Section 7.1 and details the date, location, type, volume, volume recovered, and recovery percentage of total volume of each spill.

One of the City-defined tasks of the Audit is to compare the information submitted to the publicly available California Integrated Water Quality System (CIWQS) database with internal City records. The WWC Superintendent verifies that SSO data in CIWQS is accurate and matches the SSO Field Report Forms. Table 3 shows an organized view of key data present in the CIWQS and City internal records and shows discrepancies, if any, between them. The information presented in the "Internal Records" column represents a summarized view of various performance measures maintained by the City.

Table 3: CIWQS and City SSO Historic Data

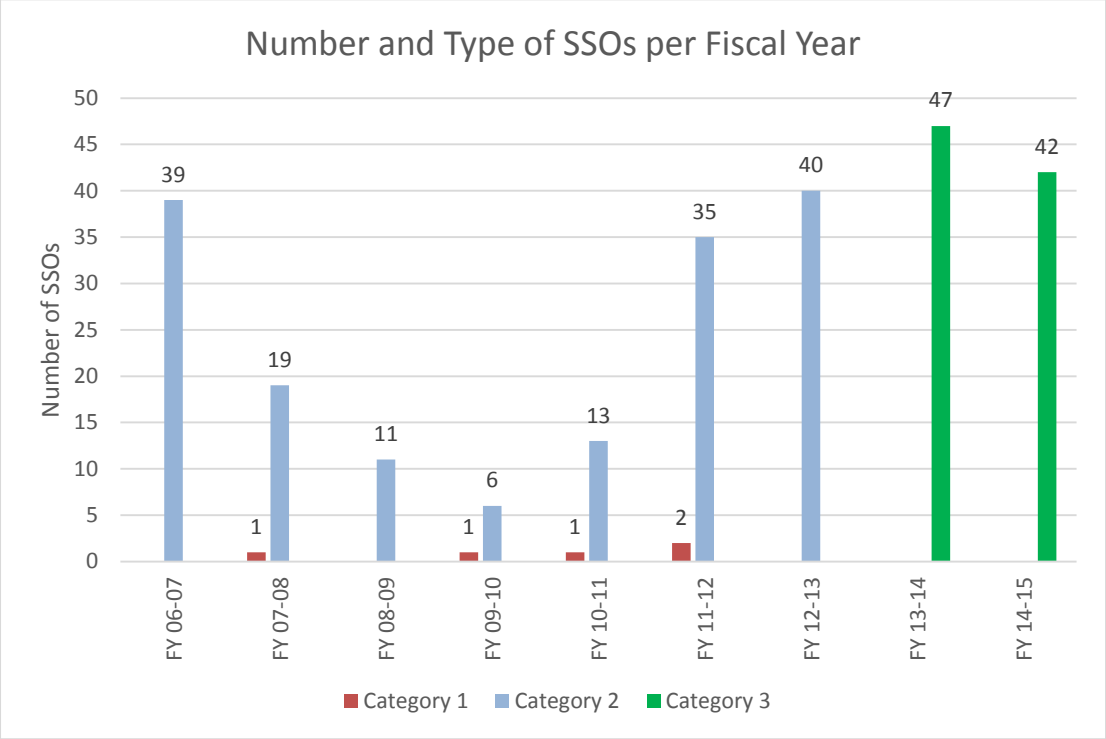
SSO Historical Data since last SSMP Internal Audit	CIWQS Data FY 11/12 – 12/13	Internal Records FY 11/12 – 12/13	CIWQS Data FY 13/14 – 14/15	Internal Records FY 13/14 – 14/15
The total number of potential SSO service calls received	-	505 / 438 calls	-	627 / 915 calls
The total number of SSOs reported	77 SSOs	77 SSOs	47 / 42 SSOs	47 / 42 SSOs
The reported total volume of SSOs	2053 gallons	2053 gallons	2388 gallons	2385 gallons
The reported total volume of SSOs that reached waters of the state	405 gallons	405 gallons	0 gallons	0 gallons
The percent volume of SSOs recovered	80%	80%	93%	94%
The average SSO response time	23 minutes	21 minutes	18 minutes	18 minutes
The average SSO duration time	18 minutes	-	3:00 hours*	-
The average SSO mitigation time	-	-	< 6 minutes	< 5 minutes

* Seven long-duration SSOs (> 3 hours long) occurred during the audit period that increased the average SSO duration length from 42 minutes to 3 hours

The following discussion investigates the City's historical SSO data to identify potential SSO trends to provide insight into measuring the effectiveness of the City SSMP and future improvements in reducing SSOs. Figure 1 highlights the type and number of SSOs since FY 2006/07. The SWRCB defined new three SSO categories as of September 13th, 2013. A category 1 SSO is currently defined as a spill of any volume that reaches surface water. A Category 2 SSO is currently defined as a spill greater than or equal to 1,000 gallons that does not reach surface

water. A Category 3 SSO is currently defined as a spill less than 1,000 gallons that does not reach surface water. As demonstrated in Figure 1, the total number of SSOs per fiscal year has increased slightly since FY 11/12 and FY 12/13 but is limited to Category 3 SSOs.

Figure 1: Number of SSOs per Fiscal Year



To provide regional context and insight into the City's collection system performance, **Table 4** compares the City's average number of SSOs and average spill volume per SSO per 100 miles of sewer pipeline next to results from sub-region Central Valley –Sacramento (part of State Water Control Board Region 5) and California (State). This information is gathered from the SWRCB's annual compliance reports. These reports and their related data can be found online at the following link: http://www.waterboards.ca.gov/water_issues/programs/sso/docs/compliance_report_fy1112.pdf. Generally the City average SSOs/100 miles of sewer pipe is far below the average of all municipal agencies in the Central Valley Sacramento subregion, and is slightly higher than the State. The City's average spill volume/100 miles of sewer pipe is an order of magnitude smaller than the state, which highlights how effective the City's SSO preventative maintenance and response program has been.

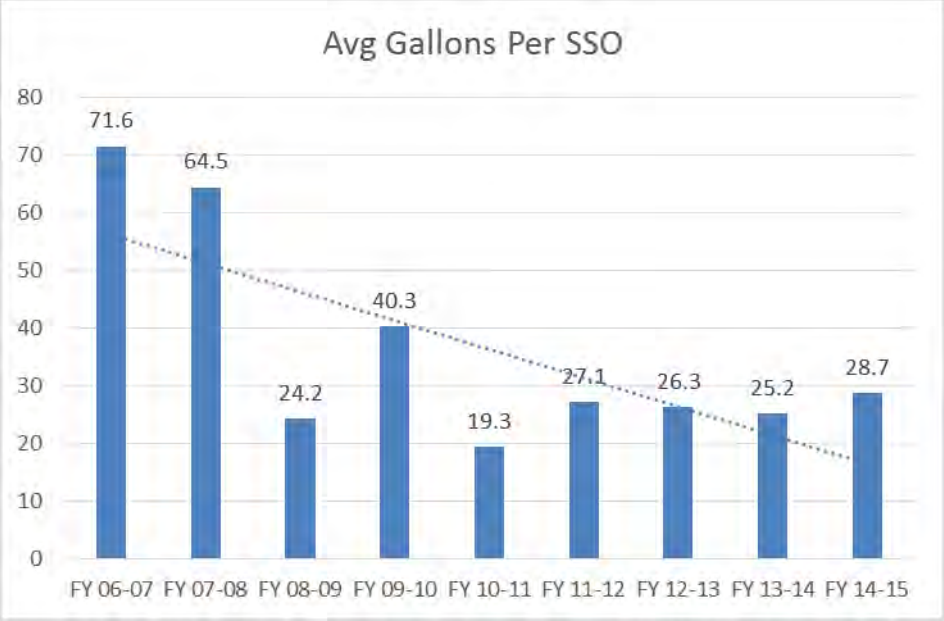
Table 4: Regional Comparison of SSO Data

Fiscal Year	Average # of SSOs per 100 miles (number)			Average Spill Volume per 100 miles (gallons)		
	City	Central Valley - Sacramento	State	City	Central Valley - Sacramento	State
2011/12	4.88	12.4	4.28	132	3,396	13,925
2012/13	5.85	12.72	4.38	154	4,371	8,194
2013/14	6.39	11.96	4.38	160	2,878	4,587
2014/15	5.71	Report not available yet		163	Report not available yet	

* Includes gravity mainline, laterals, and pressure pipes

A valuable source of analysis is also comparing average gallons spilled per SSO across fiscal years. As demonstrated in Figure 2, the overall gallons per SSO since 2007 shows a downward trend, but the more recent trend in the past 4 years shows that gallons per SSO is generally steady and holding at approximately 27 gal/SSO. Table 4: Regional Comparison of SSO Data

Figure 2: Average Gallons per SSO



Based on CIWQS records, Table 5 demonstrates the leading causes of SSOs in this audit period compared to the previous audit period. Generally SSOs from Debris and Fog have increased moderately, but SSOs caused by Roots (51 to 63) have experienced a notable increase. There have been no Capacity-caused SSOs in this audit period. The actions planned as a result of this SSMP Audit will target the leading causes to most effectively reduce the number and spill volume of SSOs.

Table 5. Leading Causes of SSOs in FY13-15 (results from FY11-13 in parenthesis)

By Number		By Volume		By Average Volume per SSO	
Cause	**Number**	**Cause**	**Gallons**	**Cause**	**Gallons**
Roots	63 (51)	Roots	1281 (1235)	FOG	149 (39)
Debris	15 (12)	FOG	743 (77)	Debris	21 (19)
Pipe Failure	6 (9)	Debris	314 (222)	Roots	20 (24)
FOG	5 (2)	Pipe Failure	50 (114)	Pipe Failure	8 (13)
Capacity	0 (2)	Capacity	0 (400)	Capacity	0 (200)
Vandalism	0 (1)	Vandalism	0 (5)	Vandalism	0 (5)

3.2 Performance Measures

The City utilizes multiple performance measures to assess the effectiveness of the SSMP in achieving proper operation and management of the sanitary sewer system to reduce and prevent SSOs. While the City may use other performance measures for evaluation purposes, the following measures are typically used:

- SSO Rate (SSOs per 100 miles of collection system piping per year)
- Number of SSOs for each cause (roots, FOG, debris, pipe failure, capacity, lift station failures, etc.)
- Median SSO volume (gallons)
- Percentage of SSOs greater than 100 gallons (%)
- Percentage of SSOs reported as Category 1 (%)
- Percentage of SSO volume recovered (%)
- Percentage of SSO volume reaching a surface water (%)

The City's CIWQS SSO record were queried to analyze each performance measure from FY 11/12 to FY 14/15 and the data is displayed in **Table 6** below. From analyzing the table, the City's SSO rate has increased slightly during this audit period compared to the last, mostly related to the increase in root-related SSOs.

Table 6: Performance Measures

Performance Measures		FY 11/12	FY 12/13	FY 13/14	FY 14/15
SSO Rate, SSOs/100 mi		4.88	5.85	6.39	5.71
SSO Cause	FOG	0	1	4	1
	Roots	18	30	32	31
	Debris	1	0	1	0
	Debris-Rags	7	2	7	2
	Pipe Failure	6	4	1	5
	Non Dispersables	0	0	1	2
	Vandalism	1	0	0	0
	Capacity	0	2	0	0
	Construction	0	0	0	1
	Unknown/Other	2	3	1	0
Median SSO Vol (gal)		27	26	25	29
% of SSOs > 100 gal		2.8	2.3	2.1	4.7
Category 1 % of Total SSOs		0	7	0	0
% of Spill Volume Recovered		99	63	94	93
% of Spill Vol Reaching Surface Water		0	37	0	0

SECTION 4 Audit Procedure

In accordance with SSS WDER Section D.13.x, the primary SSMP audit objective is to focus on evaluating the effectiveness of implementing the SSMP and the City's compliance with the SSMP requirements identified in the SSS WSDR Order. This section details the procedures used to meet this objective.

4.1 Review of SSMP Compliance

This Audit assessed the City's SSMP against the requirements outlines in the SSS WDR. The subsections of SECTION 5 listed below are organized by SSMP elements. Each subsection contains a table which lists the SSS WDR section D.13 requirements and City's level of compliance of the SSMP with that particular requirement. The compliance status of the City's SSMP is indicated with one of the following ratings: ***Yes*** *– in compliance,* ***No*** *– not in compliance, or* ***N/A*** *– not applicable with a written justification in the SSMP.* If there are any compliance deficiencies, then an explanation of the deficiency is given. Each deficiency will have a recommended SSMP enhancement, which may include action items, adjustments, and/or timelines of the planned completion.

4.2 Review of SSMP Effectiveness

Subsequent to the SSMP compliance assessment compared to SSS WDR requirements, an evaluation of the effectiveness of the SSMP elements has been conducted to comply with the requirements for SSMP audits per subsection D.13.x of the SSS WDR. The discussion review if the plan outlined for each section is being followed, and how effective the plan is at reaching the desired objectives. Recommendations will be made where

appropriate based on the results of this Audit to identify tasks to improve the effectiveness of SSMP activities. Performance metrics will be used wherever possible to measure the effectiveness of the SSMP elements.

This section will not repeat the information and plans presented in each section of the SSMP and is intended to evaluate the effectiveness of the stated plans for each SSMP element. The reader should reference the City's SSMP to obtain the information referenced by this Audit.

A summary of the recommended modifications made through this Audit is included in SECTION 6.

SECTION 5 Audit of SSMP Elements

This section evaluates all elements of the City's SSMP. Each section of this chapter is associated with one of the eleven elements of the SSMP in accordance with SS WDR section D.13 requirements. Each element is evaluated for compliance and effectiveness described above in 4.1 and 4.2 respectively.

5.1 Goals

5.1.1 Compliance

Table 7. Compliance with SSS WDR D.13.i - Goals

SSMP Requirement	Compliance	Deficiencies
i Properly manage, operate, and maintain all portions of the City's wastewater collection system.	Yes	-

5.1.2 Effectiveness of SSMP Elements and Recommended Modifications

Roseville Goals (SSMP 1.2)

- Level of Effectiveness: The City currently has six goals identified in the SSMP. The goals of the City recorded in the SSMP have been effective in guiding the City's activities to support the objective of the SSS WDR to protect the waters of the state.

- Recommendations: No recommendations at this time

5.2 Organization

5.2.1 Compliance

Table 8. Compliance with SSS WDR D.13.ii - Organization

SSMP Requirement	Compliance	Deficiencies
ii(a) Identify Legally Responsible Official (LRO)	Yes	-
ii(b) SSMP responsibility and organization chart	Yes	-
ii(c) Chain of communication for reporting SSOs	Yes	-

5.2.2 Effectiveness of SSMP Elements and Recommended Modifications

List Legally Responsible Official (LRO) (SSMP 2.1)

- Level of Effectiveness: The City has Ken Glotzbach (Utility Manager) and Chris Bracco (Wastewater Collections Superintendent) listed in CIWQS as LROs. Dan Pruden (Wastewater Collections Supervisor) is listed as a data submitter. This is recorded in Appendix B-1 of the SSMP and is publicly accessible. The

current organization of data submitters and LROs has proven effective in reporting SSOs to meet the requirements of the September 2013 amended Monitoring and Reporting Program.

- Recommendations:
  - Modify Appendix B-1: Add Wastewater Collections Supervisor Dan Pruden to Appendix B-1
  - Modify Appendix B-1: Update City Council positions and add phone numbers (Mayor Carol Garcia, Vice Mayor Susan Rohan, City Attorney Robert Schmitt). Update Commissioners and phone numbers: Chair Blandon Granger, Vice Chair John Speight. Update Liaisons and phone numbers for EU Director Richard Plecker, and Secretary Cheryl Hammond. Update Principal EU engineer and phone number for Jason Shykowski. Update Administrative Analyst and phone number for Maurice Chaney.

SSMP Responsibility Organization Chart (SSMP 2.2)

- Level of Effectiveness: The SSMP Responsibility Organization Chart (SSMP Figure 2-1) is current in the SSMP and lists a descriptive definition of each individual's responsibilities. The chart is effective in defining the work flow and responsibilities of the individuals as well as departments within the City of Roseville's operations with relation to the SSMP. The narrative of the general position description are outlined in Section 2.2 of the SSMP.

- Recommendations:
  - Modify Figure 2-1: Modify the Industrial Waste Specialist category and remove the FOG Control Program from the description due to the FOG program oversight transitioning from IWS to WWC in 2016. Add the Fog Control Program description to the Wastewater Collection Office Assistant category.
  - Modify SSMP Section 2.2: Modify the general position description and SSMP responsibilities under the Lab/Industrial Waste Supervisor, Specialist, and Technician and remove the FOG Control Program or inspection program from those descriptions.
  - Move the FOG Control Program SSMP responsibility into the WWC Superintendent category and the WWC Office Assistant category.

Chain of Communication Reporting Chart (SSMP 2.3)

- Level of Effectiveness: The internal notification contact chart is current and readily available to all wastewater utility district staff. The city of Roseville has a 24 hour call center, standardized answering script and procedures, and a full time staff wastewater utility customer service representative. The individual's job is to respond to any service calls including but not limited too: backups, SSOs, smell complaints, etc. This has been an effective and well-utilized service, as service calls have increased and the average SSO response time has decreased from 23 minutes from the previous audit period to 18 minutes which is well below the 40 minute target. Only 3 SSO response times were above 40 minutes during the audit period (1:30:00, 00:42:00, and 1:11:00) which totaled 16 gallons in spills and all occurring in the morning at around 8:30 AM, two of which occurred on weekday mornings possibly impacted by dense morning traffic.

- Recommendations:
  - Modify Figure 2-2 Flowchart: Update the WWC Divisions overflow emergency response plan chain of communication to match existing operations, whereby WWTP and LS staff and SCADA alerts should always call the 24 hour call center instead of WWC service staff. In addition, modify the Wastewater Admin cell and rename the position as Office Assistant.
  - Modify Appendix F-1 Flowchart: Follow the same recommendations written above.

5.3 Legal Authority

5.3.1 Compliance

Table 9. Compliance with SSS WDR D.13.iii – Legal Authority

SSMP Requirement	Compliance	Deficiencies
iii(a) Prevent illicit discharges	Yes	-
iii(b) Properly designed and constructed sewers	Yes	-
iii(c) Ensure access to laterals owned/maintained by City	Yes	-
iii(d) Limit the discharge of FOG and other debris	Yes	-
iii(e) Enforce any violation of City ordinances	Yes	-

5.3.2 Effectiveness of SSMP Elements and Recommended Modifications

Industrial Pretreatment Program (SSMP 3.2)

- Level of Effectiveness: The Industrial Waste Section (IWS) administers the Pretreatment Program Enforcement Response Plan and implements enforcement procedures specified by the U.S. EPA in accordance with 40CFR 403.5 (f) (5). The IWS has the authority to permit and monitor significant industrial users (SIUs) and small commercial/industrial dischargers. The implementation of the Pretreatment Program Enforcement Response Plan has been effective in providing the City the authority to control and prevent illicit discharges to the collection system.

- Recommendations: No recommended modifications at this time.

Municipal Code and Design and Construction Standards (SSMP 3.3)

- Level of Effectiveness: The City's design and construction standards regulate the preparation of plans for construction of additions/improvements to the sewer. The Roseville Municipal Code (RMC) section 14.12.040 requires that building sewer and connection into the public sewer system conform to the requirements of the building and plumbing code or other applicable rules and regulations of the City. The RMC also requires an installation of a lateral line clean out at the point of connection with the public sewer. The City design and construction standards and the RMC section 14.12.040 have been effective in providing the City the legal authority to properly design and construct the sewers and connections.

- Recommendations: No recommended modifications at this time.

Municipal Code – Sewer Access Authority (SSMP 3.4)

- Level of Effectiveness: The Charter in the RMC, Article X Sec. 10.01 designates the authority to access City owned and operated facilities, either within or outside its corporate limits, number of activities including, but not limited to maintenance, inspection, and repair related to sewage collection. The authority gives legal access to all City-owned sewer facilities. The City has not had issues to date with lack of access to facilities based on legal authority. The current legal authority to access sewer facilities has been effective in supporting the goals of the SSMP.

- Recommendations: No recommended modifications at this time.

Municipal Code – FOG (SSMP 3.5)

- Level of Effectiveness: The RMC chapter 14.14 is a robust FOG ordinance that lists regulatory requirements, fees, administrative requirements, and authority to enforce regulatory compliance. This ordinance is effective in identifying the required equipment and BMPs for FSEs as well as indicating the authority of the City to enforce the FOG requirements.

- Recommendations: No recommended modifications at this time.

Municipal Code – Enforcement Authority (SSMP 3.6)

- Level of Effectiveness: The RMC section 14.12.060 authorizes the City to penalize violators of the City's code requirements. At the discretion of the City attorney, an individual may be charged with an infraction or a misdemeanor. The authority to penalize infractions that may cost City resources has proven effective to maintain proper use of the wastewater collection system.

- Recommendations: No recommended modifications at this time.

Inter-Agency Agreements and Satellite Systems (SSMP 3.7)

- Level of Effectiveness: The City maintains a Joint Exercise of Powers Agreement for the South Placer Wastewater Authority and Agreement Regarding the Operation and use of the South Placer Regional Wastewater Facilities. In addition, the City has an Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).

- Recommendations: Update SSMP section 3.7 to include the Wastewater Service Contract and Operating Agreement between the City, SASD, and SRCSD.

5.4 Operation and Maintenance Program

5.4.1 Compliance

Table 10. Compliance with SSS WDR D.13.iv – O&M Program

SSMP Requirement	Compliance	Deficiencies
iv(a) Collection system maps	Yes	-
iv(b) Preventive O&M activities	Yes	-
iv(c) Rehabilitation and Replacement (R&R) plan	Yes	The City does have an R&R plan in place but additional improvement should be implemented (see below)
iv(d) Training	Yes	The City provides regular training but additional improvements to the training program should be implemented (see below)
iv(e) Equipment and critical replacement parts	Yes	-

5.4.2 Effectiveness of SSMP Elements and Recommended Modifications

Roseville Collection System Maps (SSMP 4.2)

- Level of Effectiveness: The city maintains electronic and hard copy maps of the sanitary sewer system and storm drain system. Updates to the electronic map system are translated to the field crew trucks via single sheet prints, if required. Full hard copy mapbooks are updated on a yearly basis. The City Mapping Update Policy is followed in order to ensure mapping is correct and completed in GIS and made available to the required users.

- Recommendations: Include the Mapping Update Policy Document as an appendix to the SSMP and post it to the City's SSMP website page.

Roseville Preventive Operations & Maintenance Activities (SSMP 4.3)

- Level of Effectiveness: WWC engages in various programs to complete routine preventative maintenance activities, which include jet cleaning, lateral eeling, chemical root control, CCTV inspections, visual inspections, and lift station maintenance.

  The City experienced a 24% increase in root-caused SSOs during the audit period but also increased total mechanical root control by 35% and implemented chemical root control in laterals with known root issues. The spike in root growth SSOs could be correlated with the City's mandatory water conservation efforts in response to California historic drought over the audit period. Homeowners and the City responded by decreasing irrigation use, in which case root systems may have intensified growth around existing laterals and connection points to main line pipes as overall soil moisture decreased.

The City outperformed targets and past performance measures as evident in Table 11. Other performance measures or benchmarks are reviewed in full in the recommendations of Section 5.9.

Table 11. Performance Measures related to SSS WDR D.13.iv(b)

Performance Measure	Target	FY11/12	FY12/13	FY13/14	FY14/15
Total miles cleaned per year	250	277	272	330	284
Total miles of mechanical root control per year	-	9.74	11.23	13.89	14.69
Total number of sewer maintenance field staff	NA	23	23	23	24
Average high velocity cleaning per crew per day	NA	1866 LF	1852 LF	2393	2922
Average cost of sewer mechanical cleaning	-	$1.57/LF	$1.36/LF	$1.23/LF	$1.20/LF

- Recommendations:
  - Update SSMP Section 4.3 Overview with updated statistics about the City's service area, number of customers, miles of main, number of services, and number of lift stations. Also update the number of WWC employees.

Rehabilitation and Replacement Plan (SSMP 4.4)

- Level of Effectiveness: The City regularly CCTV inspects pipelines using the national Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) coding standard. The City evaluates the risk of failure for each asset based on the various data sources it maintains (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections) and assigns high risk assets in a ranked Rehabilitation and Replacement (R&R) Plan. If an R&R project is not completed in one year, then it is rolled over to the next. The City maintains a 5-year list of planned R&R CIP projects.

  During this audit period WWC produced the R&R list for pipeline lining and manhole rehabilitation which was then used by EU Engineering which operates the R&R program. The City is anticipating changes to this program soon, however, and WWC will produce its own manhole R&R list like before but will also operate the R&R program for it. In addition, EU Engineering will receive the condition assessment data generated by WWC for sewer pipelines and will then produce its own R&R list and continue operating the R&R program for sewer pipelines. In addition, use of the Hansen CMMS software will be discontinued and Maximo CMMS software implemented.

  In accordance with City-utilized performance measures related to inspection and R&R program activities as displayed in Table 12, the City has met or exceeded targets with one exception. In FY 14/15 the City missed its goal for total miles of laterals rehabilitated using CIPP per year. The total number of laterals rehabilitated in this audit period was less than the previous audit period, but the total sewer main miles of CCTV inspections increased. Overall the R&R plan development and implementation has been effective and ensures high-priority projects are implemented.

Table 12. Performance Measures related to SSS WDR D.13.iv(c)

Performance Measure	Target	FY11/12	FY12/13	FY13/14	FY14/15
Total miles visually inspected per year (not CCTV)	-	0.25	0.25	0.25	0.25
Number of laterals rehabilitated using CIPP per year	50	134	50	90	43
Total miles CCTV inspected per year (main)	30	29.2	67.6	53.27	65
Average cost of CCTV (main)	-	$0.48/LF	$0.56/LF	$0.35/LF	$0.41/LF

- Recommendations:
  - Document the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections, etc.), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data. This was also included during the previous audit but has not been completed.
  - Document the upcoming transition in responsibilities between WWC and EU Engineering in developing and operating the R&R plan by describing it in the SSMP. Confirm that field observations from WWC field crew are accounted for by EU Engineering when conducting risk assessment.

Training (SSMP 4.5)

- Level of Effectiveness: The WWC requires employees be certified with CWEA, DMV, CPR, First Aid, Confined Space Policy, Gas Detector Policy, as well be trained in equipment safety, maintain OSHA rules, and review material safety data sheets.

  The existing training program has been effective in supporting a well-trained staff. Over this audit period WWC has reported 2 on the job accidents in FY 13/14 and 8 in FY 14/15. WWC strives for zero-on-the-job accidents and has weekly tail-gate training meetings and monthly training sessions where WWC staff is trained in part via various SOPs.

- Recommendations:
  - Augment the ongoing training program by documenting that WWC staff have demonstrated the ability to operate a major piece of equipment (i.e., combo Vactor unit) in accordance with available SOPs to a supervisor before using it for the first time in the field and at a specified frequency (i.e., annually or if equipment is upgraded). The document would need to list a piece of equipment, the name of the journeyman, supervisor, signatures, name of SOP if used, and date.
  - Modify SSMP Section 4.5 to include training on SSOERP.

Equipment and Critical Replacement Parts (SSMP 4.6)

- Level of Effectiveness: WWC maintains a list of equipment and critical replacement parts inventory in Appendix D of the SSMP. The critical replacement parts list is 100% stocked, up to date, and is maintained by the Material Technician at Dry Creek WWTP. The equipment and critical replacement

parts inventory and upkeep is effective and ensures that a lift station critical part failure can be quickly mitigated.

- Recommendations: No recommended modifications at this time.

5.5 Design and Performance Provisions

5.5.1 Compliance

Table 13. Compliance with SSS WDR D.13.v – Design and Performance Provisions

SSMP Requirement	Compliance	Deficiencies
v(a) Sanitary sewer design and construction specifications	Yes	-
v(b) Procedures and standards for inspecting and testing new and R&R projects	Yes	-

5.5.2 Effectiveness of SSMP Elements and Recommended Modifications

Sanitary Sewer Design and Specifications (SSMP 5.2)

- Level of Effectiveness: The City's design and construction standards are available on the website and the online SSMP documentation lists their location. These designs and construction standards are effective in ensuring that new or rehabilitated infrastructure is designed and constructed in an acceptable manner.

- Recommendations: No recommended modifications at this time.

Sanitary Sewer System Construction and Performance Provisions (SSMP 5.3)

- Level of Effectiveness: The City's construction and design standards include procedures and requirements for the testing of new/rehabilitated assets and has been effective in ensuring that recently constructed assets perform as expected.

- Recommendations: No recommended modifications at this time.

5.6 Overflow Emergency Response Plan

5.6.1 Compliance

Table 14. Compliance with SSS WDR D.13.vi - OERP

SSMP Requirement	Compliance	Deficiencies
vi(a) Proper notification procedures	Yes	-
vi(b) Program for appropriate SSO response	Yes	-
vi(c) Procedure for prompt notification to regulatory agencies	Yes	-
vi(d) Procedures for appropriate staff and contractor training	Yes	
vi(e) Procedures to address emergency operations (e.g., traffic, crowd control)	Yes	-
vi(f) Program to ensure containment of SSO to prevent discharge and minimize adverse impacts on the environment	No	SSOERP does not meet certain water quality monitoring requirements of the amended MRP document

5.6.2 Effectiveness of SSMP Elements and Recommended Modifications

Notification Procedures (SSMP 6.2)

- Level of Effectiveness: The average SSO response time was 18 minutes from notification of SSO to operator arrival time for the City of Roseville. This response time is much faster than the City target response time of 40 minutes and indicates that the notification procedures employed the City are effective in facilitating a rapid response from the City's first responders.

- Recommendations: No recommended modifications at this time.

Response Program (SSMP 6.3)

- Level of Effectiveness: SSO response procedures are documented in Appendix F-1 Section 2 of the SSMP and are summarized in the flow chart in Figure 6-2 of the SSMP and Appendix F-1 SSOERP. The flow chart uses a series of yes/no questions to guide SSO responders in quickly identifying the right sequence of decisions and actions to properly assess and mitigate an SSO. This chart is simple and effective in explaining the process in which to mitigate an SSO.

  During the audit period, the average SSO volume spilled was 26 gallons, with an average 94% recovered from the total SSO volume. Similarly, the average SSO duration length was 3:00 hours long, however there were 7 long-duration SSOs (over 3 hours) that caused the average SSO duration length to increase from 42 minutes. One of these SSOs in FY 13/14 spilled from a lower lateral for 70 hours and resulted in the largest volume spilled of 570 gallons, however all of it was recovered. In all of these instances, the City was notified very late, and once notified, stopped all of the long duration SSOs in under 25 minutes.

The average City response time to SSO calls during the audit period was 18 minutes, and the average time it took to stop the SSO (SSO mitigation) once on-site was just under 5 minutes. These statistics demonstrate that the City has been effective in responding and mitigating SSOs.

- Recommendations:
  - The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station. This list should also be updated to incorporate new lift stations at Washington Blvd and 7600 Sierra College. This was also recommended during the previous audit but has not been implemented.
  - Modify SSOERP Section IV Traffic Control (WWC Personnel) to require WWC Personnel to implement traffic control in every situation where WWC personnel may be at risk of vehicular impact in accordance with MUTCD (part of Caltrans Work Area Traffic Control Handbook). It is recommended that WWC produce several standard TCPs (Traffic Control Plan) to match existing traffic conditions or type of roadway (i.e., arterial, residential, etc.).
  - Modify SSOERP Section V Correct Cause (WWC Personnel) to include a discussion of whether a root-caused SSO could be classified as a PLSD if the City defines a spill cause as the entry point of the root and whether that location is on lower (city) or upper lateral side (private). Include recommendations to provide good documentation of the decision with photographic evidence and a logical narrative.

Regulatory Notification Procedure (SSMP 6.4)

- Level of Effectiveness: The Superintendent and Utility Manager are the legally responsible officials (LRO) for certifying SSO reports submitted to CIWQs. The Superintendent and Supervisor are also responsible for reporting the SSOs to RWQCB, OES, and Placer Environmental Health Department as required. This section is effective in conveying the responsibility the LRO in reporting SSOs to the proper authorities.

- Recommendations: No recommended modifications at this time.

Staff and Contractors Training (SSMP 6.5)

- Level of Effectiveness: Each WWC employee is required to complete the SSO response procedure training updates and review of SSO training are included in the weekly tailgate meeting throughout the year. They are also trained on the various SOPs implemented within WWC. Contractors are also required to implement the procedures identified in the SSO training prior to working within the collection system. As evidenced by the fast response and mitigation times, the WWC staff's training has been effective.

- Recommendations: No recommended modifications at this time.

Emergency Response Coordination (SSMP 6.6)

- Level of Effectiveness: WWC employees are required to complete the Emergency Action plan training annually. This covers HAZ WOPER first responders and Roseville's Incident Command System (ICS). These process, procedures, and response systems are also reviewed via weekly safety tail gate meetings. These training sessions have been effective way to prepare staff to deal with hazardous waste and materials.

- Recommendations: No recommended modifications at this time.

Spill Mitigation and Containment Procedure (SSMP 6.7)

- Level of Effectiveness: Appendix F-1 of the SSMP includes an SSOERP which includes an SOP for estimating spill volumes, containment, and mitigation of spills. The new amended Monitoring and Reporting Program (MRP) requirements implemented in September 2013 require a robust water quality monitoring plan that must account for spill travel time in surface water, among several new requirements. The City's current SSOERP Appendix C Water Quality Sampling Procedures document does not meet these requirements.

- Recommendations:
    - Modify SSOERP Appendix A – Start Time Documentation Policy to include the following WWC standard field practice: If the start time cannot be set based on witnesses and if there is evidence of a spill traveling a farther distance than 15 minutes, then the field crew estimates the new start time and may try to recreate the spill (with clean water) to estimate volumes.
    - Modify SSOERP Appendix C – Water Quality Sampling Procedures to the meet the requirements of the amended MRP.
        - Account for spill travel time in the surface water and scenarios where monitoring may not be possible to safety concerns or access restrictions once an SSO has stopped. This may be estimated by dropping floatable debris, for instance, and measuring the time required to travel a certain distance.
        - Expand minimum sampling parameters to include appropriate bacterial indicators that have been specifically listed in the beneficial uses of the City's waterways or more broadly listed by the regional Basin Plan.
    - Modify SSOERP Appendix C – Water Quality Sampling Procedures to include a list of all of the required equipment that the employee would need to conduct proper sampling.

5.7 FOG Control Program

5.7.1 Compliance

Table 15. Compliance with SSS WDR D.13.vii – FOG Control Program

SSMP Requirement	Compliance	Deficiencies
vii(a) Public education plan	Yes	The City does have a public education plan but additional improvements should be implemented (see below)
vii(b) FOG disposal plan	Yes	-
vii(c) Legal authority to prohibit SSOs and blockages caused by FOG discharges	Yes	-
vii(d) BMPs, grease removal devices, recordkeeping, and reporting requirements	Yes	-
vii(e) Authority to inspect and enforce FOG ordinance	No	The City does have the authority to inspect/enforce FOG ordinance but no inspection records were produced for the Audit period.
vii(f) FOG Characterization Assessment and Hot Spot Cleaning Schedule	Yes	-
vii(g) FOG Control Program Measures	Yes	-

5.7.2 Effectiveness of SSMP Elements and Recommended Modifications

Public Education Plan (SSMP 7.2)

- Level of Effectiveness: The City has developed and operates a comprehensive FOG outreach program to residents, restaurants, and the plumbing community on the proper disposal of FOG. The main objective is to educate the City of Roseville residents and restaurants on the proper disposal of FOG to meet or exceed outreach standards set forth in the State General WDR requirements. The program has implemented TV ads, flyers, bill inserts, and websites to convey the message of educating the public on the proper disposal of FOG and other substances. This system appears to be effective in educating the public on the proper disposal of FOG and other substances.

- Recommendations: List Maurice Chaney as the responsible party for the FOG Public Education Plan.

FOG Disposal Plan (SSMP 7.3)

- Level of Effectiveness: During the audit period the Industrial Waste Section (IWS) oversaw the FOG disposal plan with permitted FSEs, however all FOG program-related responsibilities transitioned to WWC in 2016. The City currently has 319 FSEs that are required to and have obtained a FOG wastewater discharge permit (FOG WDP). The same City regulations from the audit period are in place which require

permittees to retain a minimum 3 years of documentation to prove the proper cleaning, maintenance, and removal of FOG from grease control devices and the disposal site location. The City provides information about the permitting process and permit applications on the City website (URL address below) as a resource for businesses and residences within the City.
(http://www.roseville.ca.us/eu/wastewater_utility/fats_oils_n_grease/default.asp)
The FOG record keeping requirements for FSEs appear to be effective in that only three FOG-related SSOs occurred over the audit period.

- Recommendations:
  - Modify SSMP Section 7.3 to reflect the change in responsibilities from IWS to WWC.

Record Keeping Requirements (SSMP 7.4)

- Level of Effectiveness: As discussed in the previous section, FOG control program responsibilities transitioned from IWS to WWC in 2016, but during the audit period, IWS operated the program. The City requires in RMC Section 14.14.260 that permitted FSEs retain logbooks on grease control device maintenance cycles, FOG hauling records, sampling data and sludge height monitoring in FOG control devices, BMPs, and records of private lateral SSOs and subsequent mitigation. The recordkeeping requirements and time frames identified in the RMC have enough information necessary for the City to enforce permit requirements of FSEs.

- Recommendations:
  - Modify SSMP Section 7.4 to reflect the change in responsibilities from IWS to WWC

Legal Authority to Prohibit SSOs and Blockages Caused by FOG Discharges (SSMP 7.5)

- Level of Effectiveness: The RMC Section 14.12.050 provides the City with a FOG ordinance and legal authority to require FOG interceptors when deemed necessary by the director. The ordinance prohibits FOG-related blockages and SSOs, and limits the maximum allowable concentration of FOG in FSE discharges at the current level of 100 mg/L of wastewater. This ordinance is effective in providing the City with the tools necessary to minimize FOG discharges into the sewer system.

- Recommendations: No modifications recommended at this time.

BMP, Grease Removal Devices, Recordkeeping, and Reporting Requirements (SSMP 7.6)

- Level of Effectiveness: The City requires all FSEs that discharge FOG to acquire a FOG WDP permit which includes provisions for FSEs to maintain BMPs and grease interceptors, cleaning records, and to report private FOG-related SSOs or blockages. The FOG WDP requirements are effective in providing the City with the tools to limit FOG discharges into the sewer system.

- Recommendations:
  - Modify SSMP Section 7.6 to reflect the change in responsibilities from IWS to WWC

Inspection and Enforcement Authority – FOG Producers (SSMP 7.7)

- Level of Effectiveness: All FSEs that discharge FOG are required to obtain and comply with a City FOG WDP. Under the permit, the FSE must comply with the FOG ordinance as detailed under the RMC, and the City maintains the legal authority to physically inspect the FSE and determine if it is in compliance. During the audit period, the City reported that all 319 permitted FSEs were inspected by IWS and zero enforcement actions initiated. Under oversight from WWC, the City plans on inspecting all 319 FSEs each fiscal year.

  The City possesses effective tools to regulate FOG discharges via a robust FOG ordinance which also requires an effective FSE inspection program. During this audit, the City did not provide inspection records, however, and without detailed documentation it is not possible to judge the effectiveness of the FOG inspection and enforcement authority element of the SSMP.

- Recommendations:
  - Modify SSMP Section 7.7 to reflect the change in oversight from IWS to WWC
  - Document all FSE inspections. Develop a standard FSE inspection form which lists individual elements the FOG WDP permittee is required to maintain in a logical order for the inspector to follow. At a minimum, the inspector should enter the FSE, check the grease removal device, conduct a FOG concentration sample, request and view cleaning/hauling records and associated BMPs. After filling out the inspection form to document the whole procedure, transfer the results of the inspection form into a database or spreadsheet by which WWC can track compliance of the multiple required elements under the permit. Follow up with FSEs as required and formally document the process. Attach a blank version of the inspection form as an appendix in the SSMP.

FOG Characterization Assessment and Hot Spot Cleaning Schedule (SSMP 7.8)

- Level of Effectiveness: The City has been effective in limiting FOG-related SSOs to three during the audit period by identifying and placing assets impacted by FOG as a last resort on the hot-spot, high frequency 3-month cleaning list. If the City encounters abnormal FOG levels in a pipe it will first reach out to FSEs and residents that it thinks may be contributing to it and distribute pamphlets to them to minimize FOG discharges. If that does not solve the problem, then the asset is put on the hot-spot list. Approximately 60% of the 90 hot-spot assets have FOG-related issues that as a whole require significant City resources to clean every 3 months.

- Recommendations:
  - Modify the EU Engineering GIS database to include hotspot assets and FSEs and add them as layers to the maps that WWC receives.
  - Modify SSMP Section 7.8 to describe the process of how pipelines are added to the hot spot cleaning schedule, and remove mention of annual sewer line maintenance work orders.

FOG Control Program Measures (SSMP 7.9)

- Level of Effectiveness: The City has established that all FOG-producing FSEs acquire a FOG WDP which limits discharge of FOG, requires proper O&M records, hauling record, BMPs, and other conditions. The FOG Control Program measure provides the City's with an effective tool to limit FOG discharges from FSEs.

- Recommendations:
  - Modify SSMP Section 7.9 to reflect the change in responsibilities from IWS to WWC.

5.8 System Evaluation and Capacity Assurance Plan

5.8.1 Compliance

Table 16. Compliance with SSS WDR D.13.viii - SECAP

SSMP Requirement	Compliance	Deficiencies
viii(a) Evaluate hydraulic deficiencies	Yes	
viii(b) Establish design criteria	Yes	-
viii(c) Establish short- and long-term CIP	Yes	-
viii(d) Develop schedule of completion dates for CIP	Yes	-

5.8.2 Effectiveness of SSMP Elements and Recommended Modifications

Evaluation Process – Capacity Enhancement Projects (SSMP 8.2)

- Level of Effectiveness: The City has developed two hydraulic simulation models to identify peak flows in the collection system in 2006. The City is currently developing a new hydraulic model and drafting a new System Evaluation and Capacity Assurance Plan (SECAP) that will conclude in 2017, making it 10 years since the last study. The modeling efforts conducted in 2006 have been effective in evaluating the system and planning for future growth, which is evident from no capacity-deficiency-related SSOs during this audit period.

- Recommendations: Modify Appendix I-1 of the SSMP to indicate that the system evaluation and capacity assurance plan will be reviewed and updated every 10 years.

Design Criteria (SSMP 8.3)

- Level of Effectiveness: The City established a 10-year, 24-hour peak design storm for the hydraulic wet weather loading of the existing collection system along with flow generation factors based on water use

records and flow monitoring data. Based on the lack of capacity-related SSOs during the audit period, it appears the City's capacity design criteria are effective.

- Recommendations: No recommended modifications at this time.

Capacity Enhancement Measures (SSMP 8.4)

- Level of Effectiveness: The SPWA Wastewater Systems Evaluation includes the identification of short and long-term Capital Improvement Project (CIP) to meet current and future wastewater flows. The new hydraulic model which will be introduced in 2017 will provide new capacity enhancement measures.

- Recommendations: No modifications recommended at this time.

Capital Improvement Program Schedule (SSMP 8.5)

- Level of Effectiveness: The City lists the goal of the CIP is to develop annual project bundles of approximately $1.5 million based on WWC condition assessment data and the hydraulic model CIP results and subsequent flow monitoring or studies. The CIP schedule is effective in identifying the tasks required to assure hydraulic capacity within the collection system.

- Recommendations: No modifications recommended at this time.

5.9 Monitoring, Measurement, and Program Modifications

5.9.1 Compliance

Table 17. Compliance with SSS WDR D.13.ix – MMM

SSMP Requirement	Compliance	Deficiencies
ix(a) Maintain metrics to prioritize SSMP activities	Yes	-
ix(b) Measure effectiveness of SSMP elements	Yes	The City does have performance indicators linked with SSMP elements, but additional improvements should be implemented (see below)
ix(c) Assess preventative maintenance program	Yes	-
ix(d) Update elements based on evaluations	Yes	-
ix(e) Identify and illustrate SSO trends	Yes	-

5.9.2 Effectiveness of SSMP Elements and Recommended Modifications

Utility Metrics to Prioritize SSMP Activities (SSMP 9.2)

- Level of Effectiveness: The WWC tracks four categories of utility metrics to monitor and measure the effectiveness of the various elements of this SSMP, which include system information, financial

information, sewer maintenance, and performance measures. The city also tracks various performance measures related to various SSMP elements and they are summarized in Appendix 7.2. Appendix I has effectively been used to identify and track the specific metrics each of the City's four categories.

- Recommendations: Update Appendix I on the City website with information from FY 13/14 and FY 14/15.

Metrics to Monitor Effectiveness of SSMP (SSMP 9.3)

- Level of Effectiveness: The utility metrics listed in Appendix I pertain to different overseeing departments within the City, and the coordination between these different Departments in measuring/monitoring various metrics and sharing results has been effective in ensuring the SSMP goals have been met.
- Recommendations:
    - Update Appendix I and modify it to include document location, responsible person, and review frequency. This was also recommended during the previous audit but has not been completed.
    - Identify the metrics that correspond with specific elements of the SSMP and develop numerical goal ranges so the data currently collected and monitored by the City can be used as performance indicators (PIs) to quantitatively monitor SSMP effectiveness. The ultimate measure of SSMP effectiveness is the limiting of SSOs. However, setting goals for activities related to various SSMP elements and measuring performance against those goals, will help determine how success in those elements, relates to the overall effectiveness of limiting SSOs. Associating metrics with specific SSMP elements will allow for direct assessment of those elements and provide consistency in their evaluation in future audits. **Appendix 7.2** of this internal audit contains a list of PI and associates each one with a SSMP element, a suggested audit frequency, and a person responsible for monitoring that PI. A sample Performance Indicator Assessment Form is included in **Appendix 7.3** of this internal audit. Performance Indicator Assessment Forms can be developed for each metric and assessed periodically by the person responsible, according to the suggested audit frequency for that metric. At the time of the next internal SSMP audit, the completed Performance Indicator Assessment Forms can be used to evaluate the effectiveness of SSMP elements and included as attachments to the audit. This was also recommended during the previous audit but has not been implemented.
    - Consider tracking additional metrics targeted at measuring the effectiveness of SSMP elements that do not currently have metrics associated with them. A list of potential performance measures listed by SSMP element is included in **Appendix 7.2** of this internal audit. This was also recommended during the previous audit but has not been implemented.

Metrics to Assess Preventative Maintenance Program (SSMP 9.4)

- Level of Effectiveness: The City's current utility metrics Appendix I defines the frequency and type of utility metric that is being tracked to measure SSMP effectiveness. This is effective because it allows the city to monitor performance of particular activities and compare against SSO trends to determined data

correlations. These metrics do not all have associated goals or targets, however, which makes it hard to track whether the activity is meeting the intended result.

- Recommendations: As discussed in the previous section, use data collected in SSMP Appendix I as a reference, and develop goals for metrics that track preventative maintenance activities and identify the person/position responsible for tracking data against those goals. See **Appendix 7.2** for a list of potential performance indicators for preventative maintenance activities with responsible parties. This was also recommended during the previous audit but has not been implemented

SSMP Performance Monitoring and Update Process (SSMP 9.5)

- Level of Effectiveness: Individual staff oversee various SSMP element performance indicators. The City tracks all revisions/updates with the SSMP using a revision log that is maintained by the LRO. The log is effective documenting changes to the SSMP and encourages the use of the SSMP as a living document.

- Recommendations: No modifications recommended at this time.

SSO Trends – Frequency, Location and Volume (SSMP 9.6)

- Level of Effectiveness: The City tracks a comprehensive list of metrics that are included in Appendix I and the City's Performance Reports. This allows the City to quickly identify and respond to changing trends in SSOs over time.

- Recommendations: Using the data collected in SSMP Appendix I as a reference, set performance goals for the metrics used to illustrate SSO trends. See **Appendix 7.2** for a list of potential performance indicators related to SSO trends. This was also recommended during the previous audit but has not been implemented.

Table 18. Current Performance Measures to Monitor SSO Trends

Performance Measure	Unit	Target	Source
SSOs - Total number, mains and laterals	Number	-	A, B
SSOs - Total volume, mains and laterals	Gal	-	A, B
SSOs - Total volume recovered	Gal	-	B
SSOs - Total number of wet weather	Number	-	A, B
SSOs - Total volume of wet weather	Gal	-	A, B
SSOs - % of spills caused by FOG (main)	%	-	A, B
SSOs - % of spills caused by roots (main)	%	-	A, B
SSOs - % of spills caused by Vandalism (main)	%	-	A, B
SSOs - caused by LS failures	Number	-	A, B
SSOs - caused by pipe failures	Number	-	A, B
SSOs - % of spill volume caused by FOG (lateral)	%	-	A, B
SSOs - % of spill volume caused by roots (lateral)	%	-	A, B
SSOs - % of spill volume caused by Vandalism (lateral)	%	-	A, B
Customer service requests per year	Number	-	A, B
Sewer odor complaints	Number	-	A, B
Flooding claims per year	Number	-	A, B
Cost of flooding claims per year	$	-	A, B
SSO – Repeats within two years	Number	0	B, C
SSOs - Category 1	Number	0	C, D
SSOs / 100 mi pipe / year - Category 2	Number	2.0	C
SSOs / 100 mi pipe / year - Mainline	Number	0.6	C
SSOs / 100 mi pipe / year - Lateral	Number	8.0	C

A = SSMP section 9.6
B = SSMP Appendix I
C = WW Collections KPIs
D = Program / Performance Reports

5.10 SSMP Program Audits

5.10.1 Compliance

Table 19. Compliance with SSS WDR D.13.x – SSMP Program Audits

SSMP Requirement	Compliance	Deficiencies
x Conduct periodic audits	Yes	-

5.10.2 Effectiveness of SSMP Elements and Recommended Modifications

Audit Procedures, Roles, and Responsibilities (SSMP 10.2)

- Level of Effectiveness: The City conducts an internal audit biennially to continually measure the effectiveness of the SSMP primarily through evaluating system metrics, performance measures, and reduce SSOs by improving SSMP procedures to better respond to new SSO trends. In addition the audit evaluates the City's compliance with SSMP requirements, particularly the amended MRP requirements that were formalized in September 2013. The City developed an audit form as a template to record information produced during the internal SSMP audits. This form is included in SSMP Appendix J-2. The previous audit identified many areas of improvement which the City responded and acted on. Some of these recommended improvements were excluded from this audit based on discussions with the City that eliminated the need for them. Others are considered standing, and should still be implemented by the City. Generally the internal audits implemented by the City have been effective in improving the SSMP and turning it into a living document that that is current, practical, and useful for the City.
- Recommendations:
    - Post the previous SSMP internal audit (FY 11/12 and FY 12/13) and this SSMP internal audit to the City website.
    - Post the most recent City council SSMP recertification (from 2014) the City website.
    - Schedule the next internal SSMP audit for July-August of 2017
    - Revise Appendix J-1 to reflect recommendations for review of performance indicators (i.e., metrics associated with specific SSMP elements and the associated timelines). This was also recommended during the previous audit but has not been implemented.

      Revise Appendix J-2 (audit form) to provide areas in the tables for each SSMP element to conduct an assessment of both SSMP compliance to Regional Board requirements, and effectiveness of individual SSMP elements. Remove Kim Spears and IWS from the certification of audit table. This was also recommended during the previous audit but has not been implemented.

SSMP Program Modification/Update Process (SSMP 10.3)

- Level of Effectiveness: The City developed a program for monitoring, reviewing sewer performance metrics and the effectiveness of SSMP elements on a biennial basis. Based on the results of the SSMP audits, the Wastewater Utility Manager is assigned to initiate/direct corrective actions to respond to deficiencies and enhancements identified in the audit. As determined in the City's SSMP revision log, the City has been prompt in responding to audit and continually strives to implement improvements.

- Recommendations:
    - Update the SSMP revision log and post on the website.
    - Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated

with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes. This was also recommended during the previous audit but has not been implemented.

5.11 Communication Program

5.11.1 Compliance

Table 20. Compliance with SSS WDR D.13.xi – Communications Program

SSMP Requirement	Compliance	Deficiencies
xi(a) Communicate on a regular basis with the public and tributary/satellite systems regarding SSMP	Yes	-

5.11.2 Effectiveness of SSMP Elements and Recommended Modifications

Internal Communication – Staff, Utility Commission, and City Council (SSMP 11.2)

- Level of Effectiveness: The WWC has used PowerPoint presentations as a resource to describe the purpose of the SSMP and summarize SSS WDR requirements to the City council and City staff. These presentations are attached to the SSMP website.

- Recommendations:
  - As of September 2013 the State Water board amended the MRP of the SSS WDR and the City produced a training PowerPoint to City staff, council, and stakeholders regarding the update. Attach the PowerPoint to the SSMP website.

Stakeholder Communication – Residential, Commercial and Industrial (SSMP 11.3)

- Level of Effectiveness: The City communicates regularly with the public and stakeholders via monthly newsletters entitled "EU Today" that includes items regarding sewer utilities. This newsletter is presented online and through bill inserts. A sample newsletter is included in Appendix K of the SSMP. In addition, the City specifically communicates FOG related items to the community via FOG outreach program over TV ads, flyers, direct mail, and site visits to FSEs. The WWC registered approximately 40 percent more service calls during this audit period than during the last. As the level of SSOs has only increased slightly since the previous audit period, the increase in service calls may indicate the effectiveness of City outreach programs in encouraging the public to communicate with WWC their concerns or observations about any sewer utility issues.

- Recommendations:
  - Update SSMP Appendix K-4 with FY 13-15 EU marketing Plan budget & spending

Tributary/Satellite Communication (11.4)

- Level of Effectiveness: The City routinely communicates with their satellite partners and has three formal agreements in place that include:
  - The joint exercise of power agreement for the SPWA
  - The agreement regarding the operation of and use of South Placer Regional Wastewater Facilities
  - The funding agreement relating to the South Placer Regional Wastewater Facilities
  - Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).

- Recommendations:
  - Add the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD) as attachment K-7 and modify the SSMP to mention it.
  - Modify SSMP 11.4 to include the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).

SECTION 6 Audit Summary

Table 21. Summary of SSMP Compliance Deficiencies

SSMP Requirement	Compliance	Deficiencies
vi(f) Program to ensure containment of SSO to prevent discharge and minimize adverse impacts on the environment	No	SSOERP does not meet certain water quality monitoring requirements of the amended MRP document.
vii(e) Authority to inspect and enforce FOG ordinance	No	The City does have the authority to inspect/enforce FOG ordinance but no inspection records were produced for the Audit period.

Table 22. Summary of Audit Recommendations

SSMP Section	Recommendation	Suggested Timeline for Completion
2.1	Modify Appendix B-1: Add Wastewater Collections Supervisor Dan Pruden. Update City Council positions and add phone numbers (Mayor Carol Garcia, Vice Mayor Susan Rohan, City Attorney Robert Schmitt). Update Commissioners and phone numbers: Chair Blandon Granger, Vice Chair John Speight. Update Liaisons and phone numbers for EU Director Richard Plecker, and Secretary Cheryl Hammond. Update Principal EU engineer and phone number for Jason Shykowski. Update Administrative Analyst and phone number for Maurice Chaney.	
2.2	Modify Figure 2-1: Modify the Industrial Waste Specialist category and remove the FOG Control Program from the description due to the FOG program oversight transitioning from IWS to WWC in 2016. Add the Fog Control Program description to the Wastewater Collection Office Assistant category.	
2.2	Modify SSMP Section 2.2: Modify the general position description and SSMP responsibilities under the Lab/Industrial Waste Supervisor, Specialist, and Technician and remove the FOG Control Program or inspection program from those descriptions.	
2.2	Move the FOG Control Program SSMP responsibility into the WWC Superintendent category and the WWC Office Assistant category.	
2.3	Modify Figure 2-2 Flowchart: Update the WWC Divisions overflow emergency response plan chain of communication to match existing operations, whereby WWTP and LS staff and SCADA alerts should always call the 24 hour call center instead of WWC service staff. In addition, modify the Wastewater Admin cell and rename the position as Office Assistant.	
2.3	Modify Appendix F-1 Flowchart: Follow the same recommendations written above.	
3.7	Update SSMP section 3.7 to include the Wastewater Service Contract and Operating Agreement between the City, SASD, and SRCSD.	
4.2	Include the Mapping Update Policy Document as an appendix to the SSMP and post it to the City's SSMP website page.	
4.3	Update SSMP Section 4.3 Overview with updated statistics about the City's service area, number of customers, miles of main, number of services, and number of lift stations. Also update the number of WWC employees.	
4.4	Document the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections, etc.), conducting a risk assessment to determine	

	the assets to be renewed, and developing the R&R plan with its associated data. This was also included during the previous audit but has not been completed.	
4.4	Document the upcoming transition in responsibilities between WWC and EU Engineering in developing and operating the R&R plan by describing it in the SSMP. Confirm that field observations from WWC field crew are accounted for by EU Engineering when conducting risk assessment.	
4.5	Augment the ongoing training program by documenting that WWC staff have demonstrated the ability to operate a major piece of equipment (i.e., combo Vactor unit) in accordance with available SOPs to a supervisor before using it for the first time in the field and at a specified frequency (i.e., annually or if equipment is upgraded). The document would need to list a piece of equipment, the name of the journeyman, supervisor, signatures, name of SOP if used, and date.	
4.5	Modify SSMP Section 4.5 to include training on SSOERP.	
6.3	The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station. This list should also be updated to incorporate new lift stations at Washington Blvd and 7600 Sierra College. This was also recommended during the previous audit but has not been implemented.	
6.3	Modify SSOERP Section IV Traffic Control (WWC Personnel) to require WWC Personnel to implement traffic control in every situation where WWC personnel may be at risk of vehicular impact in accordance with MUTCD (part of Caltrans Work Area Traffic Control Handbook). It is recommended that WWC produce several standard TCPs (Traffic Control Plan) to match existing traffic conditions or type of roadway (i.e., arterial, residential, etc.).	
6.3	Modify SSOERP Section V Correct Cause (WWC Personnel) to include a discussion of whether a root-caused SSO could be classified as a PLSD if the City defines a spill cause as the entry point of the root and whether that location is on lower (city) or upper lateral side (private). Include recommendations to provide good documentation of the decision with photographic evidence and a logical narrative.	
6.7	Modify SSOERP Appendix A – Start Time Documentation Policy to include the following WWC standard field practice: If the start time cannot be set based on witnesses and if there is evidence of a spill traveling a farther distance than 15 minutes, then the field crew estimates the new start time and may try to recreate the spill (with clean water) to estimate volumes.	
6.7	Modify SSOERP Appendix C – Water Quality Sampling Procedures to the meet the	

	requirements of the amended MRP. • Account for spill travel time in the surface water and scenarios where monitoring may not be possible to safety concerns or access restrictions once an SSO has stopped. This may be estimated by dropping floatable debris, for instance, and measuring the time required to travel a certain distance. • Expand minimum sampling parameters to include appropriate bacterial indicators that have been specifically listed in the beneficial uses of the City's waterways or more broadly listed by the regional Basin Plan.	
6.7	Modify SSOERP Appendix C – Water Quality Sampling Procedures to include a list of all of the required equipment that the employee would need to conduct proper sampling.	
7.3	Modify SSMP Section 7.3 to reflect the change in responsibilities from IWS to WWC.	
7.4	Modify SSMP Section 7.4 to reflect the change in responsibilities from IWS to WWC	
7.6	Modify SSMP Section 7.6 to reflect the change in responsibilities from IWS to WWC	
7.7	Modify SSMP Section 7.7 to reflect the change in oversight from IWS to WWC	
7.7	Document all FSE inspections. Develop a standard FSE inspection form which lists individual elements the FOG WDP permittee is required to maintain in a logical order for the inspector to follow. At a minimum, the inspector should enter the FSE, check the grease removal device, conduct a FOG concentration sample, request and view cleaning/hauling records and associated BMPs. After filling out the inspection form to document the whole procedure, transfer the results of the inspection form into a database or spreadsheet by which WWC can track compliance of the multiple required elements under the permit. Follow up with FSEs as required and formally document the process. Attach a blank version of the inspection form as an appendix in the SSMP.	
7.8	Modify the EU Engineering GIS database to include hotspot assets and FSEs and add them as layers to the maps that WWC receives.	
7.8	Modify SSMP Section 7.8 to describe the process of how pipelines are added to the hot spot cleaning schedule, and remove mention of annual sewer line maintenance work orders	
7.9	Modify SSMP Section 7.9 to reflect the change in responsibilities from IWS to WWC.	
8.2	Modify Appendix I-1 of the SSMP to indicate that the system evaluation and capacity assurance plan will be reviewed and updated every 10 years.	
9.2	Update Appendix I on the City website with information from FY 13/14 and FY 14/15.	
9.3	Update Appendix I and modify it to include document location, responsible person, and review frequency. This was also recommended during the previous audit but has not been	

	completed.	
9.3	Identify the metrics that correspond with specific elements of the SSMP and develop numerical goal ranges so the data currently collected and monitored by the City can be used as performance indicators (PIs) to quantitatively monitor SSMP effectiveness. The ultimate measure of SSMP effectiveness is the limiting of SSOs. However, setting goals for activities related to various SSMP elements and measuring performance against those goals, will help determine how success in those elements, relates to the overall effectiveness of limiting SSOs. Associating metrics with specific SSMP elements will allow for direct assessment of those elements and provide consistency in their evaluation in future audits. **Appendix 7.2** of this internal audit contains a list of PI and associates each one with a SSMP element, a suggested audit frequency, and a person responsible for monitoring that PI. A sample Performance Indicator Assessment Form is included in **Appendix 7.3** of this internal audit. Performance Indicator Assessment Forms can be developed for each metric and assessed periodically by the person responsible, according to the suggested audit frequency for that metric. At the time of the next internal SSMP audit, the completed Performance Indicator Assessment Forms can be used to evaluate the effectiveness of SSMP elements and included as attachments to the audit. This was also recommended during the previous audit but has not been implemented.	
9.3	Consider tracking additional metrics targeted at measuring the effectiveness of SSMP elements that do not currently have metrics associated with them. A list of potential performance measures listed by SSMP element is included in **Appendix 7.2** of this internal audit. This was also recommended during the previous audit but has not been implemented.	
9.4	As discussed in the previous section, use data collected in SSMP Appendix I as a reference, and develop goals for metrics that track preventative maintenance activities and identify the person/position responsible for tracking data against those goals. See **Appendix 7.2** for a list of potential performance indicators for preventative maintenance activities with responsible parties. This was also recommended during the previous audit but has not been implemented	
9.6	Using the data collected in SSMP Appendix I as a reference, set performance goals for the metrics used to illustrate SSO trends. See **Appendix 7.2** for a list of potential performance indicators related to SSO trends. This was also recommended during the previous audit but has not been implemented.	
10.2	Post the previous SSMP internal audit (FY 11/12 and FY 12/13) and this SSMP internal audit to the City website.	
10.2	Post the most recent City council SSMP recertification (from 2014) the City website.	
10.2	Schedule the next internal SSMP audit for July-August of 2017	

10.2	Revise Appendix J-1 to reflect recommendations for review of performance indicators (i.e., metrics associated with specific SSMP elements and the associated timelines). This was also recommended during the previous audit but has not been implemented. Revise Appendix J-2 (audit form) to provide areas in the tables for each SSMP element to conduct an assessment of both SSMP compliance to Regional Board requirements, and effectiveness of individual SSMP elements. Remove Kim Spears and IWS from the certification of audit table. This was also recommended during the previous audit but has not been implemented.	
10.3	Update the SSMP revision log and post on the website.	
10.3	Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes. This was also recommended during the previous audit but has not been implemented.	
11.2	As of September 2013 the State Water board amended the MRP of the SSS WDR and the City produced a training PowerPoint to City staff, council, and stakeholders regarding the update. Attach the PowerPoint to the SSMP website.	
11.3	Update SSMP Appendix K-4 with FY 13-15 EU marketing Plan budget & spending	
11.4	Add the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD) as attachment K-7 and modify the SSMP to mention it.	
11.4	Modify SSMP 11.4 to include the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).	

SECTION 7 Appendices

7.1 Appendix – Historical SSO Data

7.2 Appendix – Performance Indicators

7.3 Appendix – Sample Performance Indicator Assessment Form

7.1 Appendix – Historical SSO Data

Dated: FY 2013 - 2015

Date of SSO	Address of SSO	Spill Type	Spill Vol (Gal)	Spill Vol Recovered (Gal)	Spill Recovery %	Spill Cause
7/23/13	618 Lassen Way	Category 3	5	5	100%	Root intrusion
8/29/13	2012 Katherine Place	Category 3	5	5	100%	Root intrusion
8/29/13	605 Oak Street	Category 3	50	50	100%	Root intrusion
9/9/13	149 South Lincoln St	Category 3	2	1	50%	Root Intrusion
10/4/13	311 Evelyn Avenue	Category 3	8	8	100%	Debris-Rags
9/17/13	801 Main Street	Category 3	9	8	89%	Root Intrusion
10/11/13	116 Berry Street	Category 3	10	9	90%	Root Intrusion
10/11/13	528 Royer Street	Category 3	15	15	100%	Root Intrusion
10/11/13	509 Royer St	Category 3	3	3	100%	Root Intrusion
11/6/13	348 W Duranta	Category 3	3	1	33%	Root Intrusion
11/6/13	1004 Crete Way	Category 3	1	1	100%	Root Intrusion
11/6/13	109 Keehner Ave	Category 3	35	35	100%	Root Intrusion
11/8/13	308 Folsom Rd	Category 3	80	75	94%	Debris-General
11/12/13	Roseville St.	Category 3	25	25	100%	Grease Deposition (FOG)
11/6/13	900 Herbert Street	Category 3	5	1	20%	Root Intrusion
11/6/13	503 Sixth Street	Category 3	10	10	100%	Root Intrusion
11/13/13	312 Folsom Rd.	Category 3	10	10	100%	Root Intrusion
11/14/13	SMH C04-356	Category 3	10	10	100%	Grease Deposition (FOG)
12/16/13	214 Cedar	Category 3	2	1	50%	Root Intrusion
12/16/13	Folsom, Cross Street Sutter	Category 3	26	22	85%	Root Intrusion
12/16/13	900 Atlantic St.	Category 3	5	5	100%	Root Intrusion
12/16/13	335 Grove St.	Category 3	1	1	100%	Root Intrusion
12/17/13	607 Windsor	Category 3	5	5	100%	Root Intrusion
12/18/13	168 Donner	Category 3	5	5	100%	Grease Deposition (FOG)
12/17/13	503 Tahoe	Category 3	50	45	90%	Root Intrusion
1/16/14	153 Nevada	Category 3	2	1	50%	Root Intrusion
1/3/14	1044 Magnolia Wy	Category 3	2	2	100%	Root Intrusion
1/15/14	1207 Meadow Lane	Category 3	5	5	100%	Root Intrusion
1/9/14	620 Dawnridge	Category 3	5	5	100%	Root Intrusion

1/14/14	358 Circuit Dr.	Category 3	1	1	100%	Non-Dispersables
1/14/14	806 Joe Anne Lane	Category 3	5	5	100%	Debris-Rags
1/17/14	213 Church St.	Category 3	3	3	100%	Root Intrusion
1/29/14	358 Circuit	Category 3	6	6	100%	Other (specify below)
2/14/14	820 Shearer	Category 3	5	5	100%	Root Intrusion
2/24/14	730 Elefa	Category 3	570	570	100%	Root Intrusion
2/25/14	518 Dudley	Category 3	8	7	88%	Root Intrusion
4/10/14	311 Vernon St	Category 3	30	29	97%	Debris-Rags
4/14/14	211 S. Lincoln	Category 3	1	1	100%	Root Intrusion
4/16/14	1620 Santa Clara	Category 3	15	14	93%	Debris-Rags
4/25/14	204 Sutter Ave.	Category 3	5	4	80%	Root Intrusion
5/15/14	608 Encinal Ave.	Category 3	6	6	100%	Pipe Structural Problem/Failure
5/21/14	1498 Deerfield	Category 3	6	5	83%	Debris-Rags
5/23/14	200 N. Grant	Category 3	5	0	0%	Root Intrusion
6/20/14	1020 Church St	Category 3	5	5	100%	Debris-Rags
6/30/14	2001 Polley	Category 3	30	0	0%	Debris-Rags
7/1/14	1007 Hillcrest	Category 3	80	75	94%	Grease Deposition (FOG)
7/10/14	1809 Piedmont	Category 3	8	5	63%	Root Intrusion
7/15/14	1133 Smith ln	Category 3	14	4	29%	Root Intrusion
8/26/14	1707 Sunningdale Dr	Category 3	10	10	100%	Root Intrusion
8/28/14	408 Garden Breeze Ct	Category 3	3	3	100%	Root Intrusion
9/24/14	201 N. Grant	Category 3	20	19	95%	Root Intrusion
9/25/14	1308 Plymouth Ct.	Category 3	100	100	100%	Debris-Rags
9/25/14	1007 Chisum Ct	Category 3	4	4	100%	Root Intrusion
9/25/14	1501 Cardinal Wy.	Category 3	2	2	100%	Root Intrusion
10/7/14	1007 Chisum Ct.	Category 3	2	1	50%	Debris from Construction
10/7/14	2588 McCloud	Category 3	77	77	100%	Root Intrusion
10/8/14	1789 Vista Creek	Category 3	2	1	50%	Pipe Structural Problem/Failure
10/21/14	115 Campo St.	Category 3	5	4	80%	Root Intrusion
10/29/14	7164 Marblethorpe	Category 3	36	11	31%	Root Intrusion

11/17/14	318 Earl	Category 3	18	18	100%	Root Intrusion
10/22/14	7040 Petersborough	Category 3	1	1	100%	Root Intrusion
11/20/14	319 Clinton	Category 3	5	4	80%	Root Intrusion
12/15/14	1198 Ravine View	Category 3	12	1	8%	Root Intrusion
12/11/14	1025 Douglas	Category 3	26	26	100%	Root Intrusion
12/5/14	312 B St.	Category 3	623	623	100%	Grease Deposition (FOG)
1/13/15	7337 Pineschi	Category 3	5	5	100%	Root Intrusion
12/23/14	97 Vernon St.	Category 3	22	19	86%	Root Intrusion
12/18/14	915 Main St	Category 3	17	17	100%	Root Intrusion
12/24/14	1748 Chilton Dr	Category 3	3	3	100%	Root Intrusion
1/14/15	212 C St.	Category 3	10	7	70%	Root Intrusion
1/14/15	1012 Melrose	Category 3	9	7	78%	Root Intrusion
2/23/15	1106 Windermere Av, Roseville Ca.	Category 3	10	8	80%	Root Intrusion
1/28/15	1211 Donahue	Category 3	10	10	100%	Pipe Structural Problem/Failure
2/10/15	504 Diamond Bar	Category 3	3	3	100%	Root Intrusion
2/23/15	1409 Oakmont	Category 3	11	11	100%	Root Intrusion
3/4/15	1212 Stiney Point	Category 3	1	1	100%	Root Intrusion
2/25/15	1044 Treasure Ln.	Category 3	2	2	100%	Debris-Rags
3/27/15	1700 Hiawatha	Category 3	21	5	24%	Non-Dispersables
3/13/15	605 Mayfair	Category 3	12	10	83%	Root Intrusion
4/16/15	114 Vernon St.	Category 3	43	43	100%	Root Intrusion
3/26/15	311 Main St	Category 3	17	16	94%	Pipe Structural Problem/Failure
4/16/15	332 Irene	Category 3	5	3	60%	Root Intrusion
4/16/15	313 Coranado	Category 3	10	10	100%	Pipe Structural Problem/Failure
5/21/15	213 Irene	Category 3	5	5	100%	Root Intrusion
5/13/15	411 Loretto Dr	Category 3	1	1	100%	Root Intrusion
6/3/15	214 Coronado Ave	Category 3	5	0	0%	Pipe Structural Problem/Failure
6/19/15	902 Avalon Ct	Category 3	5	5	100%	Root Intrusion
6/15/15	1415 McBride	Category 3	15	15	100%	Root Intrusion
7/9/15	2801 Courtside	Category 3	3	1	33%	Non-Dispersables

7.2 Appendix – Performance Indicators

SSS WDR Element	SSS WDR Ref.	Description	Performance Indicator	Unit	Target	City SSMP (section)	Utility Metrics (SSMP Appendix I)	WW Collections KPI.doc	Program / Performance Report FY12/13	Strategic Plan Data FY12/13.xls	Performance Metrics.xls	Suggested Audit Frequency	Suggested Responsible Party
Organization	D.ii.c	Chain of communication	Average response time to customer inquiry	Minutes	40		Data	40	-	-	-	Quarterly	Office Assistant
			Total customer service requests	Number	0	(9.6)	Data	-	-	-	-	Quarterly	Office Assistant
			Total sewer odor complaints	Number	0	(9.6)	Data	-	-	-	-	Quarterly	Office Assistant
			Average rating in feeback survey card	Number	5	-	Data	-	-	-	-	Quarterly	Office Assistant
	D.iv.b	PM activites	Manholes - cleaned & visually inspected per year	Number		(9.4)	-	-	-	-	-	Quarterly	WWC Supervisor
			Sewer main - flushed per year	Miles	250	(9.4)	Data	250	250	250	-	Quarterly	WWC Supervisor
			Service laterals - cleaned per year	Miles	8	-	-	-	8	-	-	Quarterly	WWC Supervisor
			Service laterals - mechancially cleaned (eeled) per year	Miles	8	(9.4)	-	-	-	8	-	Quarterly	WWC Supervisor
			Working staff time to PM program	%	80	-	-	-	80	-	-	Quarterly	WW Superindendent
			Number of customer accounts per wastewater employee	Number	561	(9.4)	Data	-	-	-	-	Quarterly	WW Superindendent
			Average cost of hydro cleaning	$/ lf	0.36	-	Data	-	-	-	-	Annually	WW Superindendent
			Average cost of sewer mechanical cleaning	$/lf	1.6	(9.4)	Data	-	-	-	-	Annually	WW Superindendent
	D.iv.c	R&R plan	Manholes - rehabilitated (i.e., lined with CIPP)	Number	25	-	-	-	25	-	-	Annually	Rehabiliation Manger
			Sewer main - CCTV inspected per year	Miles	30	(9.4)	Data	30	30	30	-	Quarterly	WWC Supervisor
			Service laterals - CCTV inspected per year	Miles	16	-	Data	-	8	16	-	Quarterly	WWC Supervisor
			Service laterals - rehabilitated per year	Number	50	(9.4)	-	50	50	50	-	Quarterly	WW Superindendent
			Cleanouts - installed per year	Number	100	-	-	100	100	75	-	Quarterly	WWC Supervisor
			Total miles rehabed or replaced per year (main)	Miles	5	(9.6)	Data	-	-	-	-	Annually	Rehabiliation Manger
			Total miles rehabed or replaced per year (lateral)	Miles	0.25	(9.6)	Data	-	-	-	-	Annually	Rehabiliation Manger
			Annual capital budget for sewer rehab/replacement	$M	1.8	-	Data	-	-	-	-	Annually	Rehabiliation Manger
			Average cost of CCTV (main)	$/lf	0.53	(9.4)	Data	-	-	-	-	Annually	WW Superindendent
			Average cost of CCTV (lateral)	$/lf	1.34	-	Data	-	-	-	-	Annually	WW Superindendent
	D.iv.d	Training	On-the-Job accidents	Number	0	-	-	-	0	0	-	Quarterly	Safety Manager
	D.iv.e	Critical Parts	% of required number of identified critical parts are stocked	%	100	-	-	-	-	-	-	Annually	Materials Technician
Design	D.v.a & b	Construction	% of new sewer main construction accepted vs. inspected	%	100	(9.6)	Data	-	-	-	-	Annually	GIS Manager
			% of new sewer lateral construction accepted vs. inspected	%	100	(9.6)	Data	-	-	-	-	Annually	GIS Manager
OERP	D.vi.a	Notification	Average response time to SSO	Minutes	40	-	Data	-	-	-	-	Quarterly	WWC Supervisor
	D.vi.b	SSO response	Average SSO duration (main)	Minutes	40	-	-	-	-	-	-	Quarterly	WWC Supervisor
			Average SSO duration (lateral)	Minutes	40	-	-	-	-	-	-	Quarterly	WWC Supervisor
FOG	D.vii.a	Public education	FOG public education outreach program events per year	Number	4	-	-	-	-	-	-	Annually	Administrative Analyst
	D.vii.b	FOG disposal	Number of curbside FOG pickups per year	Number	25	-	-	-	-	-	-	Annually	Refuse Division
			% of CCTV inspections with grease observations (DAGS, >20%)	%	5	-	-	-	-	-	-	Quarterly	WWC Supervisor
	D.vii.d	BMPs & Devices	% of total FSEs with grease removal devices or waiver/variance	%	100	-	-	-	-	-	-	Annually	WW Superindendent
			% of total FSEs with a variance	%	5	-	-	-	-	-	-	Annually	WW Superindendent
	D.vii.e	FOG inspections	FSE FOG inspections per year	Number	319	-	-	-	-	-	-	Quarterly	WW Superindendent
	D.vii.f	Hot Spots	% of hot spot pipes CCTV inspected each year	%	100	-	-	-	-	-	-	Annually	WW Superindendent
			Number of spills caused by hot spots	Number	0	-	-	-	-	-	-	Quarterly	WW Superindendent
			Volume of spill volume caused hot spots	Gal	0	-	-	-	-	-	-	Quarterly	WW Superindendent
SECAP	D.viii.a	Evaluation	Frequency for capacity assurance evaluation (hydraulic model)	Years	10	App I	-	-	-	-	-	Annually	EU Engineering
MMM	D.ix.e	SSO trends	Total number of SSOs, mains and laterals	Number	76	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Total SSO volume, mains and laterals	Gal	2000	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of total SSO volume recovered	%	100	-	Data	-	-	-	-	Quarterly	WW Superindendent
			Total number of wet weather SSOs	Number	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Total volume of wet weather SSOs	Gal	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSOs caused by FOG (main)	%	1	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSOs caused by roots (main)	%	70	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSOs caused by Vandalism (main)	%	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Number of SSOs caused by LS failures	Number	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Number of SSOs caused by pipe failures	Number	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSO volume caused by FOG (lateral)	%	10	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSO volume caused by roots (lateral)	%	75	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			% of SSO volume caused by Vandalism (lateral)	%	0	(9.6)	Data	-	-	-	-	Quarterly	WW Superindendent
			Repeat SSOs within two years	Number	0	(9.6)	Data	0	-	-	-	Quarterly	WW Superindendent
			Category 1 SSOs	Number	0	-	-	0	0	-	-	Quarterly	WW Superindendent
			Category 2 SSOs	Number	6	-	-	-	-	-	-	Quarterly	WW Superindendent
			SSOs / 100 mi pipe / year - Category 3	Number	2.0	-	-	2.0	-	-	-	Quarterly	WW Superindendent
			SSOs / 100 mi pipe / year - Lateral	Number	15.0	-	-	8.0	-	-	8	Quarterly	WW Superindendent
			SSOs / 100 mi pipe / year - Mainline	Number	0.6	-	-	0.6	-	-	0.6	Quarterly	WW Superindendent
			Flooding claims per year	Number	0	(9.6)	Data	-	-	-	-	Annually	WW Superindendent
			Total cost of claims per year	$	0	(9.6)	Data	-	-	-	-	Annually	WW Superindendent

Legend

Green Text	Indicates the goal for the respective performance measure as stated in the associated document.
"Data"	Indicates that is recorded and tracked but no goal is defined in the associated document.

7.3 Appendix – Sample Performance Indicator Assessment Form

Goal:	**MRP (FY 2014 / 2015)**
Responsible Person (RP):	WWC Superintendent

Description of Performance Indicator(s) (PIs):

The State Water Board has recently concluded that the existing Monitoring and Reporting Program must be amended to remain adequate enough to advance the Sanitary Sewer Overflow Reduction Program objectives, assess compliance, and enforce the requirements of the Sanitary Sewer Systems Waste Discharge Requirements. The amended MRP will become effective on September 9, 2013 concurrent with the routine bimonthly CIWQS maintenance release. The Wastewater Collection Division is responsible for submitting, signing, and certifying all reports required by the SSS WDRs and the amended MRP order. The PIs listed below track the completion of tasks necessary for the City to remain compliant with the SSS WDRs.

PIs and Data Analysis Methods:

1. *Completion of unpopulated fields in revised "Collection System Questionnaire"*
   Discussion & Scoring Criteria: The City has three (3) months after September 9, 2013 to complete all unpopulated fields in the revised "Collection System Questionnaire" before the CIWQS locks you out from all reporting. After the questionnaire is completed, the system will default back to the annual update requirement and lock you out from all reporting only if the questionnaire is not updated at least annually.

2. *Update of OERP section in SSMP*
   Discussion & Scoring Criteria: The Overflow and Emergency Response Plan section of the City's SSMP must be updated in accordance with the amended MRP by January 21 2014, when a board review of the SSMP will take place.

PI	Exceeding Goal?	Met Goal?		Below Goal?
1	All unpopulated fields completed by December 9, 2013.	N/A	N/A	All or some of the unpopulated fields not completed by December 9, 2013.
2	OERP section fully updated in SSMP before review.	N/A	N/A	OERP section never, or only partially, updated before review.

Performance Tracking		
PI	**Measured Value**	**Performance Assessment Comments**
1		
2		

Recommendations for Programmatic or SSMP Updates
PI 1 – Completion of unpopulated fields in revised "Collection System Questionnaire" Recommendation: **PI 2 – Update of OERP section in SSMP** Recommendation:

Signature of Responsible Person: (sign when complete)	Date:

Appendix 10-4

SSPM Audit Fiscal Years 15/16, 16/17 and 17/18

CITY OF ROSEVILLE
Sewer System Management Plan (SSMP)
Three-Year Audit for FY 15/16 – FY 17/18

Date: September 19

Prepared by: Michael Fisher, P.E., Water Works Engineers
Tim Lewis, P.E., Water Works Engineers
Mohsen Karbakhsh, E.I.T., Water Works Engineers

Assisted by: Chris Bracco, City Wastewater Superintendent
Dan Pruden, City Wastewater Supervisor

Table of Contents

SECTION 1 Audit Objectives 3
SECTION 2 Agency Background / System Information 4
2.1 Review of Last SSMP Audit 5
2.2 Review of FY 15/16, FY 16/17, and FY 17/18 11
SECTION 3 SSO Trends 11
3.1 Historical SSO Data 11
3.2 Performance Measures 15
SECTION 4 Audit Procedure 16
4.1 Review of SSMP Compliance 16
4.2 Review of SSMP Effectiveness 16
SECTION 5 Audit of SSMP Elements 17
5.1 Goals 17
5.2 Organization 17
5.3 Legal Authority 19
5.4 Operation and Maintenance Program 21
5.5 Design and Performance Provisions 24
5.6 Overflow Emergency Response Plan 25
5.7 FOG Control Program 28
5.8 System Evaluation and Capacity Assurance Plan 30
5.9 Monitoring, Measurement, and Program Modifications 32
5.10 SSMP Program Audits 36
5.11 Communication Program 37
SECTION 6 Audit Summary 38
SECTION 7 Appendices 43
7.1 Appendix – Historical SSO Data ..... A
7.2 Appendix – SSO Data Comparison Charts ..... B
7.3 Appendix – Structural SSO GIS Mapping C

7.4 Appendix – Key Performance Indicators ..... D
7.5 Appendix – Change Log Example ..... E

List of Tables

Table 1 – Overview of Collection System 4
Table 2 – Summary of Findings from the Last SSMP Internal Audit 5
Table 3 – CIWQS and City SSO Historic Data 11
Table 4 – Regional Comparison of SSO Data 13
Table 5 – Leading Causes of SSOs in FY15-18 (results from FY13-15 in parenthesis) 14
Table 6 – Performance Measures 15
Table 7 – Compliance with SSS WDR D.13.i - Goals 17
Table 8 – Compliance with SSS WDR D.13.ii - Organization 17
Table 9 – Compliance with SSS WDR D.13.iii – Legal Authority 19
Table 10 – Compliance with SSS WDR D.13.iv – O&M Program 21
Table 11 – Performance Measures related to SSS WDR D.13.iv(b) 22
Table 12 – Performance Measures related to SSS WDR D.13.iv (c) 23
Table 13 – Compliance with SSS WDR D.13.v – Design and Performance Provisions 24
Table 14 – Compliance with SSS WDR D.13.vi - OERP 25
Table 15 – Compliance with SSS WDR D.13.vii – FOG Control Program 28
Table 16 – Compliance with SSS WDR D.13.viii - SECAP 30
Table 17 – Compliance with SSS WDR D.13.ix – MMM 32
Table 18 –Recommended Additional Performance Indicators 33
Table 19 – Current Performance Measures to Monitor SSO Trends 35
Table 20 – Compliance with SSS WDR D.13.x – SSMP Program Audits 36
Table 21 – Compliance with SSS WDR D.13.xi – Communications Program 37
Table 22 – Summary of SSMP Compliance Deficiencies 39
Table 23 – Summary of Audit Recommendations 39

List of Figures

Figure 1 – Number of SSOs per Fiscal Year 12
Figure 2 – Average Gallons per SSO 13
Figure 3 – Average SSO Volume per Cause 14

SECTION 1 Audit Objectives

This report covers the results of the required Sewer System Management Plan (SSMP) internal audit process for the City of Roseville (City) for fiscal years 2015-2016 (FY 15/16), 2016-2017 (FY 16/17), and 2017-2018 (FY 17/18). The goal of the SSMP is to provide a written framework and plan for properly managing, operating, and maintaining all parts of the sanitary sewer system (collection system). The SSMP will help the City minimizing sanitary sewer overflows (SSOs) and complying with the California State Water Resources Control Board (SWRCB) order No. 2006-0003-DWQ, the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR). The SSMP audit evaluates the effectiveness of the SSMP, by reviewing the performance of the collection system against the performance measures used by the City to evaluate compliance with requirements of the SSS WDRs.

The intention of the SSMP audit is to help the SSMP evolve over time as a "living document" that City continually adjusts after identifying potential enhancements and implementing changes to address any deficiencies to the management, operation and maintenance of the City sanitary sewer collection system. Recently, the SWRCB is proposing a statewide sanitary sewer system order reissuance. The proposed reissuance, which will be built on the existing general order, is planned to be adopted in 2020, with a primary focus of reducing the statewide spill volume. This audit briefly discusses the proposed reissued order by the SWRCB and considers recommendations for future compliance.

The City is committed to completing the SSMP internal audit (Audit) on a biennial basis that is consistent with the procedure outlined in Appendix J-1 of the SSMP. The City completed its first Audit for FY 2011-2012, but subsequently contracted Water Works Engineers (WWE) to conduct the FY 11/12-12/13 and FY 13/14-14/15 biennial audits. This audit reviews results of the FY 15/16, 16/17, and 17-18, which is a three-year program. The key objective of this Audit is to review the SSMP compliance, implementation, and effectiveness. This report includes the following key tasks:

1. Review records from previous Audits and confirm deficiencies have been addressed (SECTION 2).
2. Evaluate the City's historical SSO data and performance measures listed in the SSMP (SECTION 3).
3. Using a standardized audit procedure detailed in 0 , identify deficiencies and provide recommendations that could improve the effectiveness of the SSMP and its compliance with the future reissue order.
4. Analyze the City's preventative maintenance (PM) and rehabilitation and replacement (R&R) programs as it relates to the operation and maintenance of the collection system (Section 5.4).
5. Review the Sanitary Sewer Overflow Emergency Response Plan (SSEORP) for SSOs and identify improvements as needed (Section 5.6).
6. Document all findings during the Audit and retain it on file (SECTION 6).

SECTION 2 Agency Background / System Information

The City of Roseville, in Placer County, is located approximately 16 miles north of the City of Sacramento. Along Interstate 80, Roseville is located adjacent to the City of Rocklin in the north-east and the City of Citrus Heights in the south. The City covers approximately 43 square miles near the base of the foothills of the Sierra Mountains. Typical elevations are within a range of 250 to 100 feet of sea level with an average slope across the City of 0.5% from east to west. Several streams flow through the City (i.e., Dry Creek, Pleasant Grove Creek, Kaseburg Creek, Linda Creek, Cirby Creek, Secret Ravine, and Miners Ravine.).

The City is responsible for the operation and maintenance of a continually growing collection system that has grown over 6% since the last internal audit to now serve approximately 137,000 people. **Table 1** lists key information about the City collection system over the past three Audit periods.

Table 1 – Overview of Collection System

Audit	FY 11/12 – 12/13	FY 13/14 – 14/15	FY 15/16 – 17/18*
Miles of Mainline	485.52	501.11	515.7
Miles of laterals (lower)	235.3	238	266
Pump stations	14	15	16
Sewer service lateral connections	41,568	43,619	47,638
Population served	122,060	128,832	137,213
WWC Staff	25	28	29
Annual Budget (FY1/ FY2/ FY3)	$3,400,000/ $3,800,00	$3,700,000/ $4,000,000	$5,069,000/ $5,279,0000
Category 1 SSOs	2	0	1
Category 2 SSOs	75	0	1
Category 3 SSOs	-	89	85

*Three-year audit

The City treats wastewater conveyed through its collection system at two regional wastewater treatment plants that are both owned and operated by the City (i.e., Dry Creek and Pleasant Grove WWTPs). Two other satellite collection systems owned and operated by other agencies (i.e., South Placer Municipal Utility District and Placer County) discharge directly into the City's collection system. A small portion of the City's collection system discharges outside of Roseville and into the Sacramento Area Sewer District (SASD) collection system, which is treated at the Sacramento Regional WWTP. The City is a part of the Central Valley Region 5 (Sacramento sub-region) of the SWRCB.

2.1 Review of Last SSMP Audit

The previous biennial audit for of the City SSMP was conducted by WWE for FY 13/14-14/15 and was completed in June 2016. In the last Audit, a list of approximately 47 recommended actions to address deficiencies or improve the effectiveness of the City SSMP were listed. **Table 2** summarizes identified deficiencies and associated action items, along with a description of the status of the task (i.e., Completed, Ongoing Updates, In/No Progress, Considered) outlined in the last SSMP audit. documents on the City's website and based on information from City staff.

Table 2 – Summary of Findings from the Last SSMP Internal Audit

Element	Action Item	Status
2 – Organization	Modify Appendix B-1: Add Wastewater Collections Supervisor Dan Pruden to Appendix B-1.	Completed
	Modify Appendix B-1: Update City Council positions and add phone numbers (Mayor Carol Garcia, Vice Mayor Susan Rohan, City Attorney Robert Schmitt). Update Commissioners and phone numbers: Chair Blandon Granger, Vice Chair John Speight. Update Liaisons and phone numbers for EU Director Richard Plecker, and Secretary Cheryl Hammond. Update Principal EU engineer and phone number for Jason Shykowski. Update Administrative Analyst and phone number for Maurice Chaney.	Ongoing Progress
	Modify Figure 2-1: Modify the Industrial Waste Specialist category and remove the FOG Control Program from the description due to the FOG program oversight transitioning from IWS to WWC in 2016. Add the Fog Control Program description to the Wastewater Collection Office Assistant category.	Completed
	Modify SSMP Section 2.2: Modify the general position description and SSMP responsibilities under the Lab/Industrial Waste Supervisor, Specialist, and Technician and remove the FOG Control Program or inspection program from those descriptions.	Completed
	Move the FOG Control Program SSMP responsibility into the WWC Superintendent category and the WWC Office Assistant category.	Completed
	Modify Figure 2-2 Flowchart: Update the WWC Divisions overflow emergency response plan chain of communication to match existing operations, whereby WWTP and LS staff and SCADA alerts should always call the 24-hour call center instead of WWC service staff. In addition, modify the Wastewater Admin cell and rename the position as Office Assistant.	In Progress

	Modify Appendix F-1 Flowchart: Follow the same recommendations written above.	Completed
3 – Legal Authority	Update SSMP section 3.7 to include the Wastewater Service Contract and Operating Agreement between the City, SASD, and SRCSD.	Completed
4 – O&M	Include the Mapping Update Policy Document as an appendix to the SSMP and post it to the City's SSMP website page.	Completed
	Update SSMP Section 4.3 Overview with updated statistics about the City's service area, number of customers, miles of main, number of services, and number of lift stations. Also update the number of WWC employees.	Ongoing Progress
	Document the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections, etc.), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data. This was also included during the previous audit but has not been completed.	No Progress
	Document the upcoming transition in responsibilities between WWC and EU Engineering in developing and operating the R&R plan by describing it in the SSMP. Confirm that field observations from WWC field crew are accounted for by EU Engineering when conducting risk assessment.	No Progress
	Augment the ongoing training program by documenting that WWC staff have demonstrated the ability to operate a major piece of equipment (i.e., combo Vactor unit) in accordance with available SOPs to a supervisor before using it for the first time in the field and at a specified frequency (i.e., annually or if equipment is upgraded). The document would need to list a piece of equipment, the name of the journeyman, supervisor, signatures, name of SOP if used, and date.	Completed
	Modify SSMP Section 4.5 to include training on SSOERP.	Completed
6 – OERP	The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station. This list should also be updated to incorporate new lift stations at Washington Blvd and 7600 Sierra College. This was also recommended during the previous audit but has not been implemented.	In Progress

	Modify SSOERP Section IV Traffic Control (WWC Personnel) to require WWC Personnel to implement traffic control in every situation where WWC personnel may be at risk of vehicular impact in accordance with MUTCD (part of Caltrans Work Area Traffic Control Handbook). It is recommended that WWC produce several standard TCPs (Traffic Control Plan) to match existing traffic conditions or type of roadway (i.e., arterial, residential, etc.).	Completed
	Modify SSOERP Section V Correct Cause (WWC Personnel) to include a discussion of whether a root-caused SSO could be classified as a Private Lateral Sewage Discharge (PLSD) if the City defines a spill cause as the entry point of the root and whether that location is on lower (city) or upper lateral side (private). Include recommendations to provide good documentation of the decision with photographic evidence and a logical narrative.	Completed
	Modify SSOERP Appendix A – Start Time Documentation Policy to include the following WWC standard field practice: If the start time cannot be set based on witnesses and if there is evidence of a spill traveling a farther distance than 15 minutes, then the field crew estimates the new start time and may try to recreate the spill (with clean water) to estimate volumes.	Completed
	Modify SSOERP Appendix C – Water Quality Sampling Procedures to the meet the requirements of the amended MRP. • Account for spill travel time in the surface water and scenarios where monitoring may not be possible to safety concerns or access restrictions once an SSO has stopped. This may be estimated by dropping floatable debris, for instance, and measuring the time required to travel a certain distance. • Expand minimum sampling parameters to include appropriate bacterial indicators that have been specifically listed in the beneficial uses of the City's waterways or more broadly listed by the regional Basin Plan.	No Progress
	Modify SSOERP Appendix C – Water Quality Sampling Procedures to include a list of all the required equipment that the employee would need to conduct proper sampling.	No Progress
7 – FOG Control Program	List Maurice Chaney as the responsible party for the FOG Public Education Plan.	Completed
	Modify SSMP Section 7.3 to reflect the change in responsibilities from IWS to WWC.	Completed
	Modify SSMP Section 7.4 to reflect the change in responsibilities from IWS to WWC.	Completed

	Modify SSMP Section 7.6 to reflect the change in responsibilities from IWS to WWC.	Completed
	Modify SSMP Section 7.7 to reflect the change in oversight from IWS to WWC.	Completed
	Document all FSE inspections. Develop a standard FSE inspection form which lists individual elements the FOG WDP permittee is required to maintain in a logical order for the inspector to follow. At a minimum, the inspector should enter the FSE, check the grease removal device, conduct a FOG concentration sample, request and view cleaning/hauling records and associated BMPs. After filling out the inspection form to document the whole procedure, transfer the results of the inspection form into a database or spreadsheet by which WWC can track compliance of the multiple required elements under the permit. Follow up with FSEs as required and formally document the process. Attach a blank version of the inspection form as an appendix in the SSMP.	Completed
	Modify the EU Engineering GIS database to include hotspot assets and FSEs and add them as layers to the maps that WWC receives.	Ongoing Progress
	Modify SSMP Section 7.8 to describe the process of how pipelines are added to the hot spot cleaning schedule and remove mention of annual sewer line maintenance work orders.	Completed
	Modify SSMP Section 7.9 to reflect the change in responsibilities from IWS to WWC.	Completed
8 – SECAP	Modify Appendix I-1 of the SSMP to indicate that the system evaluation and capacity assurance plan will be reviewed and updated every 10 years.	No Progress
9 – MMM	Update Appendix I on the City website with information from FY 13/14 and FY 14/15.	In Progress
	Update Appendix I and modify it to include document location, responsible person, and review frequency. This was also recommended during the previous audit but has not been completed.	In Progress
	Identify the metrics that correspond with specific elements of the SSMP and develop numerical goal ranges so the data currently collected and monitored by the City can be used as performance indicators (PIs) to quantitatively monitor SSMP effectiveness. The ultimate measure of SSMP effectiveness is the limiting of SSOs. However, setting goals for activities related to various SSMP elements and measuring performance against those goals, will help determine how success in those elements, relates to the overall effectiveness of limiting SSOs. Associating metrics with specific SSMP elements will allow for direct assessment of those elements and provide consistency in their evaluation in future audits. **Appendix 7.2** of this internal audit contains a list of PI and associates each one with a SSMP element, a suggested audit frequency, and a person responsible for monitoring that PI. A sample Performance Indicator Assessment Form is included in **Appendix 7.3** of this internal audit. Performance Indicator Assessment Forms can be developed for each metric and assessed periodically by the person responsible, according to the suggested audit frequency for that metric. At the time of	In Progress

	the next internal SSMP audit, the completed Performance Indicator Assessment Forms can be used to evaluate the effectiveness of SSMP elements and included as attachments to the audit. This was also recommended during the previous audit but has not been implemented.	
	Consider tracking additional metrics targeted at measuring the effectiveness of SSMP elements that do not currently have metrics associated with them. A list of potential performance measures listed by SSMP element is included in **Appendix 7.2** of this internal audit. This was also recommended during the previous audit but has not been implemented.	In Progress
	As discussed in the previous section, use data collected in SSMP Appendix I as a reference, and develop goals for metrics that track preventative maintenance activities and identify the person/position responsible for tracking data against those goals. See **Appendix 7.2** for a list of potential performance indicators for preventative maintenance activities with responsible parties. This was also recommended during the previous audit but has not been implemented.	In Progress
	Using the data collected in SSMP Appendix I as a reference, set performance goals for the metrics used to illustrate SSO trends. See **Appendix 7.2** for a list of potential performance indicators related to SSO trends. This was also recommended during the previous audit but has not been implemented.	Completed
10 – SSMP Program Audits	Post the previous SSMP internal audit (FY 11/12 and FY 12/13) and this SSMP internal audit to the City website.	Completed
	Post the most recent City council SSMP recertification (from 2014) the City website.	Completed
	Schedule the next internal SSMP audit for July-August of 2017.	Completed
	Revise Appendix J-1 to reflect recommendations for review of performance indicators (i.e., metrics associated with specific SSMP elements and the associated timelines). This was also recommended during the previous audit but has not been implemented.	In Progress
	Revise Appendix J-2 (audit form) to provide areas in the tables for each SSMP element to assess both SSMP compliance to Regional Board requirements, and effectiveness of individual SSMP elements. Remove Kim Spears and IWS from the certification of audit table. This was also recommended during the previous audit but has not been implemented.	In Progress
	Update the SSMP revision log and post on the website.	No Progress

	Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes. This was also recommended during the previous audit but has not been implemented.	No Progress
11 - Communication	As of September 2013, the State Water board amended the MRP of the SSS WDR and the City produced a training PowerPoint to City staff, council, and stakeholders regarding the update. Attach the PowerPoint to the SSMP website.	No Progress
	Update SSMP Appendix K-4 with FY 13-15 EU marketing Plan budget & spending.	No Progress
	Add the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD) as attachment K-7 and modify the SSMP to mention it.	No Progress
	Modify SSMP 11.4 to include the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).	No Progress

2.2 Review of FY 15/16, FY 16/17, and FY 17/18

The City has prioritized eliminating SSOs from the collection system and was successful preventing Category 1 SSOs during the FY 15/16-16/17 period. However, during the FY 17/18, one Category 1 SSO occurred, which was resulted by an equipment failure (Vacuum truck). This incident caused 342 gal of spill, of which 97% was recovered and 7 gal of it reached the state's surface waters. During this period, only one Category 2 SSOs occurred (FY 15/16), which was resulted by a pipe/structure failure. This event spilled 2020 gallons of sewage from a mainline, most of which was captured and recovered. In addition, the city experienced two Category 3 spills larger than 500 gallons, from which, one occurred on a mainline (caused by debris) and one occurred on a lower lateral, which was caused by roots. All remaining spills were less than 100 gallons, of which, four of them occurred on mainlines.

SECTION 3 SSO Trends

3.1 Historical SSO Data

A total of 85 Category 3 SSOs occurred during the audit period FY15/16 (38 SSOs), FY16/17 (23 SSOs), and FY17/18 (24 SSOs). **Appendix 7.1** of this report includes the date, location, type, volume, volume recovered, and recovery percentage of total volume of each SSO spill.

One of the City-defined tasks of the Audit is to compare the information submitted to the publicly available California Integrated Water Quality System (CIWQS) database with internal City records. The WWC Superintendent verifies that SSO data in CIWQS is accurate and matches the SSO Field Report Forms. **Table 3** shows an organized view of key data present in the CIWQS and City internal records and shows discrepancies, for the three-year audit period. As shown, Table 3 shows how accurately CIWQS data reflect the City's records, with few exceptions, details of which are listed in **Appendix 7.2**. The information presented in the "Internal Records" column represents a summarized view of various performance measures maintained by the City.

Table 3 – CIWQS and City SSO Historic Data

SSO Historical Data since last SSMP Internal Audit	CIWQS Data FY 15/16	Internal Records FY 15/16	CIWQS Data FY 16/17	Internal Records FY 16/17	CIWQS Data FY 17/18	Internal Records FY 17/18
Total number of potential SSO service calls received	-	266	-	252	-	259
Total number of SSOs reported	39	39	23	23	25	25
Total volume of SSOs [Gal]	2525	2525	1081	1081	1531	1565
Total volume of SSOs that reached waters of the state [Gal]	0	0	0	0	7	7
Volume of SSOs recovered [%]	95%	95%	91%	91%	53%	54%
Average SSO response time [h:mm]	0:25	0:25	0:18	0:18	0:15	0:20
Average SSO duration time [h:mm]*	2:59	2:56	6:22	6:22	6:49	6:49

* Including long-duration SSO events (> 3 hours long) that increased the average SSO duration.

The following section investigates the City's historical SSO data to identify potential SSO trends to provide insight into measuring the effectiveness of the City SSMP and future improvements in reducing SSOs. **Figure 1** highlights the category and number of SSOs since FY 06/07. The SWRCB defined new three SSO categories as of September 13th, 2013. A category 1 SSO is currently defined as a spill of any volume that reaches surface water. A Category 2 SSO is currently defined as a spill greater than or equal to 1,000 gallons that does not reach surface water. A Category 3 SSO is currently defined as a spill less than 1,000 gallons that does not reach surface water. **Figure 1** shows a declining trend on the total number of SSO events per year since FY 13/14 and is mostly limited to Category 3 SSOs.

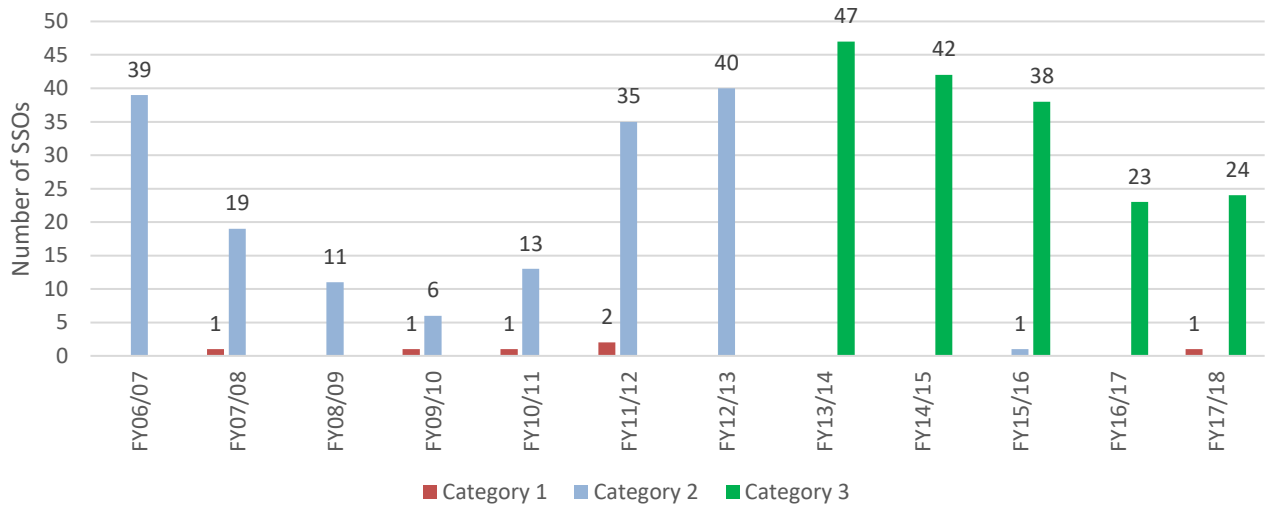


Figure 1 – Number of SSOs per Fiscal Year

With the goal of minimizing the spill volume, another valuable source of analysis is comparing average gallons spilled per SSO across fiscal years. **Figure 2** demonstrates average volume per SSO event since 2007, which equally weight out all spills and shows an annual average. Although, the number of SSO events has dropped over the years (See **Figure 1**), **Figure 2** indicates that the average spill volume per incident has been increased during this audit period. This trend was also observed by the SWRCB throughout the state. Although the number of statewide events has dropped over the years, but the spill volume has increased. Also, two wet seasons of FY 15/16 and 17/18 can also be clearly identified in **Figure 2**. In case of City of Roseville, it appeared that the high average volume was caused by the few high-volume spills occurred in FY15/16 and 17/18, majority of which was recovered. As mentioned, one of these high-volume incidents occurred by a main pipe/structure failure (FY 15/16: 2020 gallons) and the second largest spill was caused by roots in a lower lateral (FY 16/17: 760 gallons). Given the past records, **Figure 2** shows an average value of about 40 gal/SSO throughout the years. After reviewing the City's performance measures, it appears that the resulted high average volumes were most likely incidental driven and were not related to the SSMP effectiveness or the system performance. In addition, analysis of the City's SSO data showed that in about 18% of the events the City's staff did not see an active spill, in other words, these spills were ended before arrival of the staff. These incidents correspond to 5% of the total spill volume during this audit period.

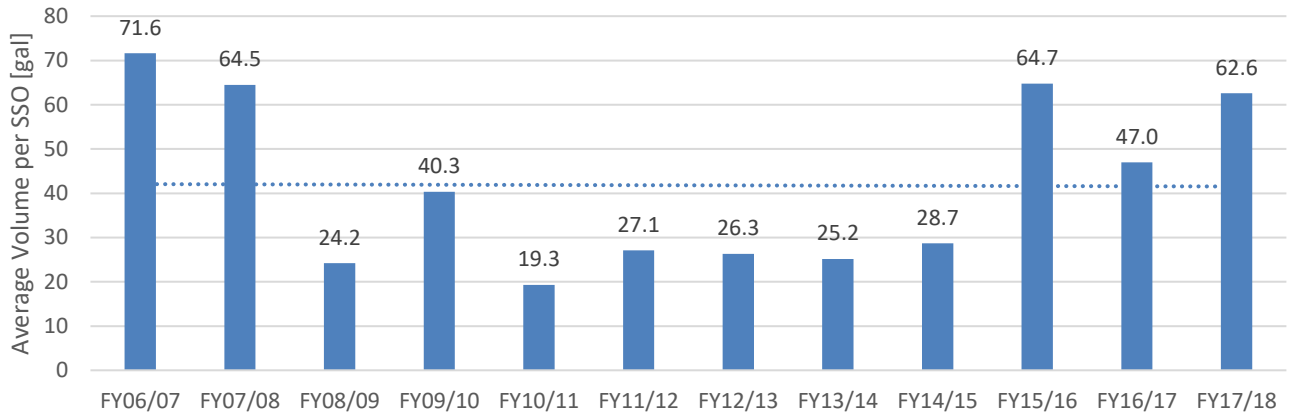


Figure 2 – Average Gallons per SSO

Here, City's average number of SSOs and average spill volume per SSO per 100 miles of sewer pipeline are compared with the results from sub-region Central Valley –Sacramento (part of State Water Control Board Region 5) and California (State), to provide regional context and insight into the City's collection system performance. **Table 4** summarizes these findings, gathered from the SWRCB's annual performance reports. These reports and their related data can be found online at the following link:

https://www.waterboards.ca.gov/water_issues/programs/sso/#prgm_docs

https://www.waterboards.ca.gov/board_info/exec_dir_rpts/

The board has not published similar data for fiscal years later than 2016. However, as shown in **Table 4**, the City average SSOs/100 miles of sewer pipe is far below the average of all municipal agencies in the Central Valley Sacramento subregion, and is slightly higher than the State. The City's average spill volume/100 miles of sewer pipe is an order of magnitude smaller than the state, which highlights how effective the City's SSO preventative maintenance and response program has been.

Table 4 – Regional Comparison of SSO Data

Fiscal Year	Average # of SSOs per 100 miles			Average Spill Volume per 100 miles [gallons]		
	City	Region 5	State	City	Region 5	State
2011/12	4.88	12.4	4.28	132	3,396	13,925
2012/13	5.85	12.72	4.38	154	4,371	8,194
2013/14	6.39	11.96	4.38	160	2,878	4,587
2014/15*	5.71	9.91	4.65	163	6,324	11,484
2015/16*	4.99	8.76	4.01	323	7,484	25,134
2016/17	2.94	Not Available		138	Not Available	
2017/18	3.20	Not Available		196	Not Available	

* These values do not include laterals in the total system size.

Table 5 demonstrates the leading causes of SSOs in this audit period compared to the previous audit period (FY 13/14-14/15). Generally, given the three-year period, number of SSOs caused by roots has decreased, but the volume has increased by 23%, which resulted in a higher average SSO volume. Also, FOG related events have decreased significantly during this period. However, SSOs caused by debris and pipe/structure failure have experienced a notable volume increase comparing to the previous audit period. Furthermore, no Capacity-caused SSOs was observed in this audit period and only one accidental truck incident caused a Category 1 event.

Table 5 – Leading Causes of SSOs in FY15-18 (results from FY13-15 in parenthesis)

By Number		By Volume		By Average Volume per SSO	
Cause	**Number**	**Cause**	**Gallons**	**Cause**	**Gallons**
Roots	62 (63)	Roots	1576 (1281)	Roots	25 (20)
FOG	2 (5)	FOG	67 (743)	FOG	34 (149)
Debris	15 (15)	Debris	908 (314)	Debris	61 (21)
Pipe Failure	7 (6)	Pipe Failure	2278 (50)	Pipe Failure	325 (8)
Capacity	0 (0)	Capacity	0 (0)	Capacity	0 (0)
Others*	1 (0)	Others*	342 (0)	Others*	342 (0)
Total	87 (89)	Total	5171 (2388)	Total	787 (198)

*Includes a vacuum truck incident for this audit (past audit includes an SSO caused by an act of vandalism).

To track the leading SSO cause, WWE summarized the average SSO volume per cause for the past three audit periods, results of which are shown in **Figure 3**. The actions planned because of this SSMP Audit will target the leading causes to most effectively reduce the number and more importantly spill volume of SSOs. As shown here, the FY15/16-17/18 period has experienced similar average volume of root caused SSOs, lower FOG related spill volumes, and slightly higher debris caused spills. However, as shown here, pipe/structure failure caused SSOs and incidental SSOs have increased during this period and since these are typically corresponded with high volume spills over small number of SSOs, these averages are significantly higher than the rest.

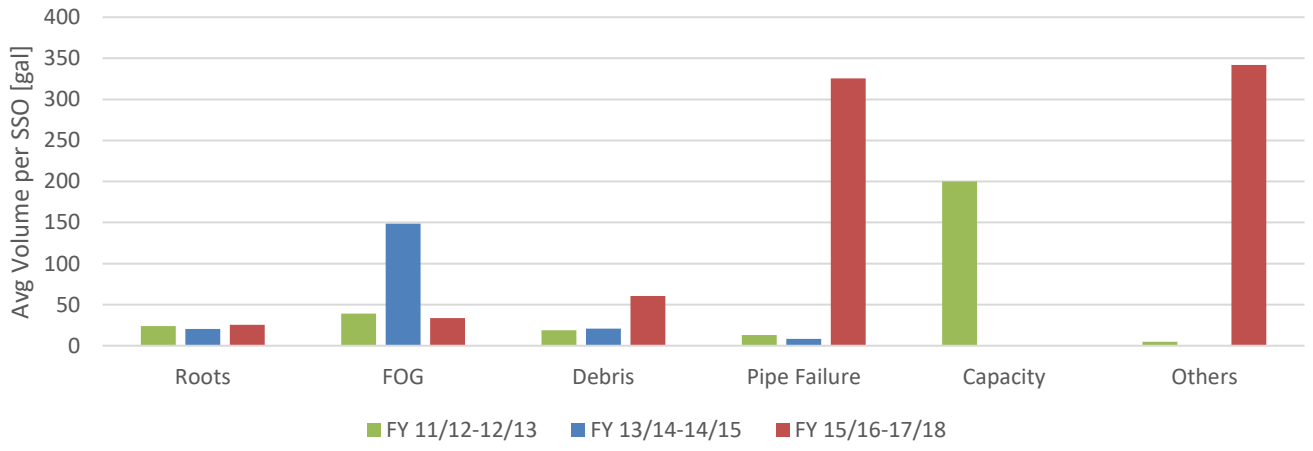


Figure 3 – Average SSO Volume per Cause

3.2 Performance Measures

To achieve proper operation and management of the sanitary sewer system and to prevent SSOs, the City utilizes multiple performance measures to assess the effectiveness of the SSMP. While the City may use other performance measures for evaluation purposes, the following measures are typically used:

- SSO Rate (SSOs per 100 miles of collection system piping per year)
- Number of SSOs for each cause (roots, FOG, debris, pipe failure, capacity, lift station failures, etc.)
- Average SSO volume (gallons)
- Percentage of SSOs greater than 100 gallons (%)
- Percentage of SSOs reported as Category 1 (%)
- Percentage of SSO volume recovered (%)
- Percentage of SSO volume reaching a surface water (%)

The City's SSO record were queried to analyze each performance measure from FY 11/12 to FY 17/18 and the data is shown in **Table 6** below. Overall, despite the decrease in the number of SSOs during this audit period, the City's SSO average has increased compared to previous years, which was due to few high-volume incidents, caused by pipe/structure failure and accidental spills.

Table 6 – Performance Measures

Performance Measures		FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18
SSO Rate, SSOs/100 mi		4.88	5.85	6.39	5.71	4.99	2.94	3.20
SSO Cause	FOG	0	1	4	1	2	0	0
	Roots	18	30	32	31	30	20	12
	Debris*	8	2	8	2	4	2	9
	Pipe/Structure Failure	6	4	2	7	3	1	3
	Vandalism	1	0	0	0	0	0	0
	Capacity	0	2	0	0	0	0	0
	Construction	0	0	0	1	0	0	0
	Unknown/Other	2	3	1	0	0	0	1
Average SSO Vol (gal)		27	26	25	29	65	47	63
% of SSOs > 100 gal		2.8%	2.3%	2.1%	4.7%	2.6%	4.3%	8.0%
Category 1 % of Total SSOs		0%	7%	0%	0%	0%	0%	22.3%
% of Spill Volume Recovered		99%	63%	94%	93%	95%	91%	54%
% of Spill Vol Reaching Surface Water		0%	37%	0%	0%	0%	0%	0.4%

*Includes non-dispersible and rags

SECTION 4 Audit Procedure

In accordance with SSS WDER Section D.13.x, the primary SSMP audit objective is to focus on evaluating the effectiveness of implementing the SSMP and the City's compliance with the SSMP requirements identified in the SSS WSDR Order. Also, according to recent SWRCB WDR workshops, it is expected that the statewide general order reissuance, with the primary focus on reducing spill volume, emphasis on the following:

- **Requirements focused on spill volume:** Although the total number of spills has decreased over the past few years, the CIWQS data has shown that the state experienced higher volume of spills. While, this could be caused by the previous wet seasons, the proposed reissuance will likely require enrollees to demonstrate system-specific spill reduction programs.
- **Improved Data Quality**: With the goal of enhancing data accuracy, additional measures are being considered to provide higher quality spill volume data, such as maintaining certified operators and emphasizing on staff training.
- **Enhanced Order Enforceability**: To address poor performing systems and those with lack of SSMP implementation.
- **To Incentivize Order Compliance**: To recognize and acknowledge systems with good performance.
- **Effective Planning for System Resilience**: To ensure effective and adaptive planning for spill reduction.

This section details the procedures used to meet the existing order, while considering future expectations.

4.1 Review of SSMP Compliance

This Audit assessed the City's SSMP against the requirements outlines in the SSS WDR. The subsections of **SECTION 5** listed below are organized by SSMP elements. Each subsection contains a table which lists the SSS WDR section D.13 requirements and City's level of compliance of the SSMP with that requirement. The compliance status of the City's SSMP is indicated with one of the following ratings: ***Yes*** *– in compliance,* ***No*** *– not in compliance, or* ***N/A*** *– not applicable with a written justification in the SSMP.* If there are any compliance deficiencies, then an explanation of the deficiency is given. Each deficiency will have a recommended SSMP enhancement, which may include action items, adjustments, and/or timelines of the planned completion.

4.2 Review of SSMP Effectiveness

After the SSMP compliance assessment compared to SSS WDR requirements, an evaluation of the effectiveness of the SSMP elements has been conducted to comply with the requirements for SSMP audits per subsection D.13.x of the SSS WDR. The discussion review if the plan outlined for each section is being followed, and how effective the plan is at reaching the desired objectives. Recommendations will be made where appropriate based on the results of this Audit to identify tasks to improve the effectiveness of SSMP activities. Performance metrics will be used wherever possible to measure the effectiveness of the SSMP elements.

This section will not repeat the information and plans presented in each section of the SSMP and is intended to evaluate the effectiveness of the stated plans for each SSMP element. The reader should reference the City's SSMP to obtain the information referenced by this Audit.

A summary of the recommended modifications made through this Audit is included in **SECTION 6**.

SECTION 5 Audit of SSMP Elements

This section evaluates all elements of the City's SSMP. Each section of this chapter is associated with one of the eleven elements of the SSMP in accordance with SS WDR section D.13 requirements. Each element is evaluated for compliance and effectiveness described above in 4.1 and 4.2 respectively.

5.1 Goals

5.1.1 Compliance

Table 7 – Compliance with SSS WDR D.13.i - Goals

SSMP Requirement	Compliance	Deficiencies
i Properly manage, operate, and maintain all portions of the City's wastewater collection system.	Yes	-

5.1.2 Effectiveness of SSMP Elements and Recommended Modifications

Roseville Goals (SSMP 1.2)

- Level of Effectiveness: The City currently has seven goals identified in the SSMP. The goals of the City recorded in the SSMP have been effective in guiding the City's activities to support the objective of the SSS WDR to protect the waters of the state.

- Recommendations: Post Appendix A-1 – Roseville's SSMP Development Plan and Implementation Schedule on the website.

5.2 Organization

5.2.1 Compliance

Table 8 – Compliance with SSS WDR D.13.ii - Organization

SSMP Requirement	Compliance	Deficiencies
ii(a) Identify Legally Responsible Official (LRO)	Yes	-
ii(b) SSMP responsibility and organization chart	Yes	-
ii(c) Chain of communication for reporting SSOs	Yes	-

5.2.2 Effectiveness of SSMP Elements and Recommended Modifications

List Legally Responsible Official (LRO) (SSMP 2.1)

- Level of Effectiveness: The City has Ken Glotzbach (Utility Manager) and Chris Bracco (Wastewater Collections Superintendent) listed in CIWQS as LROs. Dan Pruden (Wastewater Collections Supervisor) is

listed as a data submitter. This is recorded in Appendix B-1 of the SSMP and is publicly accessible. The current organization of data submitters and LROs has proven effective in reporting SSOs to meet the requirements of the September 2013 amended Monitoring and Reporting Program.

- Recommendations:
  - Modify Appendix B-1: Update City Council positions and add phone numbers (Mayor Carol Garcia, Vice Mayor Susan Rohan, City Attorney Robert Schmitt). Update Commissioners and phone numbers: Chair Blandon Granger, Vice Chair John Speight. Update Liaisons and phone numbers for EU Director Richard Plecker, and Secretary Cheryl Hammond. Update Principal EU engineer and phone number for Jason Shykowski. Update Administrative Analyst and phone number for Maurice Chaney.
  - Post the following Appendices on the website:
    - Appendix B-1 – Personnel Responsible for SSMP Elements
    - Appendix B-2 – Personnel Responsible for SSO Reporting
    - Appendix B-3 – Personnel Responsible for Responding to SSOs Weekly Standby

SSMP Responsibility Organization Chart (SSMP 2.2)

- Level of Effectiveness: The SSMP Responsibility Organization Chart (SSMP Figure 2-1) is current in the SSMP and lists a descriptive definition of each individual's responsibilities. The chart is effective in defining the work flow and responsibilities of the individuals as well as departments within the City of Roseville's operations with relation to the SSMP. The narrative of the general position description is outlined in Section 2.2 of the SSMP.

- Recommendations: No recommendations at this time.

Chain of Communication Reporting Chart (SSMP 2.3)

- Level of Effectiveness: The internal notification contact chart is current and readily available to all wastewater utility district staff. The city of Roseville has a 24-hour call center, standardized answering script and procedures, and a full-time staff wastewater utility customer service representative. The individual's job is to respond to any service calls including but not limited to: backups, SSOs, smell complaints, etc. This has been an effective and well-utilized service, as service calls have increased and the average SSO response time has remained below the 40-minute target. Only 6 SSO response times were above 40 minutes during the audit period (1:48:00, 3:15:00, 0:45:00, 0:42:00, 0:45:00, and 0:45:00) which totaled 31 gallons in spills and the remaining 93% of the responses were under 40 min.

- Recommendations:
  - Modify Figure 2-2 Flowchart: Update the WWC Divisions overflow emergency response plan chain of communication to match existing operations, whereby WWTP and LS staff and SCADA alerts should always call the 24-hour call center instead of WWC service staff.
  - Include Figure 2-2 flowchart as Appendix F to the SSOERP (Appendix F-1) and mention in the text.

5.3 Legal Authority

5.3.1 Compliance

Table 9 – Compliance with SSS WDR D.13.iii – Legal Authority

SSMP Requirement	Compliance	Deficiencies
iii(a) Prevent illicit discharges	Yes	-
iii(b) Properly designed and constructed sewers	Yes	-
iii(c) Ensure access to laterals owned/maintained by City	Yes	-
iii(d) Limit the discharge of FOG and other debris	Yes	-
iii(e) Enforce any violation of City ordinances	Yes	-

5.3.2 Effectiveness of SSMP Elements and Recommended Modifications

Industrial Pretreatment Program (SSMP 3.2)

- Level of Effectiveness: The Industrial Waste Section (IWS) administers the Pretreatment Program Enforcement Response Plan and implements enforcement procedures specified by the U.S. EPA in accordance with 40CFR 403.5 (f) (5). The IWS has the authority to permit and monitor significant industrial users (SIUs) and small commercial/industrial dischargers. The implementation of the Pretreatment Program Enforcement Response Plan has been effective in providing the City the authority to control and prevent illicit discharges to the collection system.

- Recommendations: Post Appendix C-1 – Pretreatment Program Enforcement Response Plan on the website.

Municipal Code and Design and Construction Standards (SSMP 3.3)

- Level of Effectiveness: The City's design and construction standards regulate the preparation of plans for construction of additions/improvements to the sewer. The Roseville Municipal Code (RMC) section 14.12.040 requires that building sewer and connection into the public sewer system conform to the requirements of the building and plumbing code or other applicable rules and regulations of the City. The RMC also requires an installation of a lateral line clean out at the point of connection with the public sewer. The City design and construction standards and the RMC section 14.12.040 have been effective in providing the City the legal authority to properly design and construct the sewers and connections.

- Recommendations: Update the related links for Appendices C-3 and C-4 for sanitary sewer design and construction.

Municipal Code – Sewer Access Authority (SSMP 3.4)

- Level of Effectiveness: The Charter in the RMC, Article X Sec. 10.01 designates the authority to access City owned and operated facilities, either within or outside its corporate limits, number of activities including, but not limited to maintenance, inspection, and repair related to sewage collection. The authority gives legal access to all City-owned sewer facilities. The City has not had issues to date with lack of access to

facilities based on legal authority. The current legal authority to access sewer facilities has been effective in supporting the goals of the SSMP.

- Recommendations: No recommended modifications at this time.

Municipal Code – FOG (SSMP 3.5)

- Level of Effectiveness: The RMC chapter 14.14 is a robust FOG ordinance that lists regulatory requirements, fees, administrative requirements, and authority to enforce regulatory compliance. This ordinance is effective in identifying the required equipment and BMPs for FSEs as well as indicating the authority of the City to enforce the FOG requirements.

- Recommendations: No recommended modifications at this time.

Municipal Code – Enforcement Authority (SSMP 3.6)

- Level of Effectiveness: The RMC section 14.12.060 authorizes the City to penalize violators of the City's code requirements. At the discretion of the City attorney, an individual may be charged with an infraction or a misdemeanor. The authority to penalize infractions that may cost City resources has proven effective to maintain proper use of the wastewater collection system.

- Recommendations: No recommended modifications at this time.

Inter-Agency Agreements and Satellite Systems (SSMP 3.7)

- Level of Effectiveness: The City maintains a Joint Exercise of Powers Agreement for the South Placer Wastewater Authority and Agreement Regarding the Operation and use of the South Placer Regional Wastewater Facilities. In addition, the City has an Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).

- Recommendations: Post the following Appendices on the website:
    - Appendix C-5 – Joint Exercise of Powers Agreement for the South Placer Wastewater Authority
    - Appendix C-6 – Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities
    - Appendix C-7 – Wastewater Service Agreement by Contract and Operating Agreement between SASD, SRCSD and City of Roseville

5.4 Operation and Maintenance Program

5.4.1 Compliance

Table 10 – Compliance with SSS WDR D.13.iv – O&M Program

SSMP Requirement	Compliance	Deficiencies
iv(a) Collection system maps	Yes	-
iv(b) Preventive O&M activities	Yes	-
iv(c) Rehabilitation and Replacement (R&R) plan	Yes	The City does have an R&R plan in place, but additional improvement should be implemented (see below)
iv(d) Training	Yes	The City provides regular training but additional improvements to the training program should be implemented (see below)
iv(e) Equipment and critical replacement parts	Yes	-

5.4.2 Effectiveness of SSMP Elements and Recommended Modifications

Roseville Collection System Maps (SSMP 4.2)

- Level of Effectiveness: The city maintains electronic and hard copy maps of the sanitary sewer system and storm drain system. Updates to the electronic map system are translated to the field crew trucks via single sheet prints, if required. Full hard copy mapbooks are updated on a yearly basis. The City Mapping Update Policy is followed to ensure mapping is correct and completed in GIS and made available to the required users. The mapping policy document is added to the SSMP as an appendix and is posted to the City's SSMP website page.

- Recommendations: Post the following Appendices on the website:
  - Appendix D-1 – City of Roseville Sewer Map Grid System
  - Appendix D-9 – Mapping Update Policy

Roseville Preventive Operations & Maintenance Activities (SSMP 4.3)

- Level of Effectiveness: WWC engages in various programs to complete routine preventative maintenance activities, which include jet cleaning, lateral eeling, chemical root control, CCTV inspections, visual inspections, and lift station maintenance.

  According to **Table 6**, the City experienced a slight decrease in root-caused SSOs during the last years of the audit period, which explains the decrease in the total sewer lateral mechanical cleaning (eeled), as shown in **Table 11**. The City outperformed preventative maintenance targets and past performance measures as evident in **Table 11,** with the exception of mechanical root cleaning during FY 17/18, which may have been related to an equipment maintenance issue (see **Table 12**). Other performance measures or benchmarks are reviewed in full in the recommendations of **Section 5.9**.

Table 11 – Performance Measures related to SSS WDR D.13.iv(b)

Performance Measure	Target	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
Total number of sewer maintenance field staff	NA	23	24	24	24	26
Sewer main flushed per year (miles)	250	330	284	248	295	283
Sewer laterals mechanically cleaned (eeled) per year (miles)	8	13.89	14.69	14.77	7.41	1.07
Average high velocity cleaning per crew per day [LF]	1670	2393	2922	2618	3115	2998
Average cost of hydro cleaning [$/LF]	0.36	0.30	0.32	0.33	0.29	0.32
Average cost of sewer mechanical cleaning [$/LF]	1.60	1.23	1.20	0.77	0.94	1.66

- Recommendations:
  - Update SSMP Section 4.3 Overview with updated statistics about the City's service area, number of customers, miles of main, number of services, and number of lift stations. Also update the number of WWC employees.
  - Update the following Appendices and post on the website:
    - Appendix D-2 – Maintenance Cleaning Schedule: Update with Maximo CCMS example
    - Appendix D-3 – CCTV Video Report
    - Appendix D-4 – SOP

Rehabilitation and Replacement Plan (SSMP 4.4)

- Level of Effectiveness: The City regularly CCTV inspects pipelines using the national Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) coding standard. The City evaluates the risk of failure for each asset based on the various data sources it maintains (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections) and assigns high risk assets in a ranked Rehabilitation and Replacement (R&R) Plan. If an R&R project is not completed in one year, then it is rolled over to the next. The City maintains a 5-year list of planned R&R CIP projects.

  The city creates an asset group in their Maximo CCMS, based on their condition assessment and PACP scores. This ongoing list is prioritized and provided to Tech Services, when CIP budget is prepared, to put a CIPPP project together. Also, while performing routine hydro work in the grids, the vactor group performs manhole inspections of each asset. Once there are enough manholes that require rehabilitation, the City produces a list with asset IDs that will be sent to Tech Services for manhole Rehabilitation CIP. In the past 6 years, the City has not discovered a substantial number of manholes to develop a manhole CIP project.

  In accordance with the City-utilized performance measures related to inspection and R&R program activities as displayed in **Table 12**, the City has met or exceeded all inspection targets during this audit program. However, total miles of mainline rehabilitated during this three-year were less than the target. SSOs caused by structural failure during the audit period are overlaid with the City's 2018 I/I study and shown in **Appendix 7.3.** As shown, most of these spills occurred in regions with older pipes, such as region 5, 15, and 17. These regions are also known for their higher I/I response and capacity issues during wet

seasons. The City has been actively performing I/I analysis and smoke testing to identify system defects in these regions, results of which are incorporated in CIP decision makings.

Table 12 – Performance Measures related to SSS WDR D.13.iv (c)

Performance Measure	Target	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
Total miles visually inspected per year (not CCTV)	0.25	0.25	0.25	0.18	0.25	0.25
Lateral CCTV inspected per year [miles]	16	14.69	26	35.71	32.51	36.14
Main CCTV inspected per year [miles]	30	53.27	65	84.32	59.71	64.1
Laterals rehabilitated per year [number]	50	90	43	60	85	89
Laterals rehabilitated or replaced per year [miles]	0.25	0.39	0.16	0.27	0.66	0.42
Mains Rehabilitated or replaced per year [miles]	5	2.65	6	0	0	1.07
Average Cost of CCTV (lateral) [$/LF]	1.34	1.46	1.11	1.15	1.04	1.00
Average cost of CCTV (main) [$/LF]	0.53	0.55	0.41	0.41	0.36	0.40

- Recommendations:
  - Describe the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections, etc.), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data. This was also included during the previous audit but has not been completed.
  - Document the upcoming transition in responsibilities between WWC and EU Engineering in developing and operating the R&R plan by describing it in the SSMP. Confirm that field observations from WWC field crew are accounted for by EU Engineering when conducting risk assessment. This was also included during the previous audit but has not been completed.
  - Post Appendix D-8 – Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan (Element IVC) on the website.

Training (SSMP 4.5)

- Level of Effectiveness: The WWC requires employees be certified with CWEA, DMV, CPR, First Aid, Confined Space Policy, Gas Detector Policy, as well be trained in equipment safety, maintain OSHA rules, and review material safety data sheets.

  The existing training program has been effective in supporting a well-trained staff. Over this audit period WWC has reported 3 on the job accidents in FY 15/16, 3 in FY 16/17, and 4 in FY 17/18, which are less than previous audits. WWC strives for zero-on-the-job accidents and has weekly tail-gate training meetings and monthly training sessions where WWC staff is trained in part via various SOPs.

- Recommendations: Update the following links:
  - The CWEA website link
  - Appendix D-5 – CWEA Certification Handbook link

Equipment and Critical Replacement Parts (SSMP 4.6)

- Level of Effectiveness: WWC maintains a list of equipment and critical replacement parts inventory in Appendix D of the SSMP. The critical replacement parts list is 100% stocked, up to date, and is maintained by the Material Technician at Dry Creek WWTP. The equipment and critical replacement parts inventory and upkeep is effective and ensures that a lift station critical part failure can be quickly mitigated.

- Recommendations: Update and post the following Appendices on the website:
  - Appendix D-6 – Equipment Inventory List
  - Appendix D-7 – Critical Replace Parts List

5.5 Design and Performance Provisions

5.5.1 Compliance

Table 13 – Compliance with SSS WDR D.13.v – Design and Performance Provisions

SSMP Requirement	Compliance	Deficiencies
v(a) Sanitary sewer design and construction specifications	Yes	-
v(b) Procedures and standards for inspecting and testing new and R&R projects	Yes	-

5.5.2 Effectiveness of SSMP Elements and Recommended Modifications

Sanitary Sewer Design and Specifications (SSMP 5.2)

- Level of Effectiveness: The City's design and construction standards are available on the website and the online SSMP documentation lists their location. These designs and construction standards are effective in ensuring that new or rehabilitated infrastructure is designed and constructed in an acceptable manner.

- Recommendations: Update Appendix E-1 – Sanitary Sewer Design link.

Sanitary Sewer System Construction and Performance Provisions (SSMP 5.3)

- Level of Effectiveness: The City's construction and design standards include procedures and requirements for the testing of new/rehabilitated assets and has been effective in ensuring that recently constructed assets perform as expected.

- Recommendations:
  - Update Appendix E-2 – Sanitary Sewer System Construction link.
  - Post Appendix E-3 – Technical Memo, SSMP Preparedness Audit Design and Performance Provisions Element V on the website.

5.6 Overflow Emergency Response Plan

5.6.1 Compliance

Table 14 – Compliance with SSS WDR D.13.vi - OERP

SSMP Requirement	Compliance	Deficiencies
vi(a) Proper notification procedures	Yes	-
vi(b) Program for appropriate SSO response	Yes	-
vi(c) Procedure for prompt notification to regulatory agencies	Yes	-
vi(d) Procedures for appropriate staff and contractor training	Yes	
vi(e) Procedures to address emergency operations (e.g., traffic, crowd control)	Yes	-
vi(f) Program to ensure containment of SSO to prevent discharge and minimize adverse impacts on the environment	No	SSOERP does not meet certain water quality monitoring requirements of the amended MRP document

5.6.2 Effectiveness of SSMP Elements and Recommended Modifications

Notification Procedures (SSMP 6.2)

- Level of Effectiveness: The average SSO response time during the audit period was 22 minutes, with 25 minutes for FY 15/16, 18 minutes for FY 16/17, and 20 minutes for FY 17/18 (see **Table 3**). These response times are much faster than the City target response time of 40 minutes and indicates that the notification procedures employed the City are effective in facilitating a rapid response from the City's first responders.

- Recommendations: No recommended modifications at this time.

Response Program (SSMP 6.3)

- Level of Effectiveness: SSO response procedures are documented in Appendix F-1 Section 2 of the SSMP and are summarized in the flow chart in Figure 6-2 of the SSMP and Appendix F-1 SSOERP. The flow chart uses a series of yes/no questions to guide SSO responders in quickly identifying the right sequence of decisions and actions to properly assess and mitigate an SSO. This chart is simple and effective in explaining the process in which to mitigate an SSO.

  During the audit period, the average SSO volume spilled was 59 gallons, with an average 82% recovered from the total SSO volume. Similarly, the average SSO duration length was 4:57 hours long, however there were 13 long-duration SSOs (over 3 hours) that caused the average SSO duration length to increase. One of these SSOs in FY 15/16 spilled from a main for 65 hours and resulted in volume spilled of 65 gallons. In all these instances, the City was notified very late, and once notified, stopped all long duration SSOs in under 30 minutes. The average City response time to SSO calls during the audit period was 22 minutes,

and the average time it took to stop the SSO (SSO mitigation) once on-site was just under 5 minutes. These statistics demonstrate that the City has been effective in responding and mitigating SSOs.

- Recommendations:
  - The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station. This list should also be updated to incorporate new lift stations at Washington Blvd and 7600 Sierra College. This was also recommended during the previous audit but has not been implemented.
  - Modify Figure 6-2 – SSO Procedure Flow Chat, to report SSO category 1 larger than 1,000 gallons to Cal OES within 2 hours per WDR requirements (currently if > 50,000 gal).
  - Post Appendix F-1 – SSOERP on the website along with corresponding attachments.

Regulatory Notification Procedure (SSMP 6.4)

- Level of Effectiveness: The Superintendent and Utility Manager are the legally responsible officials (LRO) for certifying SSO reports submitted to CIWQs. The Superintendent and Supervisor are also responsible for reporting the SSOs to RWQCB, OES, and Placer Environmental Health Department as required. This section is effective in conveying the responsibility the LRO in reporting SSOs to the proper authorities.

- Recommendations: No recommended modifications at this time.

Staff and Contractors Training (SSMP 6.5)

- Level of Effectiveness: Each WWC employee is required to complete the SSO response procedure training updates and review of SSO training are included in the weekly tailgate meeting throughout the year. They are also trained on the various SOPs implemented within WWC. Contractors are also required to implement the procedures identified in the SSO training prior to working within the collection system. As evidenced by the fast response and mitigation times, the WWC staff's training has been effective.

- Recommendations: No recommended modifications at this time.

Emergency Response Coordination (SSMP 6.6)

- Level of Effectiveness: WWC employees are required to complete the Emergency Action plan training annually. This covers HAZ WOPER first responders and Roseville's Incident Command System (ICS). These process, procedures, and response systems are also reviewed via weekly safety tail gate meetings. These training sessions have been effective way to prepare staff to deal with hazardous waste and materials.

- Recommendations: No recommended modifications at this time.

Spill Mitigation and Containment Procedure (SSMP 6.7)

- Level of Effectiveness: Appendix F-1 of the SSMP includes an SSOERP which includes an SOP for estimating spill volumes, containment, and mitigation of spills. The new amended Monitoring and Reporting Program (MRP) requirements implemented in September 2013 require a robust water quality monitoring plan that must account for spill travel time in surface water, among several new requirements. The City's current SSOERP Appendix C Water Quality Sampling Procedures document does not meet these requirements.

- Recommendations:
    - Modify SSOERP Appendix C – Water Quality Sampling Procedures to the meet the requirements of the amended MRP.
        - Account for spill travel time in the surface water and scenarios where monitoring may not be possible to safety concerns or access restrictions once an SSO has stopped. This may be estimated by dropping floatable debris, for instance, and measuring the time required to travel a certain distance. This was also recommended during the previous audit but has not been implemented.
        - Expand minimum sampling parameters to include appropriate bacterial indicators that have been specifically listed in the beneficial uses of the City's waterways or more broadly listed by the regional Basin Plan. This was also recommended during the previous audit but has not been implemented.
    - Modify SSOERP Appendix C – Water Quality Sampling Procedures to include a list of all of the required equipment that the employee would need to conduct proper sampling. This was also recommended during the previous audit but has not been implemented.

5.7 FOG Control Program

5.7.1 Compliance

Table 15 – Compliance with SSS WDR D.13.vii – FOG Control Program

SSMP Requirement	Compliance	Deficiencies
vii(a) Public education plan	Yes	The City does have a public education plan, but additional improvements should be implemented (see below)
vii(b) FOG disposal plan	Yes	-
vii(c) Legal authority to prohibit SSOs and blockages caused by FOG discharges	Yes	-
vii(d) BMPs, grease removal devices, recordkeeping, and reporting requirements	Yes	-
vii(e) Authority to inspect and enforce FOG ordinance	Yes	
vii(f) FOG Characterization Assessment and Hot Spot Cleaning Schedule	Yes	-
vii(g) FOG Control Program Measures	Yes	-

5.7.2 Effectiveness of SSMP Elements and Recommended Modifications

Public Education Plan (SSMP 7.2)

- Level of Effectiveness: The City has developed and operates a comprehensive FOG outreach program to residents, restaurants, and the plumbing community on the proper disposal of FOG. The main objective is to educate the City of Roseville residents and restaurants on the proper disposal of FOG to meet or exceed outreach standards set forth in the State General WDR requirements. The program has implemented TV ads, flyers, bill inserts, and websites to convey the message of educating the public on the proper disposal of FOG and other substances. This system appears to be effective in educating the public on the proper disposal of FOG and other substances. Maurice Chaney is listed as responsible party for FOG publica Education Plan in Appendix B-1.

- Recommendations: No modifications recommended at this time.

FOG Disposal Plan (SSMP 7.3)

- Level of Effectiveness: During the past audit periods the Industrial Waste Section (IWS) oversaw the FOG disposal plan with permitted FSEs, however all FOG program-related responsibilities transitioned to WWC in 2016. The City currently has 319 FSEs that are required to and have obtained a FOG wastewater discharge permit (FOG WDP). The same City regulations from the audit period are in place which require permittees to retain a minimum 3 years of documentation to prove the proper cleaning, maintenance, and removal of FOG from grease control devices and the disposal site location. The City provides

information about the permitting process and permit applications on the City website (URL address below) as a resource for businesses and residences within the City.
(https://livesewersmart.com/)
The FOG record keeping requirements for FSEs appear to be effective in that only three FOG-related SSOs occurred over the audit period.

- Recommendations: No modifications recommended at this time.

Record Keeping Requirements (SSMP 7.4)

- Level of Effectiveness: As discussed in the previous section, FOG control program responsibilities transitioned from IWS to WWC in 2016, but during the audit period, IWS operated the program. The City requires in RMC Section 14.14.260 that permitted FSEs retain logbooks on grease control device maintenance cycles, FOG hauling records, sampling data and sludge height monitoring in FOG control devices, BMPs, and records of private lateral SSOs and subsequent mitigation. The recordkeeping requirements and time frames identified in the RMC have enough information necessary for the City to enforce permit requirements of FSEs.

- Recommendations: No modifications recommended at this time.

Legal Authority to Prohibit SSOs and Blockages Caused by FOG Discharges (SSMP 7.5)

- Level of Effectiveness: The RMC Section 14.12.050 provides the City with a FOG ordinance and legal authority to require FOG interceptors when deemed necessary by the director. The ordinance prohibits FOG-related blockages and SSOs and limits the maximum allowable concentration of FOG in FSE discharges at the current level of 100 mg/L of wastewater. This ordinance is effective in providing the City with the tools necessary to minimize FOG discharges into the sewer system.

- Recommendations: No modifications recommended at this time.

BMP, Grease Removal Devices, Recordkeeping, and Reporting Requirements (SSMP 7.6)

- Level of Effectiveness: The City requires all FSEs that discharge FOG to acquire a FOG WDP permit which includes provisions for FSEs to maintain BMPs and grease interceptors, cleaning records, and to report private FOG-related SSOs or blockages. The FOG WDP requirements are effective in providing the City with the tools to limit FOG discharges into the sewer system.

- Recommendations: No modifications recommended at this time.

Inspection and Enforcement Authority – FOG Producers (SSMP 7.7)

- Level of Effectiveness: All FSEs that discharge FOG are required to obtain and comply with a City FOG WDP. Under the permit, the FSE must comply with the FOG ordinance as detailed under the RMC, and the City maintains the legal authority to physically inspect the FSE and determine if it is in compliance. The City possesses effective tools to regulate FOG discharges via a robust FOG ordinance which also requires an

effective FSE inspection program. Under oversight from WWC, the City plans on inspecting at least 294 FSEs each fiscal year During this audit, the city documented 181 FSE inspections for FY 16/17 and 231 for 17/18, which shows effectiveness of the FOG inspection and enforcement authority element of the SSMP.

- Recommendations: No modifications recommended at this time.

FOG Characterization Assessment and Hot Spot Cleaning Schedule (SSMP 7.8)

- Level of Effectiveness: The City has been effective in limiting FOG-related SSOs to two during the three-year audit period by identifying and placing assets impacted by FOG as a last resort on the hot-spot, high frequency 3-month cleaning list. If the City encounters abnormal FOG levels in a pipe it will first reach out to FSEs and residents that it thinks may be contributing to it and distribute pamphlets to them to minimize FOG discharges. If that does not solve the problem, then the asset is put on the hot-spot list. Approximately 60% of the 90 hot-spot assets have FOG-related issues that require significant City resources to clean every 3 months.

- Recommendations:
    - Modify the EU Engineering GIS database to include hotspot assets and FSEs and add them as layers to the maps that WWC receives.

FOG Control Program Measures (SSMP 7.9)

- Level of Effectiveness: The City has established that all FOG-producing FSEs acquire a FOG WDP which limits discharge of FOG, requires proper O&M records, hauling record, BMPs, and other conditions. The FOG Control Program measure provides the City's with an effective tool to limit FOG discharges from FSEs.

- Recommendations: No modifications recommended at this time.

5.8 System Evaluation and Capacity Assurance Plan

5.8.1 Compliance

Table 16 – Compliance with SSS WDR D.13.viii - SECAP

SSMP Requirement	Compliance	Deficiencies
viii(a) Evaluate hydraulic deficiencies	Yes	-
viii(b) Establish design criteria	Yes	-
viii(c) Establish short- and long-term CIP	Yes	-
viii(d) Develop schedule of completion dates for CIP	Yes	-

5.8.2 Effectiveness of SSMP Elements and Recommended Modifications

Evaluation Process – Capacity Enhancement Projects (SSMP 8.2)

- Level of Effectiveness: The City has developed two hydraulic simulation models to identify peak flows in the collection system in 2006. In addition, the City developed a new hydraulic model and System Evaluation and Capacity Assurance Plan (SECAP) in 2017, which was done by Woodard and Curran. The modeling efforts conducted in 2006 and 2017 have been effective in evaluating the system and planning for future growth, which is evident from no capacity-deficiency-related SSOs during this audit period. In 2018, Water Works Engineers (WWE) conducted a follow up I/I study upon the existing 2017 model to further analyze results and identify basins and assets with high I/I response. The results of the 2018 I/I study is being actively used by the City as their I/I reduction program base.

- Recommendations: Modify Appendix I-1 of the SSMP to indicate that the system evaluation and capacity assurance plan will be reviewed and updated every 10 years. This was also recommended during the previous audit but has not been implemented.

Design Criteria (SSMP 8.3)

- Level of Effectiveness: The City established a 10-year, 24-hour peak design storm for the hydraulic wet weather loading of the existing collection system along with flow generation factors based on water use records and flow monitoring data. Based on the lack of capacity-related SSOs during the audit period, it appears the City's capacity design criteria are effective.

- Recommendations: No recommended modifications at this time.

Capacity Enhancement Measures (SSMP 8.4)

- Level of Effectiveness: The SPWA Wastewater Systems Evaluation includes the identification of short and long-term Capital Improvement Project (CIP) to meet current and future wastewater flows. The new hydraulic model introduced in 2017 provides new capacity enhancement measures.

- Recommendations: No modifications recommended at this time.

Capital Improvement Program Schedule (SSMP 8.5)

- Level of Effectiveness: The City lists the goal of the CIP is to develop annual project bundles of approximately $1.5 to $2.0 million based on WWC condition assessment data and the hydraulic model CIP results and subsequent flow monitoring or studies. The CIP schedule is effective in identifying the tasks required to assure hydraulic capacity within the collection system.

- Recommendations: No modifications recommended at this time.

5.9 Monitoring, Measurement, and Program Modifications

5.9.1 Compliance

Table 17 – Compliance with SSS WDR D.13.ix – MMM

SSMP Requirement	Compliance	Deficiencies
ix(a) Maintain metrics to prioritize SSMP activities	Yes	-
ix(b) Measure effectiveness of SSMP elements	Yes	The City does have performance indicators linked with SSMP elements, but additional improvements should be implemented (see below)
ix(c) Assess preventative maintenance program	Yes	-
ix(d) Update elements based on evaluations	Yes	-
ix(e) Identify and illustrate SSO trends	Yes	-

5.9.2 Effectiveness of SSMP Elements and Recommended Modifications

Utility Metrics to Prioritize SSMP Activities (SSMP 9.2)

- Level of Effectiveness: The WWC tracks four categories of utility metrics to monitor and measure the effectiveness of the various elements of this SSMP, which include system information, financial information, sewer maintenance, and performance measures. The city also tracks various performance measures related to various SSMP elements and they are summarized in **Appendix 7.4**. Appendix I has effectively been used to identify and track the specific metrics each of the City's four categories.

- Recommendations: No modifications recommended at this time.

Metrics to Monitor Effectiveness of SSMP (SSMP 9.3)

- Level of Effectiveness: The utility metrics listed in Appendix I-4 pertain to different overseeing departments within the City, and the coordination between these different Departments in measuring/monitoring various metrics and sharing results has been effective in ensuring the SSMP goals have been met.
- Recommendations:
    - Incorporate system and financial measures recommended in **Table 18,** from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP.
    - Update Appendix I-4 and modify it to include document location and review frequency.
    - Modify I-4 – Key Performance Indicators (KPI) FOG section, to reflect the change in responsibilities from IWS to WWC.

Metrics to Assess Preventative Maintenance Program (SSMP 9.4)

- Level of Effectiveness: The City's current utility metrics Appendix I defines the frequency and type of utility metric that is being tracked to measure SSMP effectiveness. This is effective because it allows the city to monitor performance of particular activities and compare against SSO trends to determined data

correlations. These metrics do not all have associated goals or targets, however, which makes it hard to track whether the activity is meeting the intended result.

- Recommendations: Consider addition of recommended PM measures in **Table 18,** from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.

SSMP Performance Monitoring and Update Process (SSMP 9.5)

- Level of Effectiveness: Individual staff oversee various SSMP element performance indicators. The City tracks all revisions/updates with the SSMP using a revision log that is maintained by the LRO. The log is effective documenting changes to the SSMP and encourages the use of the SSMP as a living document.

- Recommendations: No modifications recommended at this time.

SSO Trends – Frequency, Location and Volume (SSMP 9.6)

- Level of Effectiveness: The City tracks a comprehensive list of performance metrics that are included in Appendix I-4 of the SSMP and summarized in **Table 19**. This allows the City to quickly identify and respond to changing trends in SSOs over time. These metrics are monitored on a monthly, quarterly, semi-annual, and annual basis.

- Recommendations:
  - Update Appendix I-3 – SSO History (last update 2013).
  - Update SSO trends data in Appendix I-4 – KPI Benchmarking.
  - Consider addition of recommended SSO measures in **Table 18,** from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.

Table 18 –Recommended Additional Performance Indicators

Description	Performance Indicator	Unit
System Information	Total System Length	miles
	Service Area	sq. miles
	Population	people
	# maintenance Holes	MHs
	# Pump Stations PS/ Lift Station	number
	Sewer < 8 inch	miles
	8 inches < sewer < 15 inches	miles
	15 inches < sewer < 21 inches	miles
	21 inches < sewer < 42 inches	miles
	Average age of system	years
	New sewer main installation	miles
	New sewer lateral installation	miles

	WWC Staff	number
Financial Information	Total annual division budget	$
	Total annual O&M budget	$
	O&M budget of annual	%
	Lift station O&M cost	$
	Lift station O&M cost of annual	%
	Annual capital for sewer rehab	$
	Sewer monthly rate for residents	$
O&M	Certified operators	number
	O&M field staff	number
	Average high velocity cleaning per crew per day	LF
	Total visually inspected per year (not CCTV)	miles
SSO	Number of SSO calls received	number
FOG	Public education outreach budget per year	$
	Public education outreach budget of annual	%

Table 19 – Current Performance Measures to Monitor SSO Trends

Performance Measure	Unit	Target	Source
SSOs - Total number, mains and laterals	Number	-	A, B
SSOs - Total volume, mains and laterals	Gal	-	A, B
SSOs - Total volume recovered	Gal	-	B
SSOs - Total number of wet weather	Number	-	A, B
SSOs - Total volume of wet weather	Gal	-	A, B
SSOs - % of spills caused by FOG (main)	%	-	A, B
SSOs - % of spills caused by roots (main)	%	-	A, B
SSOs - % of spills caused by Vandalism (main)	%	-	A, B
SSOs - caused by LS failures	Number	-	A, B
SSOs - caused by pipe failures	Number	-	A, B
SSOs - % of spill volume caused by FOG (lateral)	%	-	A, B
SSOs - % of spill volume caused by roots (lateral)	%	-	A, B
SSOs - % of spill volume caused by Vandalism (lateral)	%	-	A, B
Customer service requests per year	Number	-	A, B
Sewer odor complaints	Number	-	A, B
Flooding claims per year	Number	-	A, B
Cost of flooding claims per year	$	-	A, B
SSO – Repeats within two years	Number	0	B, C
SSOs - Category 1	Number	0	C, D
SSOs / 100 mi pipe / year - Category 2	Number	2.0	C
SSOs / 100 mi pipe / year - Mainline	Number	0.6	C
SSOs / 100 mi pipe / year - Lateral	Number	8.0	C

A = SSMP section 9.6

B = SSMP Appendix I

C = WW Collections KPIs

D = Program / Performance Reports

5.10 SSMP Program Audits

5.10.1 Compliance

Table 20 – Compliance with SSS WDR D.13.x – SSMP Program Audits

SSMP Requirement	Compliance	Deficiencies
x Conduct periodic audits	Yes	-

5.10.2 Effectiveness of SSMP Elements and Recommended Modifications

Audit Procedures, Roles, and Responsibilities (SSMP 10.2)

- Level of Effectiveness: The City conducts an internal audit biennially to continually measure the effectiveness of the SSMP primarily through evaluating system metrics, performance measures, and reduce SSOs by improving SSMP procedures to better respond to new SSO trends. In addition, the audit evaluates the City's compliance with SSMP requirements, particularly the amended MRP requirements that were formalized in September 2013. The City developed an audit form as a template to record information produced during the internal SSMP audits. This form is included in SSMP Appendix J-2. The previous audit identified many areas of improvement which the City responded and acted on. Some of these recommended improvements were excluded from this audit based on discussions with the City that eliminated the need for them. Others are considered standing and should still be implemented by the City. Generally, the internal audits implemented by the City have been effective in improving the SSMP and turning it into a living document that that is current, practical, and useful for the City.
- Recommendations:
    - Post this SSMP internal audit to the City website.
    - Schedule the next internal SSMP audit for July-August of 2021.
    - Develop a description manual to replace Appendix J-1 and J-2 of the SSMP, to support each KPI element. This manual describes required information for KPI monitoring, including but not limited to:
        - Elements definition
        - How to fill each KPI items
        - Personnel responsible
        - Review frequency

SSMP Program Modification/Update Process (SSMP 10.3)

- Level of Effectiveness: The City developed a program for monitoring, reviewing sewer performance metrics and the effectiveness of SSMP elements on a biennial basis. Based on the results of the SSMP audits, the Wastewater Utility Manager is assigned to initiate/direct corrective actions to respond to deficiencies and enhancements identified in the audit. As determined in the City's SSMP revision log, the City has been prompt in responding to audit and continually strives to implement improvements.

- Recommendations:

- Update the SSMP change log and add it as an appendix to the SSMP, documenting all changes made to the SSMP since its last certification, indicating when an element was changed/updated and who authorized the change. An example of a change log is shown at **Appendix 7.5**. This was also recommended during the previous audit but has not been implemented.
- Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes. This was also recommended during the previous audit but has not been implemented.

5.11 Communication Program

5.11.1 Compliance

Table 21 – Compliance with SSS WDR D.13.xi – Communications Program

SSMP Requirement	Compliance	Deficiencies
xi(a) Communicate on a regular basis with the public and tributary/satellite systems regarding SSMP	Yes	-

5.11.2 Effectiveness of SSMP Elements and Recommended Modifications

Internal Communication – Staff, Utility Commission, and City Council (SSMP 11.2)

- Level of Effectiveness: The WWC has used PowerPoint presentations as a resource to describe the purpose of the SSMP and summarize SSS WDR requirements to the City council and City staff. These presentations are attached to the SSMP website.

- Recommendations:
  - As of September 2013, the State Water board amended the MRP of the SSS WDR and the City produced a training PowerPoint to City staff, council, and stakeholders regarding the update. Attach the PowerPoint to the SSMP website. This was also recommended during the previous audit but has not been implemented.
  - Post Appendices K-1 – WWC WDR awareness Program and K-2 – Sanitary sewer regulations/WDR PowerPoint presentations on the website.
  - Update Appendix K-3 – Two EU newsletters FOG/medications links.

Stakeholder Communication – Residential, Commercial and Industrial (SSMP 11.3)

- Level of Effectiveness: The City communicates regularly with the public and stakeholders via monthly newsletters entitled “EU Today” that includes items regarding sewer utilities. This newsletter is presented online and through bill inserts. A sample newsletter is included in Appendix K of the SSMP. In addition,

the City specifically communicates FOG related items to the community via FOG outreach program over TV ads, flyers, direct mail, and site visits to FSEs.

- Recommendations:
  - Update SSMP Appendix K-4 – FOG Outreach Program with marketing Plan budget & spending and post it on the website. Consider an additional metric to be used in the KPI that reflects the City's performance in terms of FOG outreach program. Few additional metrics are recommended in **Table 18**. This was also recommended during the previous audit but has not been implemented.

Tributary/Satellite Communication (11.4)

- Level of Effectiveness: The City routinely communicates with their satellite partners and has three formal agreements in place that include:
  - The joint exercise of power agreement for the SPWA
  - The agreement regarding the operation of and use of South Placer Regional Wastewater Facilities
  - The funding agreement relating to the South Placer Regional Wastewater Facilities
  - Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).

- Recommendations:
  - Add the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD) as an appendix. This was also recommended during the previous audit but has not been implemented.
  - Modify SSMP 11.4 to include the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD). This was also recommended during the previous audit but has not been implemented.
  - Post Appendix K-5 – Funding agreement related to south placer regional wastewater facilities on the website.

SECTION 6 Audit Summary

This section summarizes the level of compliance of the SSMP with the SSMP requirements identified in subsection D.13 and he identified deficiencies as described in **Section 4.1. Table 22** summarizes the result of this evaluation.

Table 22 – Summary of SSMP Compliance Deficiencies

SSMP Requirement	Compliance	Deficiencies
vi(f) Program to ensure containment of SSO to prevent discharge and minimize adverse impacts on the environment	No	SSOERP does not meet certain water quality monitoring requirements of the amended MRP document.

In addition, **Table 23** lists a summary of all recommendations for this audit.

Table 23 – Summary of Audit Recommendations

SSMP Section	Recommendation	Suggested Timeline for Completion
1.2	Post Appendix A-1 – Roseville's SSMP Development Plan and Implementation Schedule on the website.	
2.1	Modify Appendix B-1: Update City Council positions and add phone numbers (Mayor Carol Garcia, Vice Mayor Susan Rohan, City Attorney Robert Schmitt). Update Commissioners and phone numbers: Chair Blandon Granger, Vice Chair John Speight. Update Liaisons and phone numbers for EU Director Richard Plecker, and Secretary Cheryl Hammond. Update Principal EU engineer and phone number for Jason Shykowski. Update Administrative Analyst and phone number for Maurice Chaney.	
2.1	Post the following Appendices on the website: o Appendix B-1 – Personnel Responsible for SSMP Elements o Appendix B-2 – Personnel Responsible for SSO Reporting o Appendix B-3 – Personnel Responsible for Responding to SSOs Weekly Standby	
2.3	Modify Figure 2-2 Flowchart: Update the WWC Divisions overflow emergency response plan chain of communication to match existing operations, whereby WWTP and LS staff and SCADA alerts should always call the 24-hour call center instead of WWC service staff.	
2.3	Include Figure 2-2 flowchart as Appendix F to the SSOERP (Appendix F-1) and mention in the text.	
3.2	Post Appendix C-1 – Pretreatment Program Enforcement Response Plan on the website.	
3.3	Update the related links for Appendices C-3 and C-4 for sanitary sewer design and construction.	
3.7	Post the following Appendices on the website: o Appendix C-5 – Joint Exercise of Powers Agreement for the South Placer Wastewater Authority o Appendix C-6 – Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities o Appendix C-7 – Wastewater Service Agreement by Contract and Operating Agreement between SASD, SRCSD and City of Roseville	
4.2	Post the following Appendices on the website: o Post Appendix D-1 – City of Roseville Sewer Map Grid System on the website. o Post Appendix D-9 – Mapping Update Policy on the website.	
4.3	Update SSMP Section 4.3 Overview with updated statistics about the City's service area, number of customers, miles of main, number of services, and number of lift stations. Also update the number of WWC employees.	

4.3	Update the following Appendices and post on the website: o Appendix D-2 – Maintenance Cleaning Schedule: Update with Maximo CCMS example o Appendix D-3 – CCTV Video Report o Appendix D-4 – SOP	
4.4	Describe the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections, etc.), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data. This was also included during the previous audit but has not been completed.	
4.4	Document the upcoming transition in responsibilities between WWC and EU Engineering in developing and operating the R&R plan by describing it in the SSMP. Confirm that field observations from WWC field crew are accounted for by EU Engineering when conducting risk assessment. This was also included during the previous audit but has not been completed.	
4.4	Post Appendix D-8 – Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan (Element IVC) on the website.	
4.5	Update the following links: o The CWEA website link. o Appendix D-5 – CWEA Certification Handbook link.	
4.6	Update and post the following Appendices on the website: o Appendix D-6 – Equipment Inventory List o Appendix D-7 – Critical Replace Parts List	
5.2	Update Appendix E-1 – Sanitary Sewer Design link.	
5.3	Update Appendix E-2 – Sanitary Sewer System Construction link.	
5.3	Post Appendix E-3 – Technical Memo, SSMP Preparedness Audit Design and Performance Provisions Element V on the website.	
6.3	The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station. This list should also be updated to incorporate new lift stations at Washington Blvd and 7600 Sierra College. This was also recommended during the previous audit but has not been implemented.	
6.3	Modify Figure 6-2 – SSO Procedure Flow Chat, to report SSO category 1 larger than 1,000 gallons to Cal OES within 2 hours per WDR requirements (currently if > 50,000 gal).	
6.3	Post Appendix F-1 – SSOERP on the website along with corresponding attachments	
6.7	Modify SSOERP Appendix C – Water Quality Sampling Procedures to the meet the requirements of the amended MRP. o Account for spill travel time in the surface water and scenarios where monitoring may not be possible to safety concerns or access restrictions once an SSO has stopped. This may be estimated by dropping floatable debris, for instance, and measuring the time required to travel a certain distance. This was also recommended during the previous audit but has not been implemented. o Expand minimum sampling parameters to include appropriate bacterial indicators that have been specifically listed in the beneficial uses of the City's waterways or more broadly listed by the regional Basin Plan. This was also recommended during the previous audit but has not been implemented.	

6.7	Modify SSOERP Appendix C – Water Quality Sampling Procedures to include a list of all of the required equipment that the employee would need to conduct proper sampling. This was also recommended during the previous audit but has not been implemented.	
7.8	Modify the EU Engineering GIS database to include hotspot assets and FSEs and add them as layers to the maps that WWC receives.	
8.2	Modify Appendix I-1 of the SSMP to indicate that the system evaluation and capacity assurance plan will be reviewed and updated every 10 years. This was also recommended during the previous audit but has not been implemented.	
9.3	Incorporate system and financial measures recommended in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP.	
9.3	Update Appendix I-4 and modify it to include document location and review frequency.	
9.3	Modify I-4 – Key Performance Indicators (KPI) FOG section, to reflect the change in responsibilities from IWS to WWC.	
9.4	Consider addition of recommended PM measures in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.	
9.6	Update Appendix I-3 – SSO History (last update 2013).	
9.6	Update SSO trends data in Appendix I-4 – KPI Benchmarking.	
9.6	Consider addition of recommended SSO measures in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.	
10.2	Post this SSMP internal audit to the City website.	
10.2	Schedule the next internal SSMP audit for July-August of 2021.	
10.2	Develop a description manual to replace Appendix J-1 and J-2 of the SSMP, to support each KPI element. This manual describes required information for KPI monitoring, including but not limited to: o Elements definition o How to fill each KPI items o Personnel responsible o Review frequency	
10.3	Update the SSMP change log and add it as an appendix to the SSMP, documenting all changes made to the SSMP since its last certification, indicating when an element was changed/updated and who authorized the change. An example of a change log is shown at Appendix 7.5. This was also recommended during the previous audit but has not been implemented.	
10.3	Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes. This was also recommended during the previous audit but has not been implemented.	
11.2	As of September 2013, the State Water board amended the MRP of the SSS WDR and the City produced a training PowerPoint to City staff, council, and stakeholders regarding the update. Attach the PowerPoint to the SSMP website. This was also recommended during the previous audit but has not been implemented.	
11.2	Post Appendices K-1 – WWC WDR awareness Program and K-2 – Sanitary sewer regulations/WDR PowerPoint presentations on the website.	
11.2	Update Appendix K-3 – Two EU newsletters FOG/medications links.	

11.3	Update SSMP Appendix K-4 – FOG Outreach Program with marketing Plan budget & spending and post it on the website. Consider an additional metric to be used in the KPI that reflects the City's performance in terms of FOG outreach program. Few additional metrics are recommended in **Table 18**. This was also recommended during the previous audit but has not been implemented.	
11.4	Add the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD) as an appendix. This was also recommended during the previous audit but has not been implemented.	
11.4	Modify SSMP 11.4 to include the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD). This was also recommended during the previous audit but has not been implemented.	
11.4	Post Appendix K-5 – Funding agreement related to south placer regional wastewater facilities on the website.	

SECTION 7 Appendices

7.1 Appendix – Historical SSO Data

7.2 Appendix – SSO Data Comparison Charts

7.3 Appendix – Structural SSO GIS Mapping

7.4 Appendix – Key Performance Indicators

7.5 Appendix – Change Log Example

7.1 Appendix – Historical SSO Data

Dated: FY 15/16, FY 16/17, and FY 17/18

Appendix 7.1 – Historical SSO Data for FY 15/16 to FY 17/18

#	Event ID	Date of SSO	Address	Spill Type	Spill Volume [gal]	Spill Recovered [gal]	Spill Recovery [%]	Spill Cause	Location
1	825330	6/7/2016	208 King	Category 2	2020	2000	99%	Pipe/Structure Failure	Main
2	818220	9/19/2015	217 Cedar St	Category 3	15	15	100%	Roots	LL
3	818891	9/23/2015	218 Judah	Category 3	10	6	60%	Debris-Other	LL
4	819343	10/13/2015	236 Elm St	Category 3	2	1	50%	Roots	LL
5	817820	8/3/2015	271 Spyglass Hill	category 3	13	11	85%	Debris-Rags	LL
6	822789	3/8/2016	319 Coronado	Category 3	3	3	100%	Debris-Rags	LL
7	817564	7/20/2015	320 Grove St	Category 3	10	8	80%	Roots	LL
8	821313	1/8/2016	405 Fourth St	Category 3	10	10	100%	Pipe/Structure Failure	LL
9	824524	4/29/2016	407 Yosemite	Category 3	1	1	100%	Roots	LL
10	819342	10/16/2015	409 Washington Blvd	Category 3	5	4	80%	Roots	LL
11	826670	6/4/2016	417 Shannon Way	Category 3	5	4	80%	Roots	LL
12	819344	10/20/2015	500 Oak St	Category 3	5	1	20%	Roots	LL
13	820342	12/17/2015	503 Oak ridge	Category 3	59	59	100%	Roots	LL
14	820369	12/18/2015	503 Bedford Ct	Category 3	79	79	100%	Roots	LL
15	825184	5/10/2016	503 Loretto	Category 3	5	4	80%	Roots	LL
16	817422	7/15/2015	505 Main St	Category 3	10	10	100%	Roots	LL
17	820331	12/9/2015	524 Main St	Category 3	7	7	100%	Roots	LL
18	822520	2/9/2016	603 Rigby Ct	Category 3	1	1	100%	Roots	LL
19	818888	9/25/2015	705 Oak ridge	Category 3	7	3	43%	Roots	LL
20	824651	5/4/2016	801 Vernon St	Category 3	6	6	100%	Debris-Rags	LL
21	819957	11/24/2015	864 Portside	Category 3	3	2	67%	Roots	LL
22	822330	2/8/2016	900 Main St	Category 3	28	23	82%	Roots	LL
23	820975	12/28/2015	901 Herbert St	Category 3	65	12	18%	Grease	Main
24	824652	5/9/2016	1010 Tamarack Ct	Category 3	2	1	50%	Grease	LL
25	818514	9/19/2015	1011 Tamarack Ct	Category 3	14	14	100%	Pipe/Structure Failure	LL
26	824373	4/15/2016	1013 Shearer St	Category 3	10	10	100%	Roots	LL
27	823160	3/8/2016	1265 Pleasant Grove	Category 3	19	17	89%	Roots	LL
28	821374	1/6/2016	1302 Hedgerow	Category 3	2	2	100%	Roots	LL
29	819956	11/16/2015	1404 McBride	Category 3	2	0	0%	Roots	LL
30	822332	2/9/2016	1428 Gregory Way	Category 3	25	22	88%	Roots	LL
31	820220	11/27/2015	1444 Tiffany Cir	Category 3	5	4	80%	Roots	LL
32	819955	11/13/2015	1528 Oak Tree	Category 3	4	1	25%	Roots	LL
33	818299	9/7/2015	1538 E Colonial Pw	Category 3	21	21	100%	Roots	LL
34	816746	7/4/2015	1601 Russell	Category 3	2	2	100%	Roots	LL
35	825736	5/24/2016	1647 Ashford	Category 3	2	1	50%	Roots	LL
36	819594	10/22/2015	1748 Hillingdon	Category 3	2	2	100%	Roots	LL
37	818910	9/27/2015	4121 Enchanted Cir	Category 3	1	0	0%	Roots	LL
38	821372	1/11/2016	6176 Crater Lake	Category 3	40	40	100%	Roots	LL
39	823936	3/21/2016	7216 Pineschi	Category 3	5	4	80%	Roots	LL
40	831836	12/27/2016	106 Estates	Category 3	2	2	100%	Roots	LL
41	829712	11/7/2016	114 Vernon	Category 3	5	5	100%	Roots	LL
42	832603	2/6/2017	117 Vallejo Ave	Category 3	45	38	84%	Debris-Rags	LL
43	828212	9/13/2016	205 Bonny Knoll	Category 3	3	2	67%	Roots	LL
44	829388	10/20/2016	300 James	Category 3	5	5	100%	Roots	LL
45	829319	10/19/2016	302 Margaret Way	Category 3	2	2	100%	Roots	LL

46	833704	2/28/2017	310 Sierra Blvd	Category 3	20	18	90%	Roots	LL
47	834443	4/9/2017	333 Elfa St (Alley)	Category 3	17	17	100%	Roots	LL
48	834223	3/29/2017	401 Coronado Ave	Category 3	5	5	100%	Roots	LL
49	828445	9/21/2016	411 Greenridge	Category 3	18	16	89%	Roots	LL
50	835208	5/9/2017	529 Dudley	Category 3	3	1	33%	Roots	LL
51	828840	10/3/2016	602 Dove Wy	Category 3	8	7	88%	Debris-Rags	LL
52	830389	11/25/2016	701 Sawyer Ct	Category 3	15	9	60%	Roots	LL
53	830004	11/13/2016	800 Main St	Category 3	47	44	94%	Pipe/Structure Failure	LL
54	827325	7/22/2016	854 Shearer St	Category 3	2	2	100%	Roots	LL
55	832386	1/26/2017	1025 Enwood	Category 3	6	4	67%	Roots	LL
56	830793	12/9/2016	1123 Augusta Wy	Category 3	4	3	75%	Roots	LL
57	832142	1/25/2017	1166 Greenhill Dr	Category 3	17	15	88%	Roots	LL
58	830807	12/13/2016	1217 McKinley Dr	Category 3	760	704	93%	Roots	LL
59	829562	10/27/2016	1302 Coloma	Category 3	68	65	96%	Roots	LL
60	835206	5/10/2017	1311 Wendy Ct	Category 3	4	4	100%	Roots	LL
61	826874	7/26/2016	1402 Crestmont	Category 3	20	15	75%	Roots	LL
62	827536	8/12/2016	1713 Tanglewood Ln	Category 3	5	3	60%	Roots	LL
63	844166	1/18/2018	224 1/2 D St	Category 3	45	42	93%	Roots	LL
64	840980	10/9/2017	245 Duranta	Category 3	10	8	80%	Debris-Other	Main
65	842032	11/30/2017	250 S Harding	Category 3	58	58	100%	Roots	LL
66	847009	4/10/2018	317 Princeton	Category 3	10	10	100%	Roots	LL
67	847760	5/17/2018	326 Grove St	Category 3	3	0	0%	Debris-Rags	LL
68	847278	4/18/2018	329 Alta Vista	Category 3	51	49	96%	Debris-Other	LL
69	843124	12/17/2017	372 Circuit Dr	Category 3	5	1	20%	Roots	LL
70	848005	5/24/2018	376 Circuit Dr	Category 3	3	1	33%	Roots	LL
71	848614	5/31/2018	441 Briggs Ct	Category 3	86	81	94%	Pipe/Structure Failure	Main
72	846885	4/4/2018	531 Vernon	Category 3	20	17	85%	Debris-Other	LL
73	846248	3/2/2018	531 Vernon	Category 3	6	6	100%	Debris-Rags	LL
74	841083	10/24/2017	615 Main St	Category 3	96	10	10%	Pipe/Structure Failure	LL
75	843509	12/11/2017	710 Vernon	Category 3	8	4	50%	Debris-Other	LL
76	848224	5/28/2018	1033 Coloma Way	Category 3	5	1	20%	Pipe/Structure Failure	LL
77	840077	9/15/2017	1102 Fairfeld Ave	Category 3	3	0	0%	Roots	LL
78	843230	12/13/2017	1206 McKinley	Category 3	6	0	0%	Roots	LL
79	848002	5/27/2018	1245 Vista Verde	Category 3	88	77	88%	Debris-Rags	LL
80	843665	12/22/2017	1338 Blossom Hill Way	Category 3	45	45	100%	Roots	LL
81	842779	12/7/2017	1338 Ridge Run	Category 3	52	51	98%	Debris-Other	LL
82	849496	6/30/2018	1413 West Colonial Park Way	Category 3	9	1	11%	Roots	LL
83	849045	6/26/2018	1552 Diamond Wood Cir	Category 3	19	0	0%	Roots	LL
84	844961	2/8/2018	2204 McLaren Dr	Category 3	6	5	83%	Roots	LL
85	847241	4/18/2018	8409 Early Way	Category 3	4	3	75%	Roots	LL
86	840892	9/11/2017	9000 Washington Blvd	Category 3	585	40	7%	Debris-Other	Main
87	843899	1/16/2018	Darling Way Clinton Ave	Category 1	342	333	97%	Contractor Cause	Vactor

7.2 Appendix – SSO Data Comparison Charts

2015/2016 SSO Data Comparison

		Spill Volume		Rec Volume		SSO Duration		Response Time		Duration	Response	Cause		
	EVENT ID	CIWQS	City	CIWQS	City	CIWQS	City	CIWQS	City	>3 hr	>40 min	CIWQS	City	Notes
1	825330	2020	2020	2000	2000	1.048611	1.048611	0.00763889	0.007639	1	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
2	818220	15	15	15	15	0.010417	0.010417	0.02083333	0.020833	0	0	Root Intrusion	Roots	
3	818891	10	10	6	6	0.111111	0.111111	0.02222222	0.022222	0	0	Non-Dispersables	Debris-Other	
4	819343	2	2	1	1	0.011111	0.011111	0.00069444	0.000694	0	0	Root Intrusion	Roots	
5	817820	13	13	11	11	0.025694	0.025694	0.01527778	0.015278	0	0	Non-Dispersables	Debris-Rags	
6	822789	3	3	3	3	0.040972	0.040972	0.02013889	0.020139	0	0	Non-Dispersables	Debris-Rags	
7	817564	10	10	8	8	0.017361	0.017361	0.01875	0.018056	0	0	Root Intrusion	Roots	
8	821313	10	10	10	10	0.032639	0.032639	0.02083333	0.020833	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
9	824524	1	1	1	1	0.020833	0.020833	0.00694444	0.006944	0	0	Root Intrusion	Roots	
10	819342	5	5	4	4	0.01875	0.01875	0.0125	0.0125	0	0	Root Intrusion	Roots	
11	826670	5	5	4	4	0.024306	0.024306	0.01388889	0.013889	0	0	Root Intrusion	Roots	
12	819344	5	5	1	1	0.038194	0.038194	0.01458333	0.014583	0	0	Root Intrusion	Roots	
13	820342	59	59	59	59	0.055556	0.055556	0.00347222	0.003472	0	0	Root Intrusion	Roots	
14	820369	79	79	79	79	0.034722	0.034722	0.01666667	0.016667	0	0	Root Intrusion	Roots	
15	825184	5	5	4	4	0.018056	0.018056	0.00763889	0.006944	0	0	Root Intrusion	Roots	
16	817422	10	10	10	10	0.051389	0.051389	0.13472222	0.009722	0	0	Root Intrusion	Roots	Incorrect arrival time in CIWQS
17	820331	7	7	7	7	0.021528	0.021528	0.00138889	0.001389	0	0	Root Intrusion	Roots	
18	822520	1	1	0	1	0.085417	0.085417	0.075	0.075	0	1	Root Intrusion	Roots	
19	818888	7	7	3	3	0.041667	0.041667	0.01041667	0.135417	0	1	Root Intrusion	Roots	
20	824651	6	6	6	6	0.024306	0.024306	0.00694444	0.006944	0	0	Debris-Rags	Debris-Rags	
21	819957	3	3	2	2	0.001389	0.001389	0.01388889	0.013889	0	0	Root Intrusion	Roots	
22	822330	28	28	23	23	0.016667	0.016667	0.00416667	0.004167	0	0	Root Intrusion	Roots	
23	820975	65	65	12	12	2.791667	2.708333	0.00694444	0.006944	1	0	Grease Deposition (FOG)	Grease	Incorrect start time in CIWQS
24	824652	2	2	1	1	0.018056	0.018056	0.00694444	0.006944	0	0	Grease Deposition (FOG)	Grease	
25	818514	14	14	14	14	0.015972	0.015972	0.01111111	0.011111	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
26	824373	10	10	10	10	0.052083	0.052083	0.03125	0.03125	0	1	Root Intrusion	Roots	
27	823160	19	19	17	17	0.017361	0.017361	0.00694444	0.006944	0	0	Root Intrusion	Roots	
28	821374	2	2	2	2	0.03125	0.03125	0.02083333	0.020833	0	0	Root Intrusion	Roots	
29	819956	2	2	0	0	0.021528	0.021528	0.01111111	0.011111	0	0	Root Intrusion	Roots	
30	822332	25	25	22	22	0.031944	0.031944	0.01111111	0.011111	0	0	Root Intrusion	Roots	
31	820220	5	5	4	4	0.024306	0.024306	0.01388889	0.013889	0	0	Root Intrusion	Roots	
32	819955	4	4	1	1	0.052083	0.052083	0.01388889	0.013889	0	0	Root Intrusion	Roots	
33	818299	21	21	21	21	0.003472	0.003472	0.02291667	0.022917	0	0	Root Intrusion	Roots	
34	816746	2	2	2	2	0.000694	0.000694	0.025	0.025	0	0	Root Intrusion	Roots	
35	825736	2	2	1	1	0.024306	0.024306	0.01388889	0.013889	0	0	Root Intrusion	Roots	
36	819594	2	2	2	2	0.000694	0.000694	0.0125	0.0125	0	0	Root Intrusion	Roots	
37	818910	1	1	1	0	0.020833	0.020833	0.01041667	0.010417	0	0	Root Intrusion	Roots	
38	821372	40	40	40	40	0.002778	0.002778	0.02013889	0.020139	0	0	Root Intrusion	Roots	
39	823936	5	5	4	4	0.007639	0.007639	0.00972222	0.009722	0	0	Root Intrusion	Roots	
	Total	2525	2525	2411	2411	4.867361	4.784028	0.69722222	0.695833	2	3			
	39			95%	95%									
	Avg					2:59:43	2:56:38	0:25:45	0:25:42					

2016/2017 SSO Data Comparison

		Spill Volume		Rec Volume		SSO Duration		Response Time		Duration	Response	Cause		
	EVENT ID	CIWQS	City	CIWQS	City	CIWQS	City	CIWQS	City	>3 hr	>40 min	CIWQS	City	Notes
1	831836	2	2	2	2	0.027778	0.027778	0.013889	0.013889	0	0	Root Intrusion	Roots	
2	829712	5	5	5	5	0.01875	0.01875	0.008333	0.008333	0	0	Root Intrusion	Roots	
3	832603	45	45	38	38	2.84375	2.84375	0.013889	0.008333	1	0	Non-Dispersables	Debris-Rags	Incorrect Not time
4	828212	3	3	2	2	0.004167	0.004167	0	0	0	0	Root Intrusion	Roots	No notification
5	829388	5	5	5	5	0.025694	0.025694	0.011806	0.011806	0	0	Root Intrusion	Roots	
6	829319	2	2	2	2	0.016667	0.016667	0.008333	0.008333	0	0	Root Intrusion	Roots	
7	833704	20	20	18	18	0.242361	0.242361	0.004167	0.004167	1	0	Root Intrusion	Roots	
8	834443	17	17	17	17	0.032639	0.032639	0.022222	0.022222	0	0	Root Intrusion	Roots	
9	834223	5	5	5	5	0.03125	0.03125	0.020833	0.020833	0	0	Root Intrusion	Roots	
10	828445	18	18	16	16	0.184028	0.184028	0.017361	0.017361	1	0	Root Intrusion	Roots	
11	835208	3	3	1	1	0.045139	0.045139	0.004861	0.004861	0	0	Root Intrusion	Roots	
12	828840	8	8	7	7	0.006944	0.006944	0.020139	0.01875	0	0	Non-Dispersables	Debris-Rags	
13	830389	15	15	9	9	0.006944	0.006944	0.017361	0.017361	0	0	Root Intrusion	Roots	
14	830004	47	47	44	44	0.089583	0.089583	0.014583	0.014583	0	0	Root Intrusion	Pipe/Structure Failure	Incorrect cause in CIWQS
15	827325	2	2	2	2	0.013889	0.013889	0.029167	0.029167	0	1	Root Intrusion	Roots	
16	832386	6	6	4	4	0.024306	0.024306	0.013889	0.013889	0	0	Root Intrusion	Roots	
17	830793	4	4	3	3	0.018056	0.018056	0.007639	0.007639	0	0	Root Intrusion	Roots	
18	832142	17	17	15	15	0.1875	0.1875	0.010417	0.010417	1	0	Root Intrusion	Roots	
19	830807	760	760	704	704	2.140278	2.140278	0.009722	0.009722	1	0	Root Intrusion	Roots	
20	829562	68	68	65	65	0.086806	0.086806	0.008333	0.008333	0	0	Root Intrusion	Roots	
21	835206	4	4	4	4	0.042361	0.042361	0.009722	0.009722	0	0	Root Intrusion	Roots	
22	826874	20	20	15	15	0.002778	0.002778	0.027778	0.025	0	0	CS Mainentance Caused Spill/Damage	Roots	Incorrect cause in CIWQS
23	827536	5	5	3	3	0.010417	0.010417	0.003472	0.003472	0	0	Root Intrusion	Roots	
	Total	1081	1081	986	986	6.102083	6.102083	0.297917	0.288194	5	1			
	23			91%	91%									
	Avg					6:22:03	6:22:03	0:18:39	0:18:03					

2017/2018 SSO Data Comparison

		Spill Volume		Rec Volume		SSO Duration		Response Time		Duration	Response	Cause		
	EVENT ID	CIWQS	City	CIWQS	City	CIWQS	City	CIWQS	City	>3 hr	>40 min	CIWQS	City	Notes
1	840077	3	3	0	0	0.018056	0.018056	0.007639	0.006944	0	0	Root Intrusion	Roots	Incorrect not time in CIWQS
2	840892	585	585	40	40	0.041667	0.027778	0	0.010417	0	0	Debris from Construction	Debris-Other	Incorrect not time in CIWQS
3	840980	10	10	8	8	0.020833	0.020833	0.008333	0.008333	0	0	Debris from Construction	Debris-Other	
4	841083	96	96	10	10	1.354167	1.354167	0.003472	0.003472	1	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
5	842032	58	58	58	58	0.006944	0.006944	0	0.006944	0	0	Root Intrusion	Roots	Incorrect not time in CIWQS
6	842779	52	52	51	51	0.029861	0.029861	0.015972	0.015972	0	0	Debris-Wipes/Non-Dispersables	Debris-Other	
7	843509	8	8	4	4	2.088194	2.088194	0.013889	0.013889	1	0	Debris-Wipes/Non-Dispersables	Debris-Other	Event ID does not match CIWQS ID
8	843124	5	5	1	1	0.017361	0.017361	0.03125	0.03125	0	1	Root Intrusion	Roots	
9	843230	6	6	0	0	0.026389	0.026389	0.015972	0.016667	0	0	Root Intrusion	Roots	
10	843665	11	45	11	45	0.005556	0.005556	0.020833	0.020833	0	0	Root Intrusion	Roots	Incorrect volume reports on CIWQS
11	843899	342	342	333	333	0.007639	0.007639	0	0	0	0	Other (specify below)	Contractor Cause	
12	844166	45	45	42	42	2.024306	2.024306	0.008333	0.008333	1	0	Root Intrusion	Roots	
13	844961	6	6	5	5	0.047222	0.047222	0.03125	0.03125	0	1	Root Intrusion	Roots	
14	846248	6	6	6	6	0.002083	0.002083	0	0.021528	0	0	Debris-Rags	Debris-Rags	Incorrect not time in CIWQS
15	846885	20	20	17	17	0.017361	0.017361	0.007639	0.007639	0	0	Debris-Wipes/Non-Dispersables	Debris-Other	
16	847009	10	10	10	10	0.071528	0.061111	0.025694	0.025694	0	0	Root Intrusion	Roots	
17	847241	4	4	3	3	0.170139	0.170139	0.00625	0.00625	1	0	Root Intrusion	Roots	
18	847278	51	51	49	49	0.035417	0.035417	0.025	0.025	0	0	Debris-Wipes/Non-Dispersables	Debris-Other	
19	847760	3	3	0	0	0.041667	0.041667	0	0	0	0	Debris-Rags	Debris-Rags	
20	848002	88	88	77	77	0.788194	0.788194	0.011806	0.017361	1	0	Debris from Construction	Debris-Rags	
21	848005	3	3	1	1	0.021528	0.021528	0.011111	0.011111	0	0	Root Intrusion	Roots	
22	848224	5	5	1	1	0.073611	0.073611	0.015278	0.015278	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
23	848614	86	86	81	81	0.202083	0.202083	0.011111	0.011111	1	0	Pipe Structural Problem/Failure - Installation	Pipe/Structure Failure	
24	849045	19	19	0	0	0.013889	0.013889	0.016667	0.016667	0	0	Root Intrusion	Roots	Incorrect not time in CIWQS
25	849496	9	9	1	1	0.00625	0.00625	0.024306	0.022222	0	0	Root Intrusion	Roots	Incorrect not time in CIWQS
	Total	1531	1565	809	843	7.131944	7.107639	0.311806	0.354167	6	2			
				53%	54%									
	25													
	Avg					6:50:48	6:49:24	0:17:58	0:20:24					

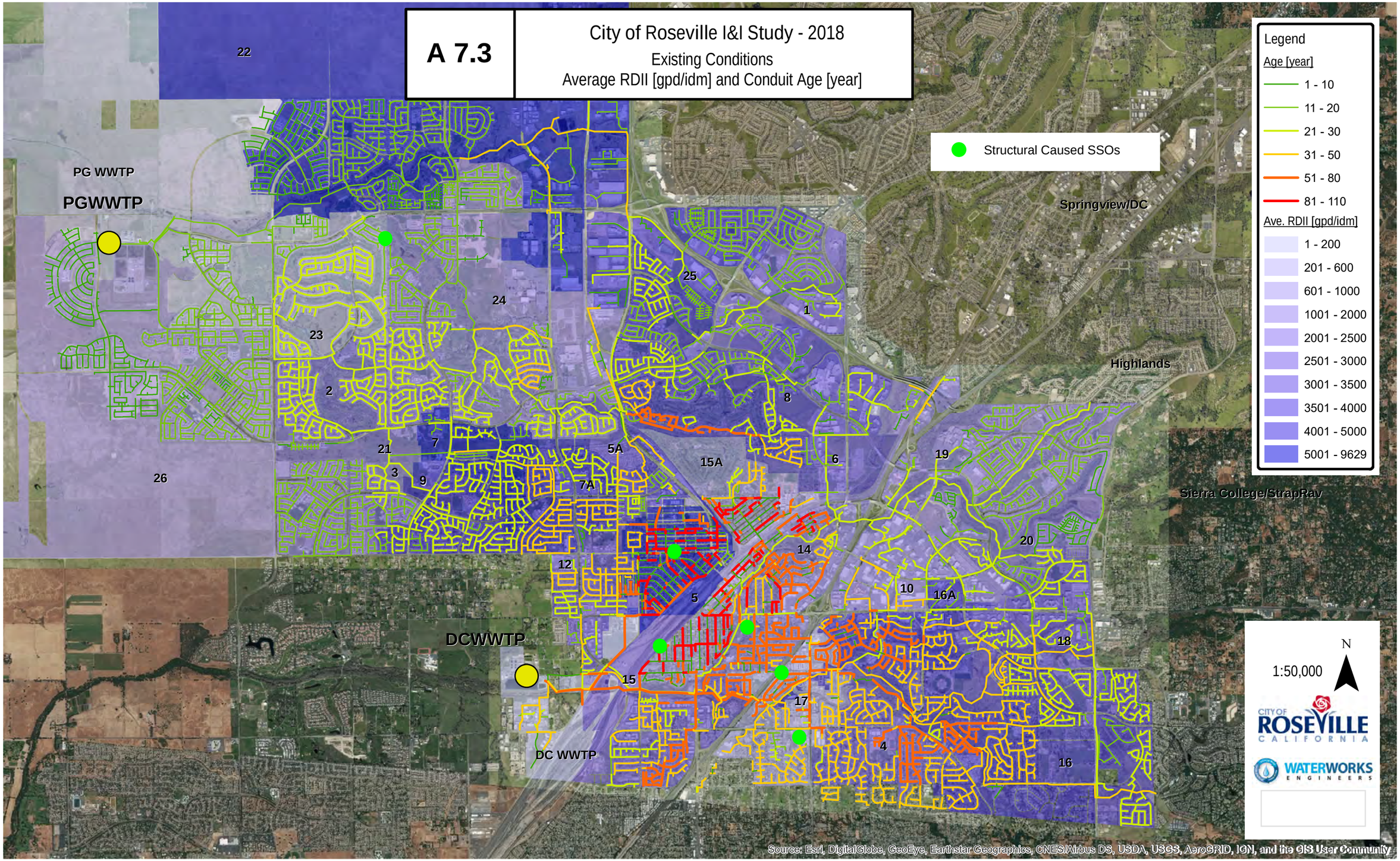
7.3 Appendix – Structural SSO GIS Mapping

A 7.3

City of Roseville I&I Study - 2018

Existing Conditions

Average RDII [gpd/idm] and Conduit Age [year]



7.4 Appendix – Key Performance Indicators

SSS WDR Element	SSS WDR Ref.	Description	Performance Indicator	Unit	Target	KPI Data FY 14/15	KPI Data FY 15/16	KPI Data FY 16/17	KPI Data FY 17/18	KPI Data FY 18/19	Audit Frequency	Responsible Party
Organization	D.ii.c	Chain of Communication	Average response to customer inquiry	Minute	40	19.58	23	20	17		Quarterly	WW Superintendent
			Total customer service requests	Number	0	915	1549	533	302		Quarterly	WW Superintendent
			Total sewer odor complaints	Number	0	9	43	50	39		Quarterly	WW Superintendent
			Average rating in customer service card	Number	5	5	5	5	5		Quarterly	WW Superintendent
O&M	D.iv.a	Maps	Average response time to map update requests	Days	90	90	90	90	90		Quarterly	WW Superintendent
	D.iv.b	PM Activities	Manholes Inspection performed	Number	0	2493	3575	1547	1511		Quarterly	WW Superintendent
			Sewer main flushed per year	Miles	250	284	248	295	283.12		Quarterly	WW Superintendent
			Sewer laterals mechanically cleaned (eeled) per year	staff	8	14.32	14.77	7.41	1.07		Quarterly	WW Superintendent
			Working staff time to PM program	%	80%	85%	82%	82%	84%		Quarterly	WW Superintendent
			Number of customer accounts per WW employee	Number	561	1517	1554	1772	1757		Quarterly	WW Superintendent
			Average cost of hydro cleaning	$/lf	$0.36	$0.32	$0.33	$0.29	$0.32		Annually	WW Superintendent
			Average cost of sewer mechanical cleaning	$/lf	$1.60	$1.20	$0.77	$0.94	$1.66		Annually	WW Superintendent
	D.iv.c	R&R Plan	Manholes rehabilitated	Number	50	0	0	0	0		Quarterly	WW Superintendent
			Sewer main CCTV inspected per year	Miles	30	75	84.32	59.71	64.1		Quarterly	WW Superintendent
			Sewer laterals CCTV inspected per year	Miles	16	26	35.71	32.51	36.14		Quarterly	WW Superintendent
			Sewer cleanouts installed per year	Number	75	76	83	144	141		Quarterly	WW Superintendent
			Sewer Laterals Rehabilitated	Number	50	48	60	85	89		Quarterly	WW Superintendent
			Total miles rehabed or replaced per year (main)	Miles	5	6	0	0	1.07		Annually	EU Engineering
			Total miles rehabed or replaced per year (lateral)	Miles	0.25	0.16	0.27	0.66	0.42		Annually	EU Engineering
			Annual capitol budget sewer rehab/replacement	$/M	$1.80	$1.05	$1.36	$2.61	$2.25		Annually	WW Superintendent
			Average cost of CCTV main	$/lf	$0.53	$0.41	$0.41	$0.36	$0.40		Annually	WW Superintendent
			Average cost of CCTV lateral	$/lf	$1.34	$1.11	$1.15	$1.04	$1.00		Annually	WW Superintendent
	D.iv.d	Training	On the job accidents	Number	0	5	3	3	4		Quarterly	EU Safety Coordinator
	D.iv.e	Critical Parts	% of required numberof identified critical parts are stocked	%	100	100	100	100	100		Annually	Materials Technician
Design	D.v.a&b	Construction	% of new sewer main accepted vs. inspected	%	100	100	100	100	100		Annually	WW Supervisor
			% of new sewer lateral accepted vs. inspected	%	100	100	100	100	100		Annually	WW Supervisor
OERP	D.vi.a	Notification	Average response time to SSO	Minutes	40	20	23	20	17		Quarterly	WW Superintendent
	D.vi.b	SSO Response	Average SSO duration (main)	Minutes	40	n/a	70	0	0		Quarterly	WW Superintendent
			Average SSO duration (lateral)	Minutes	40	n/a	37	48	36		Quarterly	WW Superintendent
FOG	D.vii.a	Public Education	FOG public education outreach program events per year	Number	4	3	4	3	3		Annually	Environmental Utilities PIO
	D.vii.b	FOG Disposal	Gallons of FOG curbside pickup per year	Gallons	25	179.75	293.1	373.25	296		Quarterly	Refuse Division
	D.vii.d	BMPs &Devices	% of total FSE's with grease removal devices	%	90	90	97	98	98		Annually	Ind Waste Technician
			% of total FSE's with a variance	%	5	4	4	4	4		Annually	Ind Waste Technician
	D.vii.e	FOG Inspections	FSE FOG inspections per year	Number	294	n/a	n/a	181	231		Quarterly	Ind Waste Technician
			Number of new FSE permits issued per year	Number	5	n/a	n/a	40	46		Quarterly	Ind Waste Technician
	D.vii.f	Hot Spots	% of hotspot pipes CCTV inspected each year	%	100%	100%	100%	100%	100%		Annually	WW Supervisor
			Number of SSO's caused by hot spots	Number	0	0	0	0	0		Quarterly	WW Superintendent
			SSO volume casued by hot spots	Gallons	0	0	0	0	0		Quarterly	WW Superintendent
			Total number of SSO's mains and laterals	Number	76	42	39	24	25		Quarterly	WW Superintendent
			Total volume SSO's mains and laterals	Gallons	2000	1202	2523	1086	1565		Quarterly	WW Superintendent

MMM	D.ix.e	SSO Trends	% of total SSO volume recovered	%	100	94.5	95.42	91.25	53.86		Quarterly	WW Superintendent
			Total number of wet weather SSO's	Number	0	0	0	0	0		Quarterly	WW Superintendent
			Total volume of wet weather SSO's	Gallons	0	0	0	0	0		Quarterly	WW Superintendent
			% of SSO's caused by FOG (main)	%	1	50	50	0	0		Quarterly	WW Superintendent
			% of SSO's caused by roots (main)	%	70	0	0	0	0		Quarterly	WW Superintendent
			% of SSO's caused by debris/rags (main)	%	0	0	0	0	0		Quarterly	WW Superintendent
			Number of SSO's caused by LS failure	Number	0	0	0	0	0		Quarterly	WW Superintendent
			Number of SSO's caused by pipe/structural failures	Number	0	0	1	1	3		Quarterly	WW Superintendent
			% of SSO's caused by FOG (laterals)	%	10	0	0	0	0		Quarterly	WW Superintendent
			% of SSO's casued by roots (laterals)	%	75	77.5	84	87	48		Quarterly	WW Superintendent
			% of SSO's casued by debris/rags (laterals)	%	0	12.5	10.8	9	28		Quarterly	WW Superintendent
			Repeats SSO's within two years	Number	0	2	0	0	0		Quarterly	WW Superintendent
			Number of Category 1 SSO's	Number	0	0	0	0	1		Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year- Category 2	Number	2	0	1	0	0		Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year - lateral	Number	15	16.26	15.04	9.35	8.81		Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year -mains	Number	0.6	0.4	0.4	0	0.19		Quarterly	WW Superintendent
			Flooding claims per year	Number	0	1	0	0			Quarterly	WW Superintendent
			Total Cost of claims per year	$	0		0	0			Quarterly	Risk Management

7.5 Appendix – Change Log Example

3.5 References

3.5.1 SSMP Sample Change Log

{Insert Enrollee Name}
Sewer System Management Plan
Change Log

Date	SSMP Element/ Section	Description of Change/Revision Made	Change Authorized By:

Appendix 10-5

SSPM Audit Fiscal Years 18/19, 19/20 and 20/21

CITY OF ROSEVILLE
Sewer System Management Plan (SSMP)
Three-Year Audit for FY 18/19 – FY 20/21

Date: October 21

Prepared by: Michael Fisher, P.E., Water Works Engineers
Adam Correa, E.I.T., Water Works Engineers

Assisted by: Dan Pruden, City Wastewater Superintendent

Table of Contents

SECTION 1 Audit Objectives 3
SECTION 2 Agency Background / System Information 4
2.1 Review of Last SSMP Audit 5
2.2 Review of FY 18/19, FY 19/20, and FY 20/21 8
SECTION 3 SSO Trends 9
3.1 Historical SSO Data 9
3.2 Performance Measures 13
SECTION 4 Audit Procedure 14
4.1 Review of SSMP Compliance 14
4.2 Review of SSMP Effectiveness 14
SECTION 5 Audit of SSMP Elements 15
5.1 Goals 15
5.2 Organization 15
5.3 Legal Authority 17
5.4 Operation and Maintenance Program 19
5.5 Design and Performance Provisions 23
5.6 Overflow Emergency Response Plan 24
5.7 FOG Control Program 27
5.8 System Evaluation and Capacity Assurance Plan 30
5.9 Monitoring, Measurement, and Program Modifications 31
5.10 SSMP Program Audits 35
5.11 Communication Program 36
SECTION 6 Audit Summary 38
SECTION 7 Appendices 42
7.1 Appendix – Historical SSO Data ..... A
7.2 Appendix – SSO Data Comparison Charts ..... B
7.3 Appendix – Structural SSO GIS Mapping C
7.4 Appendix – Key Performance Indicators ..... D
7.5 Appendix – Change Log Example ..... E

List of Tables

Table 1 – Overview of Collection System 4
Table 2 – Summary of Findings from the Last SSMP Internal Audit 5
Table 3 – CIWQS and City SSO Historic Data 9
Table 4 – Regional Comparison of SSO Data 11
Table 5 – Leading Causes of SSOs in FY15-18 (results from FY13-15 in parenthesis) 12
Table 6 – Performance Measures 13
Table 7 – Compliance with SSS WDR D.13.i - Goals 15
Table 8 – Compliance with SSS WDR D.13.ii - Organization 15
Table 9 – Compliance with SSS WDR D.13.iii – Legal Authority 17
Table 10 – Compliance with SSS WDR D.13.iv – O&M Program 19
Table 11 – Performance Measures related to SSS WDR D.13.iv(b) 20
Table 12 – Performance Measures related to SSS WDR D.13.iv (c) 22
Table 13 – Compliance with SSS WDR D.13.v – Design and Performance Provisions 23
Table 14 – Compliance with SSS WDR D.13.vi - OERP 24
Table 15 – Compliance with SSS WDR D.13.vii – FOG Control Program 27
Table 16 – Compliance with SSS WDR D.13.viii - SECAP 30
Table 17 – Compliance with SSS WDR D.13.ix – MMM 31
Table 18 –Recommended Additional Performance Indicators 32
Table 19 – Current Performance Measures to Monitor SSO Trends 34
Table 20 – Compliance with SSS WDR D.13.x – SSMP Program Audits 35
Table 21 – Compliance with SSS WDR D.13.xi – Communications Program 36
Table 22 – Summary of SSMP Compliance Deficiencies 38
Table 23 – Summary of Audit Recommendations 38

List of Figures

Figure 1 – Number of SSOs per Fiscal Year 10
Figure 2 – Average Gallons per SSO 11
Figure 3 – Average SSO Volume per Cause 12

SECTION 1 Audit Objectives

This report covers the results of the required Sewer System Management Plan (SSMP) internal audit process for the City of Roseville (City) for fiscal years 2018-2019 (FY 18/19), 2019-2020 (FY 19/20), and 2020-2021 (FY 20/21). The goal of the SSMP is to provide a written framework and plan for properly managing, operating, and maintaining all parts of the sanitary sewer system (collection system). The SSMP will help the City minimizing sanitary sewer overflows (SSOs) and complying with the California State Water Resources Control Board (SWRCB) order No. 2006-0003-DWQ, the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDR). The SSMP audit evaluates the effectiveness of the SSMP, by reviewing the performance of the collection system against the performance measures used by the City to evaluate compliance with requirements of the SSS WDRs.

The intention of the SSMP audit is to help the SSMP evolve over time as a "living document" that City continually adjusts after identifying potential enhancements and implementing changes to address any deficiencies to the management, operation and maintenance of the City sanitary sewer collection system. Recently, the SWRCB is proposing a statewide sanitary sewer system order reissuance. The proposed reissuance, which will be built on the existing general order, with a primary focus of reducing the statewide spill volume. This audit briefly discusses the proposed reissued order by the SWRCB and considers recommendations for future compliance.

The City is committed to completing the SSMP internal audit (Audit) on a biennial basis that is consistent with the procedure outlined in Appendix J-1 of the SSMP. The City completed its first Audit for years 2010 and 2011, but subsequently contracted Water Works Engineers (WWE) to conduct the FY 11/12-12/13, FY 13/14-14/15, and FY15/16-17/18 audits. This audit reviews results of the FY 18/19, FY 19/20, and FY 20/21, which is a three-year program. The key objective of this Audit is to review the SSMP compliance, implementation, and effectiveness. This report includes the following key tasks:

1. Review records from previous Audits and confirm deficiencies have been addressed (SECTION 2).
2. Evaluate the City's historical SSO data and performance measures listed in the SSMP (SECTION 3).
3. Using a standardized audit procedure detailed in Section 4, identify deficiencies and provide recommendations that could improve the effectiveness of the SSMP and its compliance with the future reissue order.
4. Analyze the City's preventative maintenance (PM) and rehabilitation and replacement (R&R) programs as it relates to the operation and maintenance of the collection system (Section 5.4).
5. Review the Sanitary Sewer Overflow Emergency Response Plan (SSEORP) for SSOs and identify improvements as needed (Section 5.6).
6. Document all findings during the Audit and retain it on file (SECTION 6).

SECTION 2 Agency Background / System Information

The City of Roseville, in Placer County, is located approximately 16 miles north of the City of Sacramento. Along Interstate 80, Roseville is located adjacent to the City of Rocklin in the north-east and the City of Citrus Heights in the south. The City covers approximately 43 square miles near the base of the foothills of the Sierra Mountains. Typical elevations are within a range of 250 to 100 feet of sea level with an average slope across the City of 0.5% from east to west. Several streams flow through the City (i.e., Dry Creek, Pleasant Grove Creek, Kaseburg Creek, Linda Creek, Cirby Creek, Secret Ravine, and Miners Ravine.).

The City is responsible for the operation and maintenance of a continually growing collection system that has grown over 6% since the last internal audit to now serve approximately 147,000 people. **Table 1** lists key information about the City collection system over the past three Audit periods.

Table 1 – Overview of Collection System

Audit	FY 11/12 – 12/13	FY 13/14 – 14/15	FY 15/16 – 17/18*	FY18/19-20/21*
Miles of Mainline	485.52	501.11	515.7	578.4
Miles of laterals (lower)	235.3	238	266	293
Pump stations	14	15	16	17
Sewer service lateral connections	41,568	43,619	47,638	51605
Population served	122,060	128,832	137,213	146590
WWC Staff	25	28	29	33
Annual Budget (FY1/ FY2/ FY3)	$3,400,000/ $3,800,00	$3,700,000/ $4,000,000	$5,069,000/ $5,279,0000	$5,572,264/$5,702,649/$6,258,201
Category 1 SSOs	2	0	1	0
Category 2 SSOs	75	0	1	0
Category 3 SSOs	-	89	85	114

*Three-year audit

The City treats wastewater conveyed through its collection system at two regional wastewater treatment plants that are both owned and operated by the City (i.e., Dry Creek and Pleasant Grove WWTPs). Two other satellite collection systems owned and operated by other agencies (i.e., South Placer Municipal Utility District and Placer County) discharge directly into the City's collection system. A small portion of the City's collection system discharges outside of Roseville and into the Sacramento Area Sewer District (SASD) collection system, which is treated at the Sacramento Regional WWTP. The City is a part of the Central Valley Region 5 (Sacramento sub-region) of the SWRCB.

2.1 Review of Last SSMP Audit

The previous audit for of the City SSMP was conducted by WWE for FY 15/16-17/18 and was completed in September 2019. In the last Audit, a list of approximately 54 recommended actions to address deficiencies or improve the effectiveness of the City SSMP were listed. **Table 2** summarizes identified deficiencies and associated action items, along with a description of the status of the task (i.e., Completed, Ongoing Updates, In/No Progress, Considered) outlined in the last SSMP audit. documents on the City's website and based on information from City staff.

Table 2 – Summary of Findings from the Last SSMP Internal Audit

Element	Action Item	Status
2 – Organization	Post Appendix A-1 – Roseville's SSMP Development Plan and Implementation Schedule on the website.	In Progress
	Modify Appendix B-1: Update City Council positions and add phone numbers (Mayor Carol Garcia, Vice Mayor Susan Rohan, City Attorney Robert Schmitt). Update Commissioners and phone numbers: Chair Blandon Granger, Vice Chair John Speight. Update Liaisons and phone numbers for EU Director Richard Plecker, and Secretary Cheryl Hammond. Update Principal EU engineer and phone number for Jason Shykowski. Update Administrative Analyst and phone number for Maurice Chaney.	Ongoing Progress
	Post Appendix Appendix B-1 – Personnel Responsible for SSMP Elements on the website.	No Progress
	Post Appendix Appendix B-2 – Personnel Responsible for SSO Reporting on the website.	No Progress
	Post Appendix Appendix B-3 – Personnel Responsible for Responding to SSOs Weekly Standby on the website.	No Progress
	Modify Figure 2-2 Flowchart: Update the WWC Divisions overflow emergency response plan chain of communication to match existing operations, whereby WWTP and LS staff and SCADA alerts should always call the 24-hour call center instead of WWC service staff. This was also included during the previous audit but has not been completed.	No Progress
	Include Figure 2-2 flowchart as Appendix F to the SSOERP (Appendix F-1) and mention in the text.	No Progress
3 - Legal Authority	Post Appendix C-1 – Pretreatment Program Enforcement Response Plan on the website.	No Progress
	Update the related links for Appendices C-3 and C-4 for sanitary sewer design and construction.	No Progress
	Post Appendix C-5 – Joint Exercise of Powers Agreement for the South Placer Wastewater Authority on the website.	No Progress
	Post Appendix C-6 – Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities on the website.	In Progress

	Post Appendix C-7 – Wastewater Service Agreement by Contract and Operating Agreement between SASD, SRCSD and City of Roseville on the website.	No Progress
4 - O&M	Post Appendix D-1 – City of Roseville Sewer Map Grid System on the website.	No Progress
	Post Appendix D-9 – Mapping Update Policy on the website.	No Progress
	Update SSMP Section 4.3 Overview with updated statistics about the City's service area, number of customers, miles of main, number of services, and number of lift stations. Also update the number of WWC employees.	Ongoing Progress
	Update Appendix D-2 – Maintenance Cleaning Schedule: Update with Maximo CCMS example and post on the website.	No Progress
	Update Appendix D-3 –CCTV Video Report and post on the website.	No Progress
	Update Appendix D-4 –SOP and post on the website.	No Progress
	Describe the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections, etc.), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data. This was also included during the previous audit but has not been completed.	No Progress
	Document the upcoming transition in responsibilities between WWC and EU Engineering in developing and operating the R&R plan by describing it in the SSMP. Confirm that field observations from WWC field crew are accounted for by EU Engineering when conducting risk assessment. This was also included during the previous audit but has not been completed.	No Progress
	Post Appendix D-8 – Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan (Element IVC) on the website.	No Progress
	Update the CWEA website link.	No Progress
	Update Appendix D-5 – CWEA Certification Handbook Link.	No Progress
	Update and post Appendix D-6 – Equipment Inventory List on the website.	No Progress
	Update and post Appendix D-7 – Critical Replace Parts List on the website.	No Progress
5 - DPP	Update Appendix E-1 – Sanitary Sewer Design link.	No Progress
	Update Appendix E-2 – Sanitary Sewer System Construction link.	No Progress
	Post Appendix E-3 – Technical Memo, SSMP Preparedness Audit Design and Performance Provisions Element V on the website.	No Progress
6 - OERP	The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station. This list should also be updated to incorporate new lift stations at Washington Blvd and 7600 Sierra College. This was also recommended during the previous audit but has not been implemented.	No Progress
	Modify Figure 6-2 – SSO Procedure Flow Chat, to report SSO category 1 larger than 1,000 gallons to Cal OES within 2 hours per WDR requirements (currently if > 50,000 gal).	No Progress
	Post Appendix F-1 – SSOERP on the website along with corresponding attachments	No Progress
	Modify SSOERP Appendix C – Water Quality Sampling Procedures to the meet the requirements of the amended MRP.	No Progress

	o Account for spill travel time in the surface water and scenarios where monitoring may not be possible to safety concerns or access restrictions once an SSO has stopped. This may be estimated by dropping floatable debris, for instance, and measuring the time required to travel a certain distance. This was also recommended during the previous audit but has not been implemented. Expand minimum sampling parameters to include appropriate bacterial indicators that have been specifically listed in the beneficial uses of the City's waterways or more broadly listed by the regional Basin Plan. This was also recommended during the previous audit but has not been implemented.	
	Modify SSOERP Appendix C – Water Quality Sampling Procedures to include a list of all of the required equipment that the employee would need to conduct proper sampling. This was also recommended during the previous audit but has not been implemented.	No Progress
7 – FOG Control Program	Modify the EU Engineering GIS database to include hotspot assets and FSEs and add them as layers to the maps that WWC receives.	No Progress
8 – SECAP	Modify Appendix I-1 of the SSMP to indicate that the system evaluation and capacity assurance plan will be reviewed and updated every 10 years. This was also recommended during the previous audit but has not been implemented.	No Progress
9 – MMM	Incorporate system and financial measures recommended in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP.	No Progress
	Update Appendix I-4 and modify it to include document location and review frequency.	No Progress
	Modify I-4 – Key Performance Indicators (KPI) FOG section, to reflect the change in responsibilities from IWS to WWC.	No Progress
	Consider addition of recommended PM measures in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.	No Progress
	Update Appendix I-3 – SSO History (last update 2013).	No Progress
	Update SSO trends data in Appendix I-4 – KPI Benchmarking.	In Progress
	Consider addition of recommended SSO measures in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.	No progress
10.2	Post this SSMP internal audit to the City website.	Complete
10.2	Schedule the next internal SSMP audit for July-August of 2021.	Complete
10 – SSMP Program Audits	Develop a description manual to replace Appendix J-1 and J-2 of the SSMP, to support each KPI element. This manual describes required information for KPI monitoring, including but not limited to: o Elements definition o How to fill each KPI items o Personnel responsible o Review frequency	No Progress
	Update the SSMP change log and add it as an appendix to the SSMP, documenting all changes made to the SSMP since its last certification, indicating when an element was changed/updated and who authorized the change. An example of a change log is shown at Appendix 7.5. This was also recommended during the previous audit but has not been implemented.	No Progress
	Document the submittal process for proposed changes to the SSMP. The process	No Progress

	may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes. This was also recommended during the previous audit but has not been implemented.	
11 – Communication	As of September 2013, the State Water board amended the MRP of the SSS WDR and the City produced a training PowerPoint to City staff, council, and stakeholders regarding the update. Attach the PowerPoint to the SSMP website. This was also recommended during the previous audit but has not been implemented.	No Progress
	Post Appendices K-1 – WWC WDR awareness Program and K-2 – Sanitary sewer regulations/WDR PowerPoint presentations on the website.	No Progress
	Update Appendix K-3 – Two EU newsletters FOG/medications links.	No Progress
	Update SSMP Appendix K-4 – FOG Outreach Program with marketing Plan budget & spending and post it on the website. Consider an additional metric to be used in the KPI that reflects the City's performance in terms of FOG outreach program. Few additional metrics are recommended in **Table 18**. This was also recommended during the previous audit but has not been implemented.	No Progress
	Add the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD) as an appendix. This was also recommended during the previous audit but has not been implemented.	No Progress
	Modify SSMP 11.4 to include the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD). This was also recommended during the previous audit but has not been implemented.	No Progress
	Post Appendix K-5 – Funding agreement related to south placer regional wastewater facilities on the website.	No Progress

2.2 Review of FY 18/19, FY 19/20, and FY 20/21

The City has prioritized eliminating SSOs from the collection system and was successful preventing Category 1 and Category 2 SSOs during the FY 18/19, FY 19/20 and FY 20/21. The city experienced one Category 3 spill during FY 18/19 which resulted in a 409 gallon spill, which occurred on a lower lateral, caused by roots. Two Additional Category 3 spills over 100 gallons, from which, one occurred on a lower later (caused by pipe failures) and the other occurred on a mainline, which was caused by cross connection with a conduit. All remaining spills were less than 100 gallons, of which, seven of them occurred on mainlines.

SECTION 3 SSO Trends

3.1 Historical SSO Data

A total of 114 Category 3 SSOs occurred during the audit period FY 18/19 (31 SSOs), FY 19/20 (33 SSOs), and FY 20/21 (50 SSOs). **Appendix 7.1** of this report includes the date, location, type, volume, volume recovered, and recovery percentage of total volume of each SSO spill.

One of the City-defined tasks of the Audit is to compare the information submitted to the publicly available California Integrated Water Quality System (CIWQS) database with internal City records. The WWC Superintendent verifies that SSO data in CIWQS is accurate and matches the SSO Field Report Forms. **Table 3** shows an organized view of key data present in the CIWQS and City internal records and shows discrepancies, for the three-year audit period. As shown, Table 3 shows how accurately CIWQS data reflect the City's records, with few exceptions, details of which are listed in **Appendix 7.2**. The information presented in the "Internal Records" column represents a summarized view of various performance measures maintained by the City.

Table 3 – CIWQS and City SSO Historic Data

SSO Historical Data since last SSMP Internal Audit	CIWQS Data FY 18/19	Internal Records FY 18/19	CIWQS Data FY 19/20	Internal Records FY 19/20	CIWQS Data FY 20/21	Internal Records FY 20/21
Total number of potential SSO service calls received	-	288	-	523	-	325
Total number of SSOs reported	31	31	33	33	50	50
Total volume of SSOs [Gal]	869	869	580	520	825	823.7
Total volume of SSOs that reached waters of the state [Gal]	0	0	0	0	0	0
Volume of SSOs recovered [%]	38%	38%	84%	85%	64%	64%
Average SSO response time [h:mm]	0:19	0:21	0:22	0:21	0:18	0:18
Average SSO duration time [h:mm]*	3:59	4:00	4:35	1:47**	6:13	6:12

* Including long-duration SSO events (> 3 hours long) that increased the average SSO duration.

**Missing one City Internal report with large Spill duration. Spill was entered in CIWQS.

The following section investigates the City's historical SSO data to identify potential SSO trends to provide insight into measuring the effectiveness of the City SSMP and future improvements in reducing SSOs. **Figure 1** highlights the category and number of SSOs since FY 06/07. The SWRCB defined three new SSO categories as of September 13th, 2013. A category 1 SSO is currently defined as a spill of any volume that reaches surface water. A Category 2 SSO is currently defined as a spill greater than or equal to 1,000 gallons that does not reach surface water. A Category 3 SSO is currently defined as a spill less than 1,000 gallons that does not reach surface water. **Figure 1** shows an increasing trend on the total number of SSO events per year since FY 16/17 and is limited to Category 3 SSOs only.

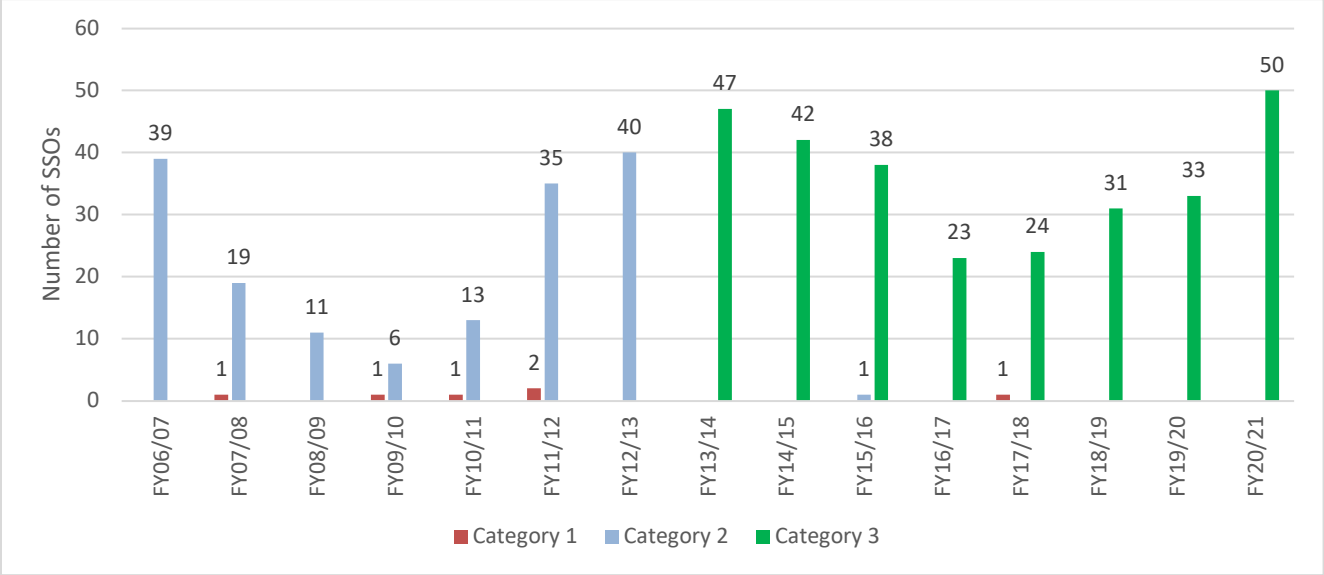


Figure 1 – Number of SSOs per Fiscal Year

With the goal of minimizing the spill volume, another valuable source of analysis is comparing average gallons spilled per SSO across fiscal years. **Figure 2** demonstrates average volume per SSO event since 2007, which equally weight out all spills and shows an annual average. Although, the number of SSO events has increased over the years (See **Figure 1**), **Figure 2** indicates that the average spill volume per incident has decreased during this audit period. It appears that the average volume was higher due to several outliners including the three high-volume spills occurring in FY18/19 (two spills) and FY 19/20 (one spill). As mentioned, during FY 18/19 one of these high-volume incidents occurred by a pipe/structure failure (105 gallons, all of which was recovered). The second spill was caused by roots in a lower lateral (409 gallons, zero gallons recovered). In FY 19/20 one large spill occurred in a mainline caused by Contractor in a mainline (154 gallons, 149 gallons recovered). Given the past records, **Figure 2** shows an average value of about 38 gal/SSO throughout the years. After reviewing the City's performance measures, it appears that the resulted high average volumes were most likely incidental driven and were not related to the SSMP effectiveness or the system performance. In addition, analysis of the City's SSO data showed that in about 21% of the events the City's staff did not see an active spill, in other words, these spills were ended before arrival of the staff. These incidents correspond to 11% of the total spill volume during this audit period.

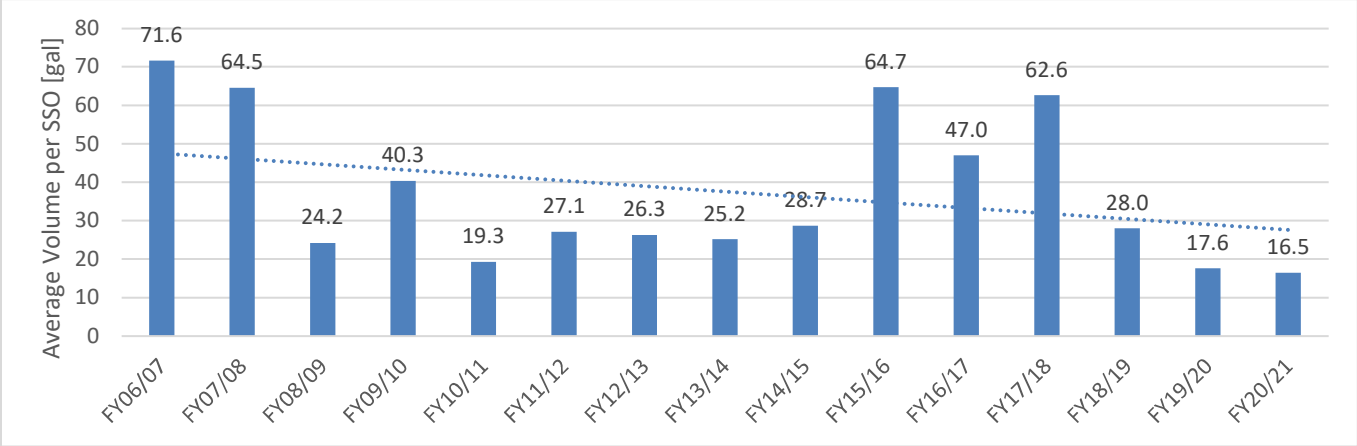


Figure 2 – Average Gallons per SSO

Here, City's average number of SSOs and average spill volume per SSO per 100 miles of sewer pipeline are compared with the results from sub-region Central Valley –Sacramento (part of State Water Control Board Region 5) and California (State), to provide regional context and insight into the City's collection system performance. **Table 4** summarizes these findings, gathered from the SWRCB's annual performance reports. These reports and their related data can be found online at the following link:

https://www.waterboards.ca.gov/water_issues/programs/sso/#prgm_docs

https://www.waterboards.ca.gov/board_info/exec_dir_rpts/

The board has not published similar data for fiscal years later than 2016. However, as shown in **Table 4**, the City average SSOs/100 miles of sewer pipe is far below the average of all municipal agencies in the Central Valley Sacramento region 5, and is lower than the State. The City's average spill volume/100 miles of sewer pipe is an order of magnitude smaller than the state, which highlights how effective the City's SSO preventative maintenance and response program has been.

Table 4 – Regional Comparison of SSO Data

Fiscal Year	Average # of SSOs per 100 miles			Average Spill Volume per 100 miles [gallons]		
	City	Region 5	State	City	Region 5	State
2011/12	4.88	12.4	4.28	132	3,396	13,925
2012/13	5.85	12.72	4.38	154	4,371	8,194
2013/14	6.39	11.96	4.38	160	2,878	4,587
2014/15*	5.71	9.91	4.65	163	6,324	11,484
2015/16*	4.99	8.76	4.01	323	7,484	25,134
2016/17	2.94	Not Available		138	Not Available	
2017/18	3.20	Not Available		196	Not Available	
2018/19	3.56	Not Available		100	Not Available	
2019/20	3.79	Not Available		67	Not Available	
2020/21	3.76	Not Available		95	Not Available	

* These values do not include laterals in the total system size.

Table 5 demonstrates the leading causes of SSOs in this audit period compared to the previous audit period (FY 15/16-17/18). Generally, given the three-year period, the number of SSOs caused by roots has increased, but the volume has decreased by 16%, which results in a lower average SSO volume. Also, FOG related events have decreased during this period. Furthermore, no Capacity-caused SSOs was observed in this audit period. However, SSOs caused by debris and pipe/structure failure have experienced a notable increase in quantity of spills. With debris spills increasing by 53%, while Pipe Failures increased by 157%.

Table 5 – Leading Causes of SSOs in FY18-21 (results from FY15-18 in parenthesis)

By Number		By Volume		By Average Volume per SSO	
Cause	**Number**	**Cause**	**Gallons**	**Cause**	**Gallons**
Roots	70 (62)	Roots	1325.5 (1576)	Roots	19 (25)
FOG	1 (2)	FOG	10 (67)	FOG	10 (34)
Debris	23 (15)	Debris	475.2 (908)	Debris	21 (61)
Pipe Failure	18 (7)	Pipe Failure	244 (2278)	Pipe Failure	14 (325)
Capacity	0 (0)	Capacity	0 (0)	Capacity	0 (0)
Others*	2 (1)	Others*	155 (342)	Others*	78 (342)
Total	114 (87)	Total	2212.7 (5171)	Total	141 (787)

*Includes one vacuum truck incident for this audit, and one contractor incident with a bored conduit.

To track the leading SSO cause, WWE summarized the average SSO volume per cause for the past four audit periods, results are shown in **Figure 3**. The actions planned because of this SSMP Audit will target the leading causes to most effectively reduce the number and more importantly spill volume of SSOs. As shown here, the FY 18/19 - FY 20/21 period has experienced similar average volume of root caused SSOs, lower FOG related spill volumes, and similar average volume for debris caused spills. However, as shown here, pipe failure and incidental SSOs volumes have decreased during this period which would typically correspond with SSOs occurring on residential lateral or small diameter pipes.

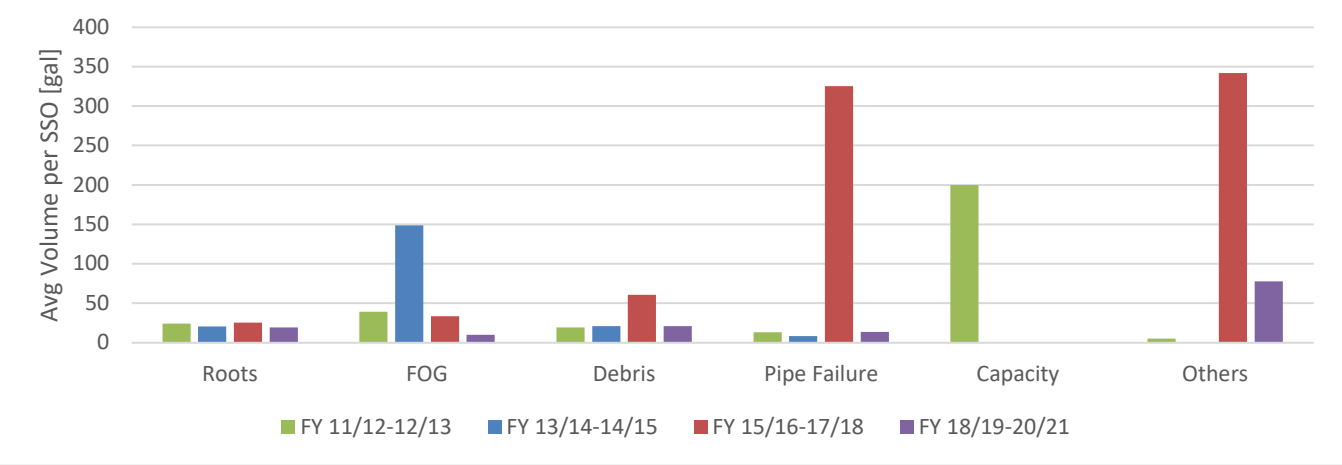


Figure 3 – Average SSO Volume per Cause

3.2 Performance Measures

To achieve proper operation and management of the sanitary sewer system and to prevent SSOs, the City utilizes multiple performance measures to assess the effectiveness of the SSMP. While the City may use other performance measures for evaluation purposes, the following measures are typically used:

- SSO Rate (SSOs per 100 miles of collection system piping per year)
- Number of SSOs for each cause (roots, FOG, debris, pipe failure, capacity, lift station failures, etc.)
- Average SSO volume (gallons)
- Percentage of SSOs greater than 100 gallons (%)
- Percentage of SSOs reported as Category 1 (%)
- Percentage of SSO volume recovered (%)
- Percentage of SSO volume reaching a surface water (%)

The City's SSO records were queried to analyze each performance measure from FY 11/12 to FY 20/21 and the data is shown in **Table 6** below. Overall, there was an increase in the number of SSOs during this audit period, however the City's SSO average has decreased compared to previous years, which was due to smaller-volume incidents, caused by roots and debris.

Table 6 – Performance Measures

Performance Measures		FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
SSO Rate, SSOs/100 mi		4.88	5.85	6.39	5.71	4.99	2.94	3.20	3.56	3.79	5.74
SSO Cause	FOG	0	1	4	1	2	0	0	1	0	0
	Roots	18	30	32	31	30	20	12	20	17	33
	Debris*	8	2	8	2	4	2	9	8	12	3
	Pipe/Structure Failure	6	4	2	7	3	1	3	2	3	13
	Vandalism	1	0	0	0	0	0	0	0	0	0
	Capacity	0	2	0	0	0	0	0	0	0	0
	Construction	0	0	0	1	0	0	0	0	0	0
	Unknown/Other	2	3	1	0	0	0	1	0	1	1
TOTAL # of SSO		35	42	47	42	39	23	25	31	33	50
Average SSO Vol (gal)		27	26	25	29	65	47	63	28	18	16
% of SSOs > 100 gal		2.8%	2.3%	2.1%	4.7%	2.6%	4.3%	8.0%	6.5%	3.0%	0.0%
Category 1 % of Total SSOs		0%	7%	0%	0%	0%	0%	22.3%	0%	0%	0%
% of Spill Volume Recovered		99%	63%	94%	93%	95%	91%	54%	38%	84%	64%
% of Spill Vol Reaching Surface Water		0%	37%	0%	0%	0%	0%	0.4%	0%	0%	0%

*Includes non-dispersible and rags

SECTION 4 Audit Procedure

In accordance with SSS WDRs Section D.13, the primary SSMP audit objective is to focus on evaluating the effectiveness of implementing the SSMP and the City's compliance with the SSMP requirements identified in the SSS WDRs Order. Also, according to recent SWRCB WDR workshops, it is expected that the statewide general order reissuance, with the primary focus on reducing spill volume, emphasis on the following:

- **Requirements focused on spill volume:** Although the total number of spills has increased over the past few years, the CIWQS data has shown that the state experienced lower volume of spills. While, majority are caused by tree roots, the proposed reissuance will likely require enrollees to demonstrate system-specific spill reduction programs.
- **Improved Data Quality**: With the goal of enhancing data accuracy, additional measures are being considered to provide higher quality spill volume data, such as maintaining certified operators and emphasizing on staff training.
- **Enhanced Order Enforceability**: To address poor performing systems and those with lack of SSMP implementation.
- **To Incentivize Order Compliance**: To recognize and acknowledge systems with good performance.
- **Effective Planning for System Resilience**: To ensure effective and adaptive planning for spill reduction.

This section details the procedures used to meet the existing order, while considering future expectations.

4.1 Review of SSMP Compliance

This Audit assessed the City's SSMP against the requirements outlines in the SSS WDR. The subsections of **SECTION 5** listed below are organized by SSMP elements. Each subsection contains a table which lists the SSS WDR section D.13 requirements and City's level of compliance of the SSMP with that requirement. The compliance status of the City's SSMP is indicated with one of the following ratings: ***Yes*** *– in compliance,* ***No*** *– not in compliance, or* ***N/A*** *– not applicable with a written justification in the SSMP.* If there are any compliance deficiencies, then an explanation of the deficiency is given. Each deficiency will have a recommended SSMP enhancement, which may include action items, adjustments, and/or timelines of the planned completion.

4.2 Review of SSMP Effectiveness

After the SSMP compliance assessment compared to SSS WDR requirements, an evaluation of the effectiveness of the SSMP elements has been conducted to comply with the requirements for SSMP audits per subsection D.13 of the SSS WDR. The discussion review if the plan outlined for each section is being followed, and how effective the plan is at reaching the desired objectives. Recommendations will be made where appropriate based on the results of this Audit to identify tasks to improve the effectiveness of SSMP activities. Performance metrics will be used wherever possible to measure the effectiveness of the SSMP elements.

This section will not repeat the information and plans presented in each section of the SSMP and is intended to evaluate the effectiveness of the stated plans for each SSMP element. The reader should reference the City's SSMP to obtain the information referenced by this Audit.

A summary of the recommended modifications made through this Audit is included in **SECTION 6**.

SECTION 5 Audit of SSMP Elements

This section evaluates all elements of the City's SSMP. Each section of this chapter is associated with one of the eleven elements of the SSMP in accordance with SS WDR section D.13 requirements. Each element is evaluated for compliance and effectiveness described above in 4.1 and 4.2 respectively.

5.1 Goals

5.1.1 Compliance

Table 7 – Compliance with SSS WDR D.13.i - Goals

SSMP Requirement	Compliance	Deficiencies
i Properly manage, operate, and maintain all portions of the City's wastewater collection system.	Yes	-

5.1.2 Effectiveness of SSMP Elements and Recommended Modifications

Roseville Goals (SSMP 1.2)

- Level of Effectiveness: The City currently has seven goals identified in the SSMP. The goals of the City recorded in the SSMP have been effective in guiding the City's activities to support the objective of the SSS WDR to protect the waters of the state.

- Recommendations: Post Appendix A-1 – Roseville's SSMP Development Plan and Implementation Schedule on the website. This was also included during the previous audit but has not been completed.

5.2 Organization

5.2.1 Compliance

Table 8 – Compliance with SSS WDR D.13.ii - Organization

SSMP Requirement	Compliance	Deficiencies
ii(a) Identify Legally Responsible Official (LRO)	Yes	-
ii(b) SSMP responsibility and organization chart	Yes	-
ii(c) Chain of communication for reporting SSOs	Yes	-

5.2.2 Effectiveness of SSMP Elements and Recommended Modifications

List Legally Responsible Official (LRO) (SSMP 2.1)

- Level of Effectiveness: The City has Ken Glotzbach (EU Director) and Dan Pruden (Wastewater Collections Superintendent) listed in CIWQS as LROs. Todd Jordan (Process Engineer) is listed as a data

submitter. Appendix B-1 of the SSMP is not currently publicly accessible. The current organization of data submitters and LROs has proven effective in reporting SSOs to meet the requirements of the September 2013 amended Monitoring and Reporting Program.

- Recommendations:
  - Modify Appendix B-1: Update City Mayor, Vice Mayor, City Attorney, and City Council positions and add phone numbers (Mayor Krista Berrnasconi, Vice Mayor Bruce Houdesheldt, City Attorney Michelle Sheidenberger, Councilmember Tracy Mendonsa). Update Commissioners and phone numbers: Chair Elaine Webb, Vice Chair James knox, Commissioners: Edward Belski, John Delancy, Richard Demarchi, Einar Maisch. Update Liaisons and phone numbers for EU Director Richard Plecker, and Secretary Pam Walsh. Update Assistant EU Director Ken Glotzbach, Wastewater Collection Superintendent Dan Prudent, Waste Water Collection Supervisor positions, Principal EU engineer and phone number for Jason Shykowski. Update Administrative Analyst and phone number for Maurice Chaney.
  - Update and Post the following Appendices on the website:
    - Appendix B-1 – Personnel Responsible for SSMP Elements This was also included during the previous audit but has not been completed.
    - Appendix B-2 – Personnel Responsible for SSO Reporting This was also included during the previous audit but has not been completed.
    - Appendix B-3 – Personnel Responsible for Responding to SSOs Weekly Standby. This was also included during the previous audit but has not been completed.

SSMP Responsibility Organization Chart (SSMP 2.2)

- Level of Effectiveness: The SSMP Responsibility Organization Chart (SSMP Figure 2-1) is current in the SSMP and lists a descriptive definition of each individual's responsibilities. The chart is effective in defining the work flow and responsibilities of the individuals as well as departments within the City of Roseville's operations with relation to the SSMP. The narrative of the general position description is outlined in Section 2.2 of the SSMP.

- Recommendations: No recommendations at this time.

Chain of Communication Reporting Chart (SSMP 2.3)

- Level of Effectiveness: The internal notification contact chart is current and readily available to all wastewater utility district staff. The city of Roseville has a 24-hour call center, standardized answering script and procedures, and a full-time staff wastewater utility customer service representative. The individual's job is to respond to any service calls including but not limited to: backups, SSOs, smell complaints, etc. This has been an effective and well-utilized service, as service calls have increased and the average SSO response time has remained below the 40-minute target. Only 6 SSO response times were above 40 minutes during the audit period (0:42:00, 0:45:00, 0:46:00, 0:41:00, 0:43:00, and 1:05:00) which totaled 51 gallons in spills and the remaining 95% of the responses were under 40 min.

- Recommendations:
  - Modify Figure 2-2 Flowchart: Update the WWC Divisions overflow emergency response plan chain of communication to match existing operations, whereby WWTP and LS staff and SCADA alerts should always call the 24-hour call center instead of WWC service staff per Appendix B-3. This was also included during the previous audit but has not been completed.
  - Include Figure 2-2 flowchart as Appendix F to the SSOERP (Appendix F-1) and mention in the text. This was also included during the previous audit but has not been completed.

5.3 Legal Authority

5.3.1 Compliance

Table 9 – Compliance with SSS WDR D.13.iii – Legal Authority

SSMP Requirement	Compliance	Deficiencies
iii(a) Prevent illicit discharges	Yes	-
iii(b) Properly designed and constructed sewers	Yes	-
iii(c) Ensure access to laterals owned/maintained by City	Yes	-
iii(d) Limit the discharge of FOG and other debris	Yes	-
iii(e) Enforce any violation of City ordinances	Yes	-

5.3.2 Effectiveness of SSMP Elements and Recommended Modifications

Industrial Pretreatment Program (SSMP 3.2)

- Level of Effectiveness: The Industrial Waste Section (IWS) administers the Pretreatment Program Enforcement Response Plan and implements enforcement procedures specified by the U.S. EPA in accordance with 40CFR 403.5 (f) (5). The IWS has the authority to permit and monitor significant industrial users (SIUs) and small commercial/industrial dischargers. The implementation of the Pretreatment Program Enforcement Response Plan has been effective in providing the City the authority to control and prevent illicit discharges to the collection system.

- Recommendations: Post Appendix C-1 – Pretreatment Program Enforcement Response Plan on the website. This was also included during the previous audit but has not been completed.

Municipal Code and Design and Construction Standards (SSMP 3.3)

- Level of Effectiveness: The City's design and construction standards regulate the preparation of plans for construction of additions/improvements to the sewer. The Roseville Municipal Code (RMC) section 14.12.040 requires that building sewer and connection into the public sewer system conform to the requirements of the building and plumbing code or other applicable rules and regulations of the City. The RMC also requires an installation of a lateral line clean out at the point of connection with the public sewer. The City design and construction standards and the RMC section 14.12.040 have been effective in providing the City the legal authority to properly design and construct the sewers and connections.

- Recommendations: Post Appendices C-2, C-3, and C-4 for Municipal Code, sanitary sewer design and construction.

Municipal Code – Sewer Access Authority (SSMP 3.4)

- Level of Effectiveness: The Charter in the RMC, Article X Sec. 10.01 designates the authority to access City owned and operated facilities, either within or outside its corporate limits, number of activities including, but not limited to maintenance, inspection, and repair related to sewage collection. The authority gives legal access to all City-owned sewer facilities. The City has not had issues to date with lack of access to facilities based on legal authority. The current legal authority to access sewer facilities has been effective in supporting the goals of the SSMP.

- Recommendations: No recommended modifications at this time.

Municipal Code – FOG (SSMP 3.5)

- Level of Effectiveness: The RMC chapter 14.14 is a robust FOG ordinance that lists regulatory requirements, fees, administrative requirements, and authority to enforce regulatory compliance. This ordinance is effective in identifying the required equipment and BMPs for FSEs as well as indicating the authority of the City to enforce the FOG requirements.

- Recommendations: No recommended modifications at this time.

Municipal Code – Enforcement Authority (SSMP 3.6)

- Level of Effectiveness: The RMC section 14.12.060 authorizes the City to penalize violators of the City's code requirements. At the discretion of the City attorney, an individual may be charged with an infraction or a misdemeanor. The authority to penalize infractions that may cost City resources has proven effective to maintain proper use of the wastewater collection system.

- Recommendations: No recommended modifications at this time.

Inter-Agency Agreements and Satellite Systems (SSMP 3.7)

- Level of Effectiveness: The City maintains a Joint Exercise of Powers Agreement for the South Placer Wastewater Authority and Agreement Regarding the Operation and use of the South Placer Regional Wastewater Facilities. In addition, the City has an Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).

- Recommendations: Post the following Appendices on the website:
    - Appendix C-5 – Joint Exercise of Powers Agreement for the South Placer Wastewater Authority. This was also included during the previous audit but has not been completed.

- Appendix C-6 – Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities. This was also included during the previous audit but has not been completed.
- Appendix C-7 – Wastewater Service Agreement by Contract and Operating Agreement between SASD, SRCSD and City of Roseville. This was also included during the previous audit but has not been completed.

5.4 Operation and Maintenance Program

5.4.1 Compliance

Table 10 – Compliance with SSS WDR D.13.iv – O&M Program

SSMP Requirement	Compliance	Deficiencies
iv(a) Collection system maps	Yes	-
iv(b) Preventive O&M activities	Yes	-
iv(c) Rehabilitation and Replacement (R&R) plan	Yes	The City does have an R&R plan in place, but additional improvement should be implemented (see below)
iv(d) Training	Yes	The City provides regular training but additional improvements to the training program should be implemented (see below)
iv(e) Equipment and critical replacement parts	Yes	-

5.4.2 Effectiveness of SSMP Elements and Recommended Modifications

Roseville Collection System Maps (SSMP 4.2)

- Level of Effectiveness: The city maintains electronic and hard copy maps of the sanitary sewer system and storm drain system. Updates to the electronic map system are translated to the field crew trucks via single sheet prints, if required. Full hard copy mapbooks are updated on a yearly basis. The City Mapping Update Policy is followed to ensure mapping is correct and completed in GIS and made available to the required users. The mapping policy document is added to the SSMP as an appendix and is posted to the City's SSMP website page.

- Recommendations: Post the following Appendices on the website:
  - Appendix D-1 – City of Roseville Sewer Map Grid System. This was also included during the previous audit but has not been completed.
  - Appendix D-9 – Mapping Update Policy. This was also included during the previous two audits but has not been completed.

Roseville Preventive Operations & Maintenance Activities (SSMP 4.3)

- Level of Effectiveness: WWC engages in various programs to complete routine preventative maintenance activities, which include jet cleaning, lateral eeling, chemical root control, CCTV inspections, visual inspections, and lift station maintenance.

  According to **Table 6**, the City experienced an increase in root-caused SSOs during the last year of the audit period, which is explained by the decrease of total sewer lateral mechanical cleaning (eeled), as shown in **Table 11**. The City outperformed preventative maintenance targets and past performance measures as evident in **Table 11,** with the exception of Sewer main flushed per year (miles) during FY 18/19, and FY 19/20, which may have been related to an equipment maintenance issue (see **Table 12**). Other performance measures or benchmarks are reviewed in full in the recommendations of **Section 5.9**.

Table 11 – Performance Measures related to SSS WDR D.13.iv(b)

Performance Measure	Target	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
Total number of sewer maintenance field staff	NA	23	24	24	24	26	24	26	26
Sewer main flushed per year (miles)	250	330	284	248	295	283	226.1	235.9	296.14
Sewer laterals mechanically cleaned (eeled) per year (miles)	8	13.89	14.69	14.77	7.41	1.07	268	265	74
Average high velocity cleaning per crew per day [LF]	1670	2393	2922	2618	3115	2998	N/A	N/A	N/A
Average cost of hydro cleaning [$/LF]	0.36	0.30	0.32	0.33	0.29	0.32	0.34	0.34	0.34
Average cost of sewer mechanical cleaning [$/LF]	1.60	1.23	1.20	0.77	0.94	1.66	0.30	0.30	0.30

- Recommendations:
  - Update SSMP Section 4.3 Overview with updated statistics about the City's service area, number of customers, miles of main, number of services, and number of lift stations. Also update the number of WWC employees.
  - Update the following Appendices and post on the website:
    - Appendix D-2 – Maintenance Cleaning Schedule: Update with Maximo CCMS example. This was also included during the previous audit but has not been completed.
    - Appendix D-3 – CCTV Video Report. This was also included during the previous audit but has not been completed.

- Appendix D-4 – SOP. This was also included during the previous audit but has not been completed.

Rehabilitation and Replacement Plan (SSMP 4.4)

- Level of Effectiveness: The City regularly CCTV inspects pipelines using the national Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) coding standard. The City evaluates the risk of failure for each asset based on the various data sources it maintains (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections) and assigns high risk assets in a ranked Rehabilitation and Replacement (R&R) Plan. If an R&R project is not completed in one year, then it is rolled over to the next. The City maintains a 5-year list of planned R&R CIP projects.

  The city creates an asset group in their Maximo CCMS, based on their condition assessment and PACP scores. This ongoing list is prioritized and provided to Tech Services, when CIP budget is prepared, to put a CIPPP project together. Also, while performing routine hydro work in the grids, the vactor group performs manhole inspections of each asset. Once there are enough manholes that require rehabilitation, the City produces a list with asset IDs that will be sent to Tech Services for manhole Rehabilitation CIP. In the past 9 years, the City has not discovered a substantial number of manholes to develop a manhole CIP project.

  In accordance with the City-utilized performance measures related to inspection and R&R program activities as displayed in **Table 12**, the City has met or exceeded majority of inspection targets during this audit program. However, total miles of mainline rehabilitated during this three-year were less than the target. SSOs caused by structural failure during the audit period are overlaid with the City's 2018 I/I study and shown in **Appendix 7.3.** As shown, most of these spills occurred in regions with older pipes, such as region 5, 15, and 15A. These regions are also known for their higher I/I response and capacity issues during wet seasons. The City has been actively performing I/I analysis and smoke testing to identify system defects in these regions, results of which are incorporated in CIP decision makings.

Table 12 – Performance Measures related to SSS WDR D.13.iv (c)

Performance Measure	Target	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
Total miles visually inspected per year (not CCTV)	0.25	0.25	0.25	0.18	0.25	0.25	0	0	0
Lateral CCTV inspected per year [miles]	16	14.69	26	35.71	32.51	36.14	29.74	22.46	27.88
Main CCTV inspected per year [miles]	30	53.27	65	84.32	59.71	64.1	119.9	94.65	38.57
Laterals rehabilitated per year [number]	50	90	43	60	85	89	74	82	110
Laterals rehabilitated or replaced per year [miles]	0.25	0.39	0.16	0.27	0.66	0.42	0.45	0.46	0.62
Mains Rehabilitated or replaced per year [miles]	5	2.65	6	0	0	1.07	0.05	0.09	3.4
Average Cost of CCTV (lateral) [$/LF]	1.34	1.46	1.11	1.15	1.04	1.00	1.24	1.29	1.28
Average cost of CCTV (main) [$/LF]	0.53	0.55	0.41	0.41	0.36	0.40	0.60	0.75	1.85

- Recommendations:
  - Describe the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections, etc.), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data. This was also included during the previous two audit but has not been completed.
  - Document the upcoming transition in responsibilities between WWC and EU Engineering in developing and operating the R&R plan by describing it in the SSMP. Confirm that field observations from WWC field crew are accounted for by EU Engineering when conducting risk assessment. This was also included during the previous two audits but has not been completed.
  - Post Appendix D-8 – Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan (Element IVC) on the website. This was also included during the previous audit but has not been completed.

Training (SSMP 4.5)

- Level of Effectiveness: The WWC requires employees be certified with CWEA, DMV, CPR, First Aid, Confined Space Policy, Gas Detector Policy, as well be trained in equipment safety, maintain OSHA rules, and review material safety data sheets.

  The existing training program has been effective in supporting a well-trained staff. Over this audit period WWC has reported 10 on the job accidents in FY 18/19, 8 in FY 19/20, and 6 in FY 20/21, which are more than previous audits however the number of accidents has declined year over year. WWC strives for

zero-on-the-job accidents and has weekly tail-gate training meetings and monthly training sessions where WWC staff is trained in part via various SOPs.

- Recommendations: Update the following links:
  - The CWEA website link. This was also included during the previous audit but has not been completed.
  - Appendix D-5 – CWEA Certification Handbook link. This was also included during the previous audit but has not been completed.

Equipment and Critical Replacement Parts (SSMP 4.6)

- Level of Effectiveness: WWC maintains a list of equipment and critical replacement parts inventory in Appendix D of the SSMP. The critical replacement parts list is 100% stocked, up to date, and is maintained by the Material Technician at Dry Creek WWTP. The equipment and critical replacement parts inventory and upkeep is effective and ensures that a lift station critical part failure can be quickly mitigated.

- Recommendations: Update and post the following Appendices on the website:
  - Appendix D-6 – Equipment Inventory List. This was also included during the previous audit but has not been completed.
  - Appendix D-7 – Critical Replace Parts List. This was also included during the previous audit but has not been completed.

5.5 Design and Performance Provisions

5.5.1 Compliance

Table 13 – Compliance with SSS WDR D.13.v – Design and Performance Provisions

SSMP Requirement	Compliance	Deficiencies
v(a) Sanitary sewer design and construction specifications	Yes	-
v(b) Procedures and standards for inspecting and testing new and R&R projects	Yes	-

5.5.2 Effectiveness of SSMP Elements and Recommended Modifications

Sanitary Sewer Design and Specifications (SSMP 5.2)

- Level of Effectiveness: The City's design and construction standards are available on the website and the online SSMP documentation lists their location. These designs and construction standards are effective in ensuring that new or rehabilitated infrastructure is designed and constructed in an acceptable manner.

- Recommendations: Update Appendix E-1 – Sanitary Sewer Design link. This was also included during the previous audit but has not been completed.

Sanitary Sewer System Construction and Performance Provisions (SSMP 5.3)

- Level of Effectiveness: The City's construction and design standards include procedures and requirements for the testing of new/rehabilitated assets and has been effective in ensuring that recently constructed assets perform as expected.

- Recommendations:
  - Update Appendix E-2 – Sanitary Sewer System Construction link. This was also included during the previous audit but has not been completed.
  - Post Appendix E-3 – Technical Memo, SSMP Preparedness Audit Design and Performance Provisions Element V on the website. This was also included during the previous audit but has not been completed.

5.6 Overflow Emergency Response Plan

5.6.1 Compliance

Table 14 – Compliance with SSS WDR D.13.vi - OERP

SSMP Requirement	Compliance	Deficiencies
vi(a) Proper notification procedures	Yes	-
vi(b) Program for appropriate SSO response	Yes	-
vi(c) Procedure for prompt notification to regulatory agencies	Yes	-
vi(d) Procedures for appropriate staff and contractor training	Yes	
vi(e) Procedures to address emergency operations (e.g., traffic, crowd control)	Yes	-
vi(f) Program to ensure containment of SSO to prevent discharge and minimize adverse impacts on the environment	No	SSOERP does not meet certain water quality monitoring requirements of the amended MRP document

5.6.2 Effectiveness of SSMP Elements and Recommended Modifications

Notification Procedures (SSMP 6.2)

- Level of Effectiveness: The average SSO response time during the audit period was 20 minutes, with 21 minutes for FY 18/19, 21 minutes for FY 19/20, and 18 minutes for FY 20/21 (see **Table 3**). These response times are much faster than the City target response time of 40 minutes and indicates that the notification procedures employed the City are effective in facilitating a rapid response from the City's first responders.

- Recommendations: No recommended modifications at this time.

Response Program (SSMP 6.3)

- Level of Effectiveness: SSO response procedures are documented in Appendix F-1 Section 2 of the SSMP and are summarized in the flow chart in Figure 6-2 of the SSMP and Appendix F-1 SSOERP. The flow chart uses a series of yes/no questions to guide SSO responders in quickly identifying the right sequence of decisions and actions to properly assess and mitigate an SSO. This chart is simple and effective in explaining the process in which to mitigate an SSO.

  During the audit period, the average SSO volume spilled was 21 gallons, with an average 62% recovered from the total SSO volume. Similarly, the average SSO duration length was 4:55 hours long, however there were 20 long-duration SSOs (over 3 hours) that caused the average SSO duration length to increase. One of these SSOs in FY 20/21 spilled from a lateral for 94 hours and resulted in volume spilled of 1.5 gallons. In all these instances, the City was notified very late, and once notified, stopped all long duration SSOs in under 30 minutes. The average City response time to SSO calls during the audit period was 20 minutes, and the average time it took to stop the SSO (SSO mitigation) once on-site was just under 5 minutes. These statistics demonstrate that the City has been effective in responding and mitigating SSOs.

- Recommendations:
  - The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station. This list should also be updated to incorporate new lift stations at Washington Blvd and 7600 Sierra College. This was also recommended during the previous two audits but has not been implemented.
  - Modify Figure 6-2 – SSO Procedure Flow Chat, to report SSO category 1 larger than 1,000 gallons to Cal OES within 2 hours per WDR requirements (currently if > 50,000 gal). This was also recommended during the previous audit but has not been implemented.
  - Post Appendix F-1 – SSOERP on the website along with corresponding attachments. This was also recommended during the previous audit but has not been implemented.

Regulatory Notification Procedure (SSMP 6.4)

- Level of Effectiveness: The Superintendent and Utility Manager are the legally responsible officials (LRO) for certifying SSO reports submitted to CIWQs. The Superintendent and Supervisor are also responsible for reporting the SSOs to RWQCB, OES, and Placer Environmental Health Department as required. This section is effective in conveying the responsibility the LRO in reporting SSOs to the proper authorities.

- Recommendations: No recommended modifications at this time.

Staff and Contractors Training (SSMP 6.5)

- Level of Effectiveness: Each WWC employee is required to complete the SSO response procedure training updates and review of SSO training are included in the weekly tailgate meeting throughout the year. They are also trained on the various SOPs implemented within WWC. Contractors are also required to implement the procedures identified in the SSO training prior to working within the collection system. As evidenced by the fast response and mitigation times, the WWC staff's training has been effective.

- Recommendations: No recommended modifications at this time.

Emergency Response Coordination (SSMP 6.6)

- Level of Effectiveness: WWC employees are required to complete the Emergency Action plan training annually. This covers HAZ WOPER first responders and Roseville's Incident Command System (ICS). These process, procedures, and response systems are also reviewed via weekly safety tail gate meetings. These training sessions have been effective way to prepare staff to deal with hazardous waste and materials.

- Recommendations: No recommended modifications at this time.

Spill Mitigation and Containment Procedure (SSMP 6.7)

- Level of Effectiveness: Appendix F-1 of the SSMP includes an SSOERP which includes an SOP for estimating spill volumes, containment, and mitigation of spills. The new amended Monitoring and Reporting Program (MRP) requirements implemented in September 2013 require a robust water quality monitoring plan that must account for spill travel time in surface water, among several new requirements. The City's current SSOERP Appendix C Water Quality Sampling Procedures document does not meet these requirements.

- Recommendations:
    - Modify SSOERP Appendix C – Water Quality Sampling Procedures to the meet the requirements of the amended MRP.
        - Account for spill travel time in the surface water and scenarios where monitoring may not be possible to safety concerns or access restrictions once an SSO has stopped. This may be estimated by dropping floatable debris, for instance, and measuring the time required to travel a certain distance. This was also recommended during the previous audit but has not been implemented.
        - Expand minimum sampling parameters to include appropriate bacterial indicators that have been specifically listed in the beneficial uses of the City's waterways or more

broadly listed by the regional Basin Plan. This was also recommended during the previous audit but has not been implemented.

- Modify SSOERP Appendix C – Water Quality Sampling Procedures to include a list of all of the required equipment that the employee would need to conduct proper sampling. This was also recommended during the previous audit but has not been implemented.

5.7 FOG Control Program

5.7.1 Compliance

Table 15 – Compliance with SSS WDR D.13.vii – FOG Control Program

SSMP Requirement	Compliance	Deficiencies
vii(a) Public education plan	Yes	-
vii(b) FOG disposal plan	Yes	-
vii(c) Legal authority to prohibit SSOs and blockages caused by FOG discharges	Yes	-
vii(d) BMPs, grease removal devices, recordkeeping, and reporting requirements	Yes	-
vii(e) Authority to inspect and enforce FOG ordinance	Yes	
vii(f) FOG Characterization Assessment and Hot Spot Cleaning Schedule	Yes	-
vii(g) FOG Control Program Measures	Yes	-

5.7.2 Effectiveness of SSMP Elements and Recommended Modifications

Public Education Plan (SSMP 7.2)

- Level of Effectiveness: The City has developed and operates a comprehensive FOG outreach program to residents, restaurants, and the plumbing community on the proper disposal of FOG. The main objective is to educate the City of Roseville residents and restaurants on the proper disposal of FOG to meet or exceed outreach standards set forth in the State General WDR requirements. The program has implemented TV ads, flyers, bill inserts, and websites to convey the message of educating the public on the proper disposal of FOG and other substances. This system appears to be effective in educating the public on the proper disposal of FOG and other substances. Maurice Chaney is listed as responsible party for FOG public Education Plan in Appendix B-1.

- Recommendations: No modifications recommended at this time.

FOG Disposal Plan (SSMP 7.3)

- Level of Effectiveness: During the past audit periods the Industrial Waste Section (IWS) oversaw the FOG disposal plan with permitted Food Service Establishment (FSE), however all FOG program-related responsibilities transitioned to WWC in 2016. The City currently has 421 FSEs that are required to and

have obtained a FOG wastewater discharge permit (FOG WDP). The same City regulations from the audit period are in place which require permittees to retain a minimum 3 years of documentation to prove the proper cleaning, maintenance, and removal of FOG from grease control devices and the disposal site location. The City provides information about the permitting process and permit applications on the City website (URL address below) as a resource for businesses and residences within the City. (https://livesewersmart.com/)

The FOG record keeping requirements for FSEs appear to be effective in that only 1 FOG-related SSOs occurred over the audit period.

- Recommendations: No modifications recommended at this time.

Record Keeping Requirements (SSMP 7.4)

- Level of Effectiveness: As discussed in the previous section, FOG control program responsibilities transitioned from IWS to WWC in 2016, but during the audit period, IWS operated the program. The City requires in RMC Section 14.14.260 that permitted FSEs retain logbooks on grease control device maintenance cycles, FOG hauling records, sampling data and sludge height monitoring in FOG control devices, BMPs, and records of private lateral SSOs and subsequent mitigation. The recordkeeping requirements and time frames identified in the RMC have enough information necessary for the City to enforce permit requirements of FSEs.

- Recommendations: No modifications recommended at this time.

Legal Authority to Prohibit SSOs and Blockages Caused by FOG Discharges (SSMP 7.5)

- Level of Effectiveness: The RMC Section 14.12.050 provides the City with a FOG ordinance and legal authority to require FOG interceptors when deemed necessary by the director. The ordinance prohibits FOG-related blockages and SSOs and limits the maximum allowable concentration of FOG in FSE discharges at the current level of 100 mg/L of wastewater. This ordinance is effective in providing the City with the tools necessary to minimize FOG discharges into the sewer system.

- Recommendations: No modifications recommended at this time.

BMP, Grease Removal Devices, Recordkeeping, and Reporting Requirements (SSMP 7.6)

- Level of Effectiveness: The City requires all FSEs that discharge FOG to acquire a FOG WDP permit which includes provisions for FSEs to maintain BMPs and grease interceptors, cleaning records, and to report private FOG-related SSOs or blockages. The FOG WDP requirements are effective in providing the City with the tools to limit FOG discharges into the sewer system.

- Recommendations: No modifications recommended at this time.

Inspection and Enforcement Authority – FOG Producers (SSMP 7.7)

- Level of Effectiveness: All FSEs that discharge FOG are required to obtain and comply with a City FOG WDP. Under the permit, the FSE must comply with the FOG ordinance as detailed under the RMC, and the City maintains the legal authority to physically inspect the FSE and determine if it is in compliance. The City possesses effective tools to regulate FOG discharges via a robust FOG ordinance which also requires an effective FSE inspection program. Under oversight from WWC, the City plans on inspecting at least 294 FSEs each fiscal year During this audit, the city documented 0 FSE inspections for FY 18/19, 0 inspections for FY 19/20, and 221 inspections for FY 20/21. The lack of inspections could be due to equipment or due to Covid Pandemic however since only one SSO was caused by FOG, the FOG inspection and enforcement authority element of the SSMP has been effective.

- Recommendations: No modifications recommended at this time.

FOG Characterization Assessment and Hot Spot Cleaning Schedule (SSMP 7.8)

- Level of Effectiveness: The City has been effective in limiting FOG-related SSOs to one during the three-year audit period by identifying and placing assets impacted by FOG as a last resort on the hot-spot, high frequency 3-month cleaning list. If the City encounters abnormal FOG levels in a pipe it will first reach out to FSEs and residents that it thinks may be contributing to it and distribute pamphlets to them to minimize FOG discharges. If that does not solve the problem, then the asset is put on the hot-spot list. Approximately 60% of the 90 hot-spot assets have FOG-related issues that require significant City resources to clean every 3 months.

- Recommendations:
    - Modify the EU Engineering GIS database to include hotspot assets and FSEs and add them as layers to the maps that WWC receives.

FOG Control Program Measures (SSMP 7.9)

- Level of Effectiveness: The City has established that all FOG-producing FSEs acquire a FOG WDP which limits discharge of FOG, requires proper O&M records, hauling record, BMPs, and other conditions. The FOG Control Program measure provides the City's with an effective tool to limit FOG discharges from FSEs.

- Recommendations: No modifications recommended at this time.

5.8 System Evaluation and Capacity Assurance Plan

5.8.1 Compliance

Table 16 – Compliance with SSS WDR D.13.viii - SECAP

SSMP Requirement		Compliance	Deficiencies
viii(a)	Evaluate hydraulic deficiencies	Yes	-
viii(b)	Establish design criteria	Yes	-
viii(c)	Establish short- and long-term CIP	Yes	-
viii(d)	Develop schedule of completion dates for CIP	Yes	-

5.8.2 Effectiveness of SSMP Elements and Recommended Modifications

Evaluation Process – Capacity Enhancement Projects (SSMP 8.2)

- Level of Effectiveness: The City has developed two hydraulic simulation models to identify peak flows in the collection system in 2006. In addition, the City developed a new hydraulic model and System Evaluation and Capacity Assurance Plan (SECAP) in 2017, which was done by Woodard and Curran. The modeling efforts conducted in 2006 and 2017 have been effective in evaluating the system and planning for future growth, which is evident from no capacity-deficiency-related SSOs during this audit period. In 2018, Water Works Engineers (WWE) conducted a follow up I/I study upon the existing 2017 model to further analyze results and identify basins and assets with high I/I response. The results of the 2018 I/I study is being actively used by the City as their I/I reduction program base.

- Recommendations: Modify Appendix I-1 of the SSMP to indicate that the system evaluation and capacity assurance plan will be reviewed and updated every 10 years. This was also recommended during the previous two audit but has not been implemented.

Design Criteria (SSMP 8.3)

- Level of Effectiveness: The City established a 10-year, 24-hour peak design storm for the hydraulic wet weather loading of the existing collection system along with flow generation factors based on water use records and flow monitoring data. Based on the lack of capacity-related SSOs during the audit period, it appears the City's capacity design criteria are effective.

- Recommendations: No recommended modifications at this time.

Capacity Enhancement Measures (SSMP 8.4)

- Level of Effectiveness: The SPWA Wastewater Systems Evaluation includes the identification of short and long-term Capital Improvement Project (CIP) to meet current and future wastewater flows. The new hydraulic model introduced in 2017 provides new capacity enhancement measures.

- Recommendations: No modifications recommended at this time.

Capital Improvement Program Schedule (SSMP 8.5)

- Level of Effectiveness: The City lists the goal of the CIP is to develop annual project bundles of approximately $1.5 to $2.0 million based on WWC condition assessment data and the hydraulic model CIP results and subsequent flow monitoring or studies. The CIP schedule is effective in identifying the tasks required to assure hydraulic capacity within the collection system.

- Recommendations: No modifications recommended at this time.

5.9 Monitoring, Measurement, and Program Modifications

5.9.1 Compliance

Table 17 – Compliance with SSS WDR D.13.ix – MMM

SSMP Requirement	Compliance	Deficiencies
ix(a) Maintain metrics to prioritize SSMP activities	Yes	-
ix(b) Measure effectiveness of SSMP elements	Yes	The City does have performance indicators linked with SSMP elements, but additional improvements should be implemented (see below)
ix(c) Assess preventative maintenance program	Yes	-
ix(d) Update elements based on evaluations	Yes	-
ix(e) Identify and illustrate SSO trends	Yes	-

5.9.2 Effectiveness of SSMP Elements and Recommended Modifications

Utility Metrics to Prioritize SSMP Activities (SSMP 9.2)

- Level of Effectiveness: The WWC tracks four categories of utility metrics to monitor and measure the effectiveness of the various elements of this SSMP, which include system information, financial information, sewer maintenance, and performance measures. The city also tracks various performance measures related to various SSMP elements and they are summarized in **Appendix 7.4**. Appendix I has effectively been used to identify and track the specific metrics each of the City's four categories.

- Recommendations: No modifications recommended at this time.

Metrics to Monitor Effectiveness of SSMP (SSMP 9.3)

- Level of Effectiveness: The utility metrics listed in Appendix I-4 pertain to different overseeing departments within the City, and the coordination between these different Departments in measuring/monitoring various metrics and sharing results has been effective in ensuring the SSMP goals have been met.
- Recommendations:

- Incorporate system and financial measures recommended in **Table 18,** from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP.
- Update Appendix I-4 and modify it to include document location and review frequency.
- Modify I-4 – Key Performance Indicators (KPI) FOG section, to reflect the change in responsibilities from IWS to WWC.

Metrics to Assess Preventative Maintenance Program (SSMP 9.4)

- Level of Effectiveness: The City's current utility metrics Appendix I defines the frequency and type of utility metric that is being tracked to measure SSMP effectiveness. This is effective because it allows the city to monitor performance of particular activities and compare against SSO trends to determined data correlations. These metrics do not all have associated goals or targets, however, which makes it hard to track whether the activity is meeting the intended result.

- Recommendations: Consider addition of recommended PM measures in **Table 18,** from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.

SSMP Performance Monitoring and Update Process (SSMP 9.5)

- Level of Effectiveness: Individual staff oversee various SSMP element performance indicators. The City tracks all revisions/updates with the SSMP using a revision log that is maintained by the LRO. The log is effective documenting changes to the SSMP and encourages the use of the SSMP as a living document.

- Recommendations: No modifications recommended at this time.

SSO Trends – Frequency, Location and Volume (SSMP 9.6)

- Level of Effectiveness: The City tracks a comprehensive list of performance metrics that are included in Appendix I-4 of the SSMP and summarized in **Table 19**. This allows the City to quickly identify and respond to changing trends in SSOs over time. These metrics are monitored on a monthly, quarterly, semi-annual, and annual basis.

- Recommendations:
  - Update Appendix I-3 – SSO History (last update 2013).
  - Update SSO trends data in Appendix I-4 – KPI Benchmarking.
  - Consider addition of recommended SSO measures in **Table 18,** from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.

Table 18 –Recommended Additional Performance Indicators

Description	Performance Indicator	Unit
System Information	Total System Length	miles
	Service Area	sq. miles

	Population	people
	# maintenance Holes	MHs
	# Pump Stations PS/ Lift Station	number
	Sewer < 8 inch	miles
	8 inches < sewer < 15 inches	miles
	15 inches < sewer < 21 inches	miles
	21 inches < sewer < 42 inches	miles
	Average age of system	years
	New sewer main installation	miles
	New sewer lateral installation	miles
	WWC Staff	number
Financial Information	Total annual division budget	$
	Total annual O&M budget	$
	O&M budget of annual	%
	Lift station O&M cost	$
	Lift station O&M cost of annual	%
	Annual capital for sewer rehab	$
	Sewer monthly rate for residents	$
O&M	Certified operators	number
	O&M field staff	number
	Average high velocity cleaning per crew per day	LF
	Total visually inspected per year (not CCTV)	miles
SSO	Number of SSO calls received	number
FOG	Public education outreach budget per year	$
	Public education outreach budget of annual	%

Table 19 – Current Performance Measures to Monitor SSO Trends

Performance Measure	Unit	Target	Source
SSOs - Total number, mains and laterals	Number	-	A, B
SSOs - Total volume, mains and laterals	Gal	-	A, B
SSOs - Total volume recovered	Gal	-	B
SSOs - Total number of wet weather	Number	-	A, B
SSOs - Total volume of wet weather	Gal	-	A, B
SSOs - % of spills caused by FOG (main)	%	-	A, B
SSOs - % of spills caused by roots (main)	%	-	A, B
SSOs - % of spills caused by Vandalism (main)	%	-	A, B
SSOs - caused by LS failures	Number	-	A, B
SSOs - caused by pipe failures	Number	-	A, B
SSOs - % of spill volume caused by FOG (lateral)	%	-	A, B
SSOs - % of spill volume caused by roots (lateral)	%	-	A, B
SSOs - % of spill volume caused by Vandalism (lateral)	%	-	A, B
Customer service requests per year	Number	-	A, B
Sewer odor complaints	Number	-	A, B
Flooding claims per year	Number	-	A, B
Cost of flooding claims per year	$	-	A, B
SSO – Repeats within two years	Number	0	B, C
SSOs - Category 1	Number	0	C, D
SSOs / 100 mi pipe / year - Category 2	Number	2.0	C
SSOs / 100 mi pipe / year - Mainline	Number	0.6	C
SSOs / 100 mi pipe / year - Lateral	Number	8.0	C

A = SSMP section 9.6

B = SSMP Appendix I

C = WW Collections KPIs

D = Program / Performance Reports

5.10 SSMP Program Audits

5.10.1 Compliance

Table 20 – Compliance with SSS WDR D.13.x – SSMP Program Audits

SSMP Requirement	Compliance	Deficiencies
x Conduct periodic audits	Yes	-

5.10.2 Effectiveness of SSMP Elements and Recommended Modifications

Audit Procedures, Roles, and Responsibilities (SSMP 10.2)

- Level of Effectiveness: The City conducts an internal audit biennially to continually measure the effectiveness of the SSMP primarily through evaluating system metrics, performance measures, and reduce SSOs by improving SSMP procedures to better respond to new SSO trends. In addition, the audit evaluates the City's compliance with SSMP requirements, particularly the amended MRP requirements that were formalized in September 2013. The City developed an audit form as a template to record information produced during the internal SSMP audits. This form is included in SSMP Appendix J-2. The previous audit identified many areas of improvement which the City responded and acted on. Some of these recommended improvements were excluded from this audit based on discussions with the City that eliminated the need for them. Others are considered standing and should still be implemented by the City. Generally, the internal audits implemented by the City have been effective in improving the SSMP and turning it into a living document that that is current, practical, and useful for the City.
- Recommendations:
    - The SSMP must be recertified by the City Council. Last Certification was completed 4/7/2014. Per SSS WDR D.14, the City must have the SSMP updated and re-certified by the governing board (i.e. City Council) every five years.
    - Post this SSMP internal audit to the City website.
    - Schedule the next internal SSMP audit for July-August of 2023.
    - Develop a description manual to replace Appendix J-1 and J-2 of the SSMP, to support each KPI element. This manual describes required information for KPI monitoring, including but not limited to:
        - Elements definition
        - How to fill each KPI items
        - Personnel responsible
        - Review frequency

SSMP Program Modification/Update Process (SSMP 10.3)

- Level of Effectiveness: The City developed a program for monitoring, reviewing sewer performance metrics and the effectiveness of SSMP elements on a biennial basis. Based on the results of the SSMP audits, the Wastewater Utility Manager is assigned to initiate/direct corrective actions to respond to

deficiencies and enhancements identified in the audit. As determined in the City's SSMP revision log, the City has been prompt in responding to audit and continually strives to implement improvements.

- Recommendations:
  - Update the SSMP change log and add it as an appendix to the SSMP, documenting all changes made to the SSMP since its last certification, indicating when an element was changed/updated and who authorized the change. An example of a change log is shown at **Appendix 7.5**. This was also recommended during the previous audit but has not been implemented.
  - Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes. This was also recommended during the previous audit but has not been implemented.

5.11 Communication Program

5.11.1 Compliance

Table 21 – Compliance with SSS WDR D.13.xi – Communications Program

SSMP Requirement	Compliance	Deficiencies
xi(a) Communicate on a regular basis with the public and tributary/satellite systems regarding SSMP	Yes	-

5.11.2 Effectiveness of SSMP Elements and Recommended Modifications

Internal Communication – Staff, Utility Commission, and City Council (SSMP 11.2)

- Level of Effectiveness: The WWC has used PowerPoint presentations as a resource to describe the purpose of the SSMP and summarize SSS WDR requirements to the City council and City staff. These presentations are attached to the SSMP website.

- Recommendations:
  - As of September 2013, the State Water board amended the MRP of the SSS WDR and the City produced a training PowerPoint to City staff, council, and stakeholders regarding the update. Attach the PowerPoint to the SSMP website. This was also recommended during the previous audit but has not been implemented.
  - Post Appendices K-1 – WWC WDR awareness Program and K-2 – Sanitary sewer regulations/WDR PowerPoint presentations on the website.
  - Post Appendix K-3 – Two "EU Today" Newsletters Preventing Fog in Pipes and Not Flushing Medication down the Sewer.
  - Update Appendix K-3 – Two EU newsletters FOG/medications links.

Stakeholder Communication – Residential, Commercial and Industrial (SSMP 11.3)

- Level of Effectiveness: The City communicates regularly with the public and stakeholders via monthly newsletters entitled "EU Today" that includes items regarding sewer utilities. This newsletter is presented online and through bill inserts. A sample newsletter is included in Appendix K of the SSMP. In addition, the City specifically communicates FOG related items to the community via FOG outreach program over TV ads, flyers, direct mail, and site visits to FSEs.

- Recommendations:
    - Update and Post SSMP Appendix K-4 – FOG Outreach Program with marketing Plan budget & spending and post it on the website. Consider an additional metric to be used in the KPI that reflects the City's performance in terms of FOG outreach program. Few additional metrics are recommended in **Table 18**. This was also recommended during the previous audit but has not been implemented.

Tributary/Satellite Communication (11.4)

- Level of Effectiveness: The City routinely communicates with their satellite partners and has three formal agreements in place that include:
    - The joint exercise of power agreement for the SPWA
    - The agreement regarding the operation of and use of South Placer Regional Wastewater Facilities
    - The funding agreement relating to the South Placer Regional Wastewater Facilities
    - Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD).

- Recommendations:
    - Add the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD) as an appendix. This was also recommended during the previous audit but has not been implemented.
    - Modify SSMP 11.4 to include the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD). This was also recommended during the previous audit but has not been implemented.
    - Post Appendix K-5 – Funding agreement related to south placer regional wastewater facilities on the website.

SECTION 6 Audit Summary

This section summarizes the level of compliance of the SSMP with the SSMP requirements identified in subsection D.13 and he identified deficiencies as described in **Section 4.1. Table 22** summarizes the result of this evaluation.

Table 22 – Summary of SSMP Compliance Deficiencies

SSMP Requirement	Compliance	Deficiencies
vi(f) Program to ensure containment of SSO to prevent discharge and minimize adverse impacts on the environment	No	SSOERP does not meet certain water quality monitoring requirements of the amended MRP document.

In addition, **Table 23** lists a summary of all recommendations for this audit.

Table 23 – Summary of Audit Recommendations

SSMP Section	Recommendation	Suggested Timeline for Completion
1.2	Post Appendix A-1 – Roseville's SSMP Development Plan and Implementation Schedule on the website.	Jan 2022
2.1	Modify Appendix B-1: Update City Mayor, Vice Mayor, City Attorney, and City Council positions and add phone numbers (Mayor Krista Berrnasconi, Vice Mayor Bruce Houdesheldt, City Attorney Michelle Sheidenberger, Councilmember Tracy Mendonsa). Update Commissioners and phone numbers: Chair Elaine Webb, Vice Chair James knox, Commissioners: Edward Belski, John Delancy, Richard Demarchi, Einar Maisch. Update Liaisons and phone numbers for EU Director Richard Plecker, and Secretary Pam Walsh. Update Assistant EU Director Ken Glotzbach, Wastewater Collection Superintendent Dan Prudent, Waste Water Collection Supervisor positions, Principal EU engineer and phone number for Jason Shykowski. Update Administrative Analyst and phone number for Maurice Chaney.	Jan 2022
2.1	Post the following Appendices on the website: o Appendix B-1 – Personnel Responsible for SSMP Elements o Appendix B-2 – Personnel Responsible for SSO Reporting o Appendix B-3 – Personnel Responsible for Responding to SSOs Weekly Standby	Jan 2022
2.3	Modify Figure 2-2 Flowchart: Update the WWC Divisions overflow emergency response plan chain of communication to match existing operations, whereby WWTP and LS staff and SCADA alerts should always call the 24-hour call center instead of WWC service staff.	Jan 2022
2.3	Include Figure 2-2 flowchart as Appendix F to the SSOERP (Appendix F-1) and mention in the text.	Jan 2022
3.2	Post Appendix C-1 – Pretreatment Program Enforcement Response Plan on the website.	Jan 2022
3.3	Update the related links for Appendices C-2, C-3, and C-4 for sanitary sewer design and construction.	Jan 2022
3.7	Post the following Appendices on the website: o Appendix C-5 – Joint Exercise of Powers Agreement for the South Placer Wastewater Authority	Jan 2022

	o Appendix C-6 – Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities o Appendix C-7 – Wastewater Service Agreement by Contract and Operating Agreement between SASD, SRCSD and City of Roseville	
4.2	Post the following Appendices on the website: o Post Appendix D-1 – City of Roseville Sewer Map Grid System on the website. o Post Appendix D-9 – Mapping Update Policy on the website.	Jan 2022
4.3	Update SSMP Section 4.3 Overview with updated statistics about the City's service area, number of customers, miles of main, number of services, and number of lift stations. Also update the number of WWC employees.	Jan 2022
4.3	Update the following Appendices and post on the website: o Appendix D-2 – Maintenance Cleaning Schedule: Update with Maximo CCMS example o Appendix D-3 – CCTV Video Report o Appendix D-4 – SOP	Jan 2022
4.4	Describe the process/procedure for evaluating available data (i.e., CCTV, CMMS, GIS, capacity assessment, visual inspections, etc.), conducting a risk assessment to determine the assets to be renewed, and developing the R&R plan with its associated data. This was also included during the previous audit but has not been completed.	Jan 2022
4.4	Document the upcoming transition in responsibilities between WWC and EU Engineering in developing and operating the R&R plan by describing it in the SSMP. Confirm that field observations from WWC field crew are accounted for by EU Engineering when conducting risk assessment. This was also included during the previous audit but has not been completed.	Jan 2022
4.4	Post Appendix D-8 – Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan (Element IVC) on the website.	Jan 2022
4.5	Update the following links: o The CWEA website link. o Appendix D-5 – CWEA Certification Handbook link.	Jan 2022
4.6	Update and post the following Appendices on the website: o Appendix D-6 – Equipment Inventory List o Appendix D-7 – Critical Replace Parts List	Jan 2022
5.2	Update Appendix E-1 – Sanitary Sewer Design link.	Jan 2022
5.3	Update Appendix E-2 – Sanitary Sewer System Construction link.	Jan 2022
5.3	Post Appendix E-3 – Technical Memo, SSMP Preparedness Audit Design and Performance Provisions Element V on the website.	Jan 2022
6.3	The WWC has developed a table of information specific to lift station response which includes all of the lift stations in the City and lists for each station; the average flow from the station, the wet well depth, the volume of the wet well, the available storage/downtime if the lift station goes down, the point at which a SSO will first occur if the lift station goes down, the assigned manhole for decanting if vacuum trucks are used to draw down the wet well, and the street location of the decant manhole. This information should be included as an Appendix in the OERP and the information for each lift station should be posted onsite at each respective lift station. This list should also be updated to incorporate new lift stations at Washington Blvd and 7600 Sierra College. This was also recommended during the previous audit but has not been implemented.	Jan 2022
6.3	Modify Figure 6-2 – SSO Procedure Flow Chat, to report SSO category 1 larger than 1,000 gallons to Cal OES within 2 hours per WDR requirements (currently if > 50,000 gal).	Jan 2022
6.3	Post Appendix F-1 – SSOERP on the website along with corresponding attachments	Jan 2022
6.7	Modify SSOERP Appendix C – Water Quality Sampling Procedures to the meet the requirements of the amended MRP.	Jan 2022

	o Account for spill travel time in the surface water and scenarios where monitoring may not be possible to safety concerns or access restrictions once an SSO has stopped. This may be estimated by dropping floatable debris, for instance, and measuring the time required to travel a certain distance. This was also recommended during the previous audit but has not been implemented. o Expand minimum sampling parameters to include appropriate bacterial indicators that have been specifically listed in the beneficial uses of the City's waterways or more broadly listed by the regional Basin Plan. This was also recommended during the previous audit but has not been implemented.	
6.7	Modify SSOERP Appendix C – Water Quality Sampling Procedures to include a list of all of the required equipment that the employee would need to conduct proper sampling. This was also recommended during the previous audit but has not been implemented.	Jan 2022
7.8	Modify the EU Engineering GIS database to include hotspot assets and FSEs and add them as layers to the maps that WWC receives.	Jan 2022
8.2	Modify Appendix I-1 of the SSMP to indicate that the system evaluation and capacity assurance plan will be reviewed and updated every 10 years. This was also recommended during the previous audit but has not been implemented.	Jan 2022
9.3	Incorporate system and financial measures recommended in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP.	Jan 2022
9.3	Update Appendix I-4 and modify it to include document location and review frequency.	Jan 2022
9.3	Modify I-4 – Key Performance Indicators (KPI) FOG section, to reflect the change in responsibilities from IWS to WWC.	Jan 2022
9.4	Consider addition of recommended PM measures in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.	Jan 2022
9.6	Update Appendix I-3 – SSO History (last update 2013).	Jan 2022
9.6	Update SSO trends data in Appendix I-4 – KPI Benchmarking.	Jan 2022
9.6	Consider addition of recommended SSO measures in Table 18, from Appendix I-2 into Appendix I-4 and discard Appendix I-2 from the SSMP. The goal is to produce a single living KPI document that can be used to evaluate the effectiveness of SSMP elements.	Jan 2022
10.2	The SSMP must be recertified by the City Council. Last Certification was completed 4/7/2014. Per SSS WDR D.14, the City must have the SSMP updated and re-certified by the governing board (i.e. City Council) every five years.	Jan 2022
10.2	Post this SSMP internal audit to the City website.	Jan 2022
10.2	Schedule the next internal SSMP audit for July-August of 2023.	Jan 2022
10.2	Develop a description manual to replace Appendix J-1 and J-2 of the SSMP, to support each KPI element. This manual describes required information for KPI monitoring, including but not limited to: o Elements definition o How to fill each KPI items o Personnel responsible o Review frequency	Jan 2022
10.3	Update the SSMP change log and add it as an appendix to the SSMP, documenting all changes made to the SSMP since its last certification, indicating when an element was changed/updated and who authorized the change. An example of a change log is shown at Appendix 7.5. This was also recommended during the previous audit but has not been implemented.	Jan 2022
10.3	Document the submittal process for proposed changes to the SSMP. The process may include the following; identify the individual who maintains the most current version of the SSMP, the steps in which suggested modifications are received (by internal staff or the public), how	Jan 2022

	suggestions are routed to the individual/position responsible for the SSMP element associated with suggested modification, the process for review, and the process for updating the SSMP on the City website and documenting changes. This was also recommended during the previous audit but has not been implemented.	
11.2	As of September 2013, the State Water board amended the MRP of the SSS WDR and the City produced a training PowerPoint to City staff, council, and stakeholders regarding the update. Attach the PowerPoint to the SSMP website. This was also recommended during the previous audit but has not been implemented.	Jan 2022
11.2	Post Appendices K-1 – WWC WDR awareness Program and K-2 – Sanitary sewer regulations/WDR PowerPoint presentations on the website.	Jan 2022
11.2	Update Appendix K-3 – Two EU newsletters FOG/medications links.	Jan 2022
11.3	Update SSMP Appendix K-4 – FOG Outreach Program with marketing Plan budget & spending and post it on the website. Consider an additional metric to be used in the KPI that reflects the City's performance in terms of FOG outreach program. Few additional metrics are recommended in **Table 18**. This was also recommended during the previous audit but has not been implemented.	Jan 2022
11.4	Add the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD) as an appendix. This was also recommended during the previous audit but has not been implemented.	Jan 2022
11.4	Modify SSMP 11.4 to include the Agreement Regarding the Operation and Use of Wastewater Services between the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD). This was also recommended during the previous audit but has not been implemented.	Jan 2022
11.4	Post Appendix K-5 – Funding agreement related to south placer regional wastewater facilities on the website.	Jan 2022

SECTION 7 Appendices

7.1 Appendix – Historical SSO Data

7.2 Appendix – SSO Data Comparison Charts

7.3 Appendix – Structural SSO GIS Mapping

7.4 Appendix – Key Performance Indicators

7.5 Appendix – Change Log Example

7.1 Appendix – Historical SSO Data

Dated: FY 18/19, FY 19/20, and FY 20/21

Appendix 7.1 – Historical SSO Data for FY 18/19 to FY 20/21

#	Event ID	Date of SSO	Address	Spill Type	Spill Volume [gal]	Spill Recovered [gal]	Spill Recovery [%]	Spill Cause	Location
1	850146	7/30/2018	276 Spyglass Hill	Category 3	105	105	100%	Debris-Rags	LL
2	850517	8/8/2018	196 South Lincoln	Category 3	1	1	100%	Roots	LL
3	850609	8/9/2018	117 Meadowgate Drive	Category 3	26	0	0%	Roots	LL
4	850709	8/12/2018	117 Ash St	Category 3	13	3	23%	Roots	LL
5	851063	8/28/2018	300 Yosemite	Category 3	409	0	0%	Roots	LL
6	850868	8/28/2018	601 Douglas Blvd	Category 3	28	25	89%	Roots	LL
7	851163	9/9/2018	1201 Meadow Ln	Category 3	16	1	6%	Roots	LL
8	851297	9/19/2018	312 Folsom	Category 3	2	2	100%	Roots	Main
9	852004	10/4/2018	400 Elefa St	Category 3	17	15	88%	Roots	LL
10	852225	10/25/2018	9117 Moondancer Cir	Category 3	19	13	68%	Roots	LL
11	855199	12/21/2018	1331 Champagne Cir	Category 3	33	0	0%	Roots	LL
12	855472	12/23/2018	100 Alta Vista	Category 3	10	10	100%	Grease	Main
13	855930	1/12/2019	240 Duranta	Category 3	1	1	100%	Roots	LL
14	855675	1/15/2019	1211 Ross CT	Category 3	29	25	86%	Debris-Rags	LL
15	855986	1/20/2019	1018 Melrose Ave	Category 3	2	2	100%	Pipe/Structure Failure	LL
16	856355	1/28/2019	1040 Shenencock Way	Category 3	15	14	93%	Roots	LL
17	856617	2/4/2019	314 Folsom	Category 3	15	14	93%	Debris-Rags	LL
18	856801	2/6/2019	312 Folsom	Category 3	3	2	67%	Debris-Rags	Main
19	856820	2/19/2019	236 Elm St	Category 3	3	1	33%	Pipe/Structure Failure	LL
20	856798	2/24/2019	712 Hillcrest	Category 3	9	7	78%	Roots	LL
21	857431	3/18/2019	1044 Magnolia Way	Category 3	20	19	95%	Roots	LL
22	857531	3/30/2019	301 Coronado	Category 3	5	5	100%	Roots	LL
23	858014	4/12/2019	311 Circuit	Category 3	3	0	0%	Roots	LL
24	858150	4/19/2019	801 Vernon St	Category 3	15	12	80%	Debris-Rags	LL
25	858533	5/2/2019	2551 La Croix Dr	Category 3	6	4	67%	Debris-Rags	LL
26	858177	5/4/2019	276 SpyGlass Hill	Category 3	5	3	60%	Debris-Rags	LL
27	859382	5/12/2019	1121 Champion Oaks	Category 3	20	15	75%	Roots	LL
28	858540	5/14/2019	801 Vernon St	Category 3	4	3	75%	Debris-Rags	LL
29	858670	5/20/2019	146 Elm St	Category 3	22	13	59%	Roots	LL
30	858673	5/24/2019	130 Donner Ave	Category 3	11	10	91%	Roots	LL
31	860089	6/23/2019	348 B St	Category 3	2	2	100%	Roots	LL
32	861344	8/6/2019	312 Evelyn Ct	Category 3	3	0	0%	Roots	LL
33	861387	8/19/2019	233 D St	Category 3	18	8	44%	Roots	LL
34	861459	8/22/2019	1012 Audrey Way	Category 3	5	2	40%	Roots	LL
35	861492	9/2/2019	110 Zola Ave	Category 3	3	2	67%	Roots	LL
36	861672	9/14/2019	1420 Spring Valley Dr	Category 3	2	2	100%	Roots	LL
37	862432	9/15/2019	73 Bernice Ave	Category 3	9	8	89%	Roots	LL
38	862480	9/26/2019	300 Main St	Category 3	3	2	67%	Debris-Rags	LL
39	863062	10/8/2019	421 Pleasant St	Category 3	5	0	0%	Pipe/Structure Failure	LL
40	863198	10/16/2019	1008 Shearer st	Category 3	1	1	100%	Roots	LL
41	863091	10/21/2019	100 Atkinson St	Category 3	16	12	75%	Debris-Rags	LL
42	863728	11/9/2019	137 Cedar St	Category 3	8	6	75%	Roots	LL
43	863690	11/11/2019	921 Herbert St	Category 3	11	6	55%	Roots	LL
44	863729	11/20/2019	131 Elm St	Category 3	9	3	33%	Pipe/Structure Failure	LL
45	863634	11/23/2019	520 B St	Category 3	77	74	96%	Debris-Rags	LL

46	863785	12/3/2019	1005 Circuit Dr	Category 3	11	10	91%	Roots	LL
47	863909	12/13/2019	276 Spyglass Hill	Category 3	5	3	60%	Debris-Rags	LL
48	863802	12/15/2019	301 Bitner St	Category 3	33	31	94%	Roots	LL
49	863888	12/16/2019	501 Brookwood Dr	Category 3	20	19	95%	Roots	LL
50	864408	12/17/2019	1033 Portside Cir.	Category 3	9	8	89%	Debris-Rags	LL
51	864470	12/17/2019	1896 Ambridge Dr	Category 3	4	3	75%	Pipe/Structure Failure	LL
52	863893	12/27/2019	1940 Inglis Wy.	Category 3	13	12	92%	Roots	LL
53	864668	1/16/2020	910 Carol Ann Ct.	Category 3	20	19	95%	Roots	Main
54	864878	1/18/2020	2012 Cirby Way	Category 3	3	3	100%	Roots	LL
55	865188	1/20/2020	197 Donner	Category 3	2	1	50%	Debris-Other	LL
56	864796	1/28/2020	603 Rigby Ct	Category 3	40	38	95%	Debris-Rags	LL
57	865414	2/11/2020	1080 Douglas Blvd	Category 3	2	1	50%	Roots	LL
58	865218	2/23/2020	530 Loretto Dr	Category 3	1	0	0%	Roots	LL
59	865833	2/25/2020	640 Elefa St	Category 3	3	1	33%	Debris-Rags	LL
60	866387	3/22/2020	276 Spyglass Hill	Category 3	5	5	100%	Debris-Rags	LL
61	867100	4/14/2020	311 Manzanita	Category 3	16	14	88%	Debris-Rags	Main
62	866491	4/19/2020	1335 Chignahuapan Way	Category 3	9	9	100%	Debris-Rags	LL
63	866906	5/9/2020	400 Automall Dr	Category 3	154	139	90%	Contractor Cause	Main
64*	867987	6/21/2020	401 Coronado	Category 3	60	35	58%	Debris-Rags	Main
65	868910	9/5/2020	1600 Russel Way	Category 3	10	9	90%	Roots	LL
66	868986	9/13/2020	625 Windsor	Category 3	10	9	90%	Roots	LL
67	869306	9/15/2020	4100 Shorthorn Way	Category 3	89.2	32	36%	Debris-Rags	LL
68	869422	9/22/2020	1600 Kit Carson Way	Category 3	17	16	94%	Roots	LL
69	869983	10/11/2020	710 Vine Ave	Category 3	10	9	90%	Pipe/Structure Failure	LL
70	869767	10/11/2020	2006 Poliey Dr	Category 3	5	4	80%	Roots	LL
71	870006	10/22/2020	305 Union St	Category 3	1.5	0.28	19%	Roots	LL
72	870345	10/28/2020	2207 Lee Way	Category 3	6	4	67%	Roots	LL
73	870728	11/4/2020	420 Winfield Ct	Category 3	30	29	97%	Roots	LL
74	870959	11/11/2020	101 Sharon Way	Category 3	2	2	100%	Roots	LL
75	871000	11/24/2020	1559 Mistywood Dr	Category 3	55	0	0%	Roots	LL
76	871051	11/27/2020	1011 Oakland Ave	Category 3	64	44	69%	Pipe/Structure Failure	LL
77	871442	12/9/2020	609 Windsor Dr	Category 3	44	43	98%	Pipe/Structure Failure	Main
78	871608	12/14/2020	105 Half D St	Category 3	48	44	92%	Roots	LL
79	872084	12/22/2020	333 Atkinson St	Category 3	17	1	6%	Roots	LL
80	871663	12/26/2020	406 Berkeley	Category 3	2	0	0%	Roots	LL
81	871531	1/3/2021	538 Loretto Ave	Category 3	5	1	20%	Roots	LL
82	872200	1/5/2021	330 Circuit Dr	Category 3	5	1	20%	Pipe/Structure Failure	LL
83	872110	1/9/2021	1729 Tanglewood	Category 3	33	30	91%	Roots	Main
84	871602	1/10/2021	628 Main St	Category 3	49	46	94%	Roots	LL
85	872277	1/25/2021	420 Circuit Dr	Category 3	5	2	40%	Roots	LL
86	872331	2/4/2021	213.5 Irene	Category 3	2	1	50%	Pipe/Structure Failure	LL
87	872405	2/4/2021	221 Church St	Category 3	2	1	50%	Roots	LL
88	872635	2/8/2021	1326 Chignahuapan Way	Category 3	2	2	100%	Debris-Rags	LL
89	872485	2/9/2021	805 Clina Way	Category 3	17	15	88%	Debris-Rags	LL
90	873130	2/14/2021	1011 Circuit Dr	Category 3	46	41	89%	Roots	LL
91	873014	2/16/2021	209 Elm St	Category 3	19	0	0%	Pipe/Structure Failure	LL
92	872794	2/16/2021	224 Diamond Oaks Rd	Category 3	15	15	100%	Pipe/Structure Failure	LL
93	872482	2/18/2021	510 Highland Ave	Category 3	2	0	0%	Roots	LL

94	872632	2/26/2021	1467 West Colonial Pkwy	Category 3	2	1	50%	Pipe/Structure Failure	LL
95	872728	3/1/2021	329 Berkeley Ave	Category 3	9	8	89%	Pipe/Structure Failure	LL
96	872928	3/4/2021	115 Alta Vista Ave	Category 3	2	1	50%	Pipe/Structure Failure	LL
97	872853	3/9/20121	701 Lincoln St	Category 3	23	22	96%	Roots	LL
98	873302	3/11/2021	543 Alta Vista Ave	Category 3	31	25	81%	Roots	LL
99	873405	3/16/2021	406 Earl	Category 3	11	9	82%	Pipe/Structure Failure	LL
100	873615	3/24/2021	824 Atlantic St	Category 3	18	14	78%	Pipe/Structure Failure	LL
101	873317	3/27/2021	69 Bernice Ave	Category 3	1	0	0%	Roots	LL
102	873318	3/28/2021	206 Irene Ave	Category 3	3	3	100%	Roots	LL
103	873529	3/31/2021	100 Atkinson St	Category 3	20	2	10%	Pipe/Structure Failure	LL
104	873738	4/5/2021	243 Irene Ave	Category 3	1	0	0%	Contractor Cause	LL
105	873705	4/6/2021	2029 Polley Dr	Category 3	19	0	0%	Roots	LL
106	874120	4/12/2021	521 Main St	Category 3	2	1	50%	Roots	LL
107	873979	4/19/2021	1105 Muir Ct	Category 3	6	5	83%	Roots	LL
108	874115	4/21/2021	252 Elm St	Category 3	4	0	0%	Roots	LL
109	874206	4/28/2021	702 Vinewood	Category 3	12	3	25%	Roots	LL
110	873975	5/1/2021	1215 Sheffield Way	Category 3	2	1	50%	Roots	LL
111	873970	5/4/2021	1610 Old Hart Ranch Rd	Category 3	28	25	89%	Roots	LL
112	874471	5/17/2021	213 Half Irene Ave	Category 3	5	1	20%	Roots	LL
113	874814	5/30/2021	312 Earl Ave	Category 3	7	1	14%	Roots	LL
114	875444	6/28/2021	307 Brentwood Rd	Category 3	5	1	20%	Roots	LL

NOTES:

*Spill Report was entered in California Integrated Water Quality System Project (CIWQS). However City Spill Report was lost during Transition.

7.2 Appendix – SSO Data Comparison Charts

2018/2019 SSO Data Comparison

		Spill Volume		Rec Volume		SSO Duration		Response Time		Duration	Response	Cause		
	EVENT ID	CIWQS	City	CIWQS	City	CIWQS	City	CIWQS	City	>3 hr	>40 min	CIWQS	City	Notes
1	850146	105	105	105	105	0.156944	0.156944	0.006944	0.006944	1	0	Pipe Structural Problem/Failure	Debris-Rags	
2	850517	1	1	1	1	0.033333	0.033333	0.017361	0.017361	0	0	Root Intrusion	Roots	
3	850609	26	26	0	0	0.189583	0.189583	0.013889	0.013889	1	0	Root Intrusion	Roots	
4	850709	13	13	3	3	0.004167	0.004167	0.029167	0.029167	0	1	Pipe Structural Problem/Failure	Roots	
5	850868	28	28	25	25	0.765972	0.765972	0.006944	0.006944	1	0	Root Intrusion	Roots	
6	851063	409	409	0	0	2.180556	2.180556	0.011111	0.011111	1	0	Root Intrusion	Roots	
7	851163	16	16	1	1	0.046528	0.046528	0.03125	0.03125	0	1	Pipe Structural Problem/Failure - Installation	Roots	
8	851297	2	2	2	2	0.001389	0.001389	0	0.019444	0	0	Pipe Structural Problem/Failure	Roots	Incorrect Agency Notification time in CIWQS
9	852004	17	17	15	15	0.024306	0.024306	0.009028	0.009028	0	0	Root Intrusion	Roots	
10	852225	19	19	13	13	0.051389	0.051389	0.009028	0.009028	0	0	Root Intrusion	Roots	
11	855199	33	33	0	0	0.083333	0.083333	0.013889	0.013889	0	0	Root Intrusion	Roots	
12	855472	10	10	10	10	0.0625	0.0625	0.009722	0.009722	0	0	Grease Deposition (FOG)	Grease	
13	855675	29	29	25	25	0.072917	0.072917	0.006944	0.006944	0	0	Debris-Wipes/Non-Dispersables	Debris-Rags	
14	855930	1	1	1	1	0.007639	0.007639	0.006944	0.006944	0	0	Root Intrusion	Roots	
15	855986	2	2	2	2	0.030556	0.030556	0.013194	0.013194	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
16	856355	15	15	14	14	0.115278	0.115278	0.009722	0.009722	0	0	Root Intrusion	Roots	
17	856617	15	15	14	14	0.035417	0.035417	0.021528	0.021528	0	0	Debris-Wipes/Non-Dispersables	Debris-Rags	
18	856798	9	9	7	7	0.047222	0.047222	0.027778	0.027778	0	0	Root Intrusion	Roots	
19	856801	3	3	2	2	0.027083	0.027083	0.00625	0.00625	0	0	Pipe Structural Problem/Failure	Debris-Rags	
20	856820	3	3	1	1	0.045833	0.058333	0	0.0125	0	0	Pipe Structural Problem/Failure - Installation	Pipe/Structure Failure	Incorrect Operator Arrival time and SSO End time in CIWQS
21	857431	20	20	19	19	0.549306	0.549306	0.01875	0.01875	1	0	Root Intrusion	Roots	
22	857531	5	5	5	5	0.038889	0.049306	0.013889	0.013889	0	0	Root Intrusion	Roots	Incorrect SSO Start time in CIWQS
23	858014	3	3	0	0	0.217361	0.217361	0.018056	0.018056	1	0	Root Intrusion	Roots	
24	858150	15	15	12	12	0.0375	0.0375	0.009722	0.009722	0	0	Debris from Construction	Debris-Rags	
25	858177	5	5	3	3	0.050694	0.050694	0.020833	0.020833	0	0	Debris-Rags	Debris-Rags	
26	858533	6	6	4	4	0.044444	0.044444	0.023611	0.023611	0	0	Debris-Wipes/Non-Dispersables	Debris-Rags	
27	858540	4	4	3	3	0.036111	0.036111	0.011806	0.011806	0	0	Debris-Wipes/Non-Dispersables	Debris-Rags	
28	858670	22	22	13	13	0.05625	0.05625	0.004861	0.004861	0	0	Root Intrusion	Roots	
29	858673	11	11	10	10	0.041667	0.041667	0.0125	0.0125	0	0	Root Intrusion	Roots	
30	859382	20	20	15	15	0.054167	0.054167	0.019444	0.019444	0	0	Root Intrusion	Roots	
31	860089	2	2	2	2	0.0375	0.0375	0.017361	0.015972	0	0	Root Intrusion	Roots	Incorrect Agency Notification time in CIWQS
	Total	869	869	327	327	5.145833	5.16875	0.421528	0.452083	6	2			
				38%	38%									
	31													
	Avg					3:59:02	4:00:06	0:19:35	0:21:00					

2019/2020 SSO Data Comparison

		Spill Volume		Rec Volume		SSO Duration		Response Time		Duration	Response	Cause		
	EVENT ID	CIWQS	City	CIWQS	City	CIWQS	City	CIWQS	City	>3 hr	>40 min	CIWQS	City	Notes
1	861344	3	3	0	0	0.68125	0.68125	0.021528	0.011111	1	0	Root Intrusion	Roots	Incorrect Agency notification time in CIWQS
2	861387	18	18	8	8	0.041667	0.041667	0.013889	0.013889	0	0	Root Intrusion	Roots	
3	861459	5	5	2	2	0.021528	0.021528	0.014583	0.014583	0	0	Root Intrusion	Roots	
4	861492	3	3	2	2	0.109028	0.109028	0.031944	0.031944	0	1	Pipe Structural Problem/Failure	Roots	
5	861672	2	2	2	2	0.000694	0.000694	0	0.011111	0	0	CS Mainentance Caused Spill/Damage	Roots	Incorrect Agency notification time in CIWQS
6	862432	9	9	8	8	0.034028	0.034028	0.023611	0.023611	0	0	Root Intrusion	Roots	
7	862480	3	3	2	2	0.036111	0.036111	0.025694	0.025694	0	0	Debris-Rags	Debris-Rags	
8	863062	5	5	0	0	0.533333	0.533333	0.016667	0.016667	1	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
9	863091	16	16	12	12	0.038194	0.038194	0.027778	0.027778	0	0	Debris-Rags	Debris-Rags	
10	863198	1	1	1	1	0.022222	0.022222	0.011806	0.011806	0	0	Root Intrusion	Roots	
11	863634	77	77	74	74	0.043056	0.043056	0.011806	0.011806	0	0	Debris-Rags	Debris-Rags	
12	863690	13	11	6	6	0.027778	0.027778	0.017361	0.017361	0	0	Root Intrusion	Roots	
13	863728	8	8	6	6	0.040278	0.04375	0.028472	0.028472	0	1	Root Intrusion	Roots	Incorrect SSO Start time in CIWQS- off by 5 mins
14	863729	9	9	3	3	0.601389	0.601389	0.007639	0.007639	1	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
15	863785	11	11	10	10	0.029167	0.029167	0.009722	0.009722	0	0	Root Intrusion	Roots	
16	863802	33	33	31	31	0.039583	0.039583	0.008333	0.008333	0	0	Root Intrusion	Roots	
17	863888	20	20	19	19	0.032639	0.032639	0.011806	0.011806	0	0	Root Intrusion	Roots	
18	863893	13	13	12	12	0.015972	0.015972	0.005556	0.005556	0	0	Root Intrusion	Roots	
19	863909	3	5	1	3	0.020139	0.020139	0.009722	0.009722	0	0	Debris-Rags	Debris-Rags	
20	864408	9	9	8	8	0.011806	0.011806	0.013889	0.013889	0	0	Debris-Rags	Debris-Rags	
21	864470	4	4	3	3	0.0375	0.0375	0.022222	0.022222	0	0	Root Intrusion	Pipe/Structure Failure	
22	864668	20	20	19	19	0.006944	0.006944	0.008333	0.008333	0	0	Root Intrusion	Roots	
23	864796	40	40	38	38	1.020833	0.020833	0.008333	0.008333	0	0	Debris-Wipes/Non-Dispersables	Debris-Rags	
24	864878	3	3	3	3	0.010417	0.010417	0.01875	0.01875	0	0	Root Intrusion	Roots	
25	865188	2	2	1	1	0.006944	0.006944	0.017361	0.017361	0	0	Pipe Structural Problem/Failure	Debris-Other	
26	865218	1	1	0	0	0.020833	-0.01181	0.016667	0.016667	0	0	Root Intrusion	Roots	SSO End Time on City Spill Report does not make sense.
27	865414	2	2	1	1	0.034722	0.034722	0.013889	0.013889	0	0	Root Intrusion	Roots	
28	865833	3	3	1	1	0.073611	0.073611	0	0	0	0	Debris-Wipes/Non-Dispersables	Debris-Rags	Notification time and Arrival time occurred at the same time. This a a operator noticed spill.
29	866387	5	5	5	5	0.040278	0.040278	0.029861	0.029861	0	1	Debris-Wipes/Non-Dispersables	Debris-Rags	
30	866491	9	9	9	9	0.832639	0.832639	0.005556	0.005556	1	0	Debris-Rags	Debris-Rags	
31	866906	154	154	149	139	0.106944	0.106944	0.015972	0.015972	0	0	Damage by Others Not Related to CS Construction/Maintenance (Specify Below)	Contractor Cause	
32	867100	16	16	14	14	0.039583	0.039583	0.015972	0.015972	0	0	Debris-Rags	Debris-Rags	
33	867987	60	0	35	0	1.704861	0	0.034722	0	0	0	Debris-Rags	Debris-Rags	CIty spill report is missing no way to compare info
	Total	580	520	485	442	6.315972	2.465972	0.519444	0.485417	4	3			
				84%	85%									
	33													
	Avg					4:35:36	1:47:36	0:22:40	0:21:11					

2020/2021 SSO Data Comparison

		Spill Volume		Rec Volume		SSO Duration		Response Time		Duration	Response	Cause		
	EVENT ID	CIWQS	City	CIWQS	City	CIWQS	City	CIWQS	City	>3 hr	>40 min	CIWQS	City	Notes
1	868910	10	10	9	9	0.020833	0.020833	0.010417	0.010417	0	0	Root Intrusion	Roots	
2	868986	10	10	9	9	0	0.025694	0.015278	0.015278	0	0	Root Intrusion	Roots	Incorrect Spill End Date was entered in CIWQS. Should be 9/13, but 9/3 was entered. Time was correct.
3	869306	90	89.2	32	32	0.600694	0.600694	0.015278	0.015278	1	0	Debris-Wipes/Non-Dispersables	Debris-Rags	Incorrect Spill Volume Reported to CIWQS.
4	869422	17	17	16	16	0.029167	0.029167	0.01875	0.01875	0	0	Root Intrusion	Roots	
5	869767	5	5	4	4	0.025	0.025	0.014583	0.014583	0	0	Root Intrusion	Roots	
6	869983	10	10	9	9	0.021528	0.021528	0.011111	0.011111	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
7	870006	2	1.5	0	0.28	3.945833	3.945833	0.009028	0.009028	1	0	Root Intrusion	Roots	Incorrect Spill Volume and Recovered Volume Reported to CIWQS
8	870345	6	6	4	4	0.028472	0.028472	0.018056	0.018056	0	0	Root Intrusion	Roots	
9	870728	30	30	29	29	0.015278	0.015278	0.013194	0.013194	0	0	Root Intrusion	Roots	
10	870959	2	2	2	2	0.020139	0.020139	0.008333	0.008333	0	0	Root Intrusion	Roots	
11	871000	55	55	0	0	0.664583	0.664583	0.00625	0.00625	1	0	Root Intrusion	Roots	
12	871051	64	64	44	44	1.996528	1.996528	0.001389	0.001389	1	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
13	871442	44	44	43	43	0.03125	0.03125	0.007639	0.007639	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
14	871531	5	5	1	1	0.032639	0	0.022222	0.022222	0	0	Root Intrusion	Roots	Incorrect End Spill time entered in CIWQS. Spill was not active upon arrival.
15	871602	49	49	46	46	0.329861	0.329861	0.009028	0.009028	1	0	Root Intrusion	Roots	
16	871608	48	48	44	44	0.041667	0.041667	0.00625	0.00625	0	0	Root Intrusion	Roots	
17	871663	2	2	0	0	0.020833	0	0.016667	0.017361	0	0	Root Intrusion	Roots	Incorrect Agency Notification time in CIWQS. No SSO end time in City report or Narrative. Unknown when Spill ended.
18	872084	17	17	1	1	0.041667	0.041667	0.007639	0.004861	0	0	Root Intrusion	Roots	Incorrect Agency Notification time in CIWQS
19	872110	33	33	30	30	0.15625	0.15625	0.006944	0.006944	1	0	Root Intrusion	Roots	
20	872200	5	5	1	1	0.0375	0.0375	0.004167	0.004167	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
21	872277	5	5	2	2	0.052778	0.020833	0.010417	0.010417	0	0	Root Intrusion	Roots	Incorrect End Spill time entered in CIWQS. Spill was not active upon arrival.
22	872331	2	2	1	1	0.056944	0.056944	0.014583	0.014583	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
23	872405	2	2	1	1	0.010417	0.010417	0.011806	0.011806	0	0	Root Intrusion	Roots	
24	872482	2	2	0	0	0.529861	0.529861	0.013889	0.013889	1	0	Root Intrusion	Roots	
25	872485	17	17	15	15	0.003472	0.003472	0	0.01875	0	0	Debris from Lateral	Debris-Rags	Incorrect Agency Notification time in CIWQS
26	872632	2	2	1	1	0.010417	0.010417	0.008333	0.008333	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
27	872635	2	2	2	2	0.071528	0.071528	0.026389	0.026389	0	0	Root Intrusion	Debris-Rags	
28	872728	9	9	8	8	0.001389	0.001389	0	0.009722	0	0	Debris from Lateral	Pipe/Structure Failure	Incorrect Agency Notification time in CIWQS
29	872794	15	15	15	15	0.052083	0.054167	0.009722	0.008333	0	0	Root Intrusion	Pipe/Structure Failure	Incorrect End spill time and Agency notification time in CIWQS
30	872853	23	23	22	22	0.048611	0.048611	0.007639	0.007639	0	0	Root Intrusion	Roots	
31	872928	2	2	1	1	0.010417	0.010417	0.00625	0.00625	0	0	Root Intrusion	Pipe/Structure Failure	
32	873014	19	19	0	0	0.0625	0.0625	0.009722	0.009722	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
33	873130	46	46	41	41	0.111806	0.111806	0.025694	0.025694	0	0	Root Intrusion	Roots	
34	873302	31	31	25	25	2.027083	2.027778	0.004861	0.004861	1	0	Root Intrusion	Roots	
35	873317	1	1	0	0	0.034028	0.034028	0.023611	0.023611	0	0	Root Intrusion	Roots	
36	873318	3	3	3	3	0.011806	0.011806	0.020833	0.020833	0	0	Root Intrusion	Roots	
37	873405	11	11	9	9	0.024306	0.024306	0.013889	0.013889	0	0	Pipe Structural Problem/Failure	Pipe/Structure Failure	
38	873529	20	20	2	2	0.604167	0.604167	0.009028	0.009028	1	0	Grease Deposition (FOG)	Pipe/Structure Failure	

7.3 Appendix – Structural SSO GIS Mapping

A 7.3

Structural SSO GIS MAPPING

Overlaid on City of Roseville I&I Study - 2018

Existing Conditions Average RDII[gpd/idm and Conduit Age [year]

PG WWTP

PGWWTP

DCWWTP

DC WWTP

Highlands

Sierra College/StrapRav

Structural Caused SSOs

Legend

Age [year]

- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 50
- 51 - 80
- 81 - 110

Ave. RDII [gpd/idm]

- 1 - 200
- 201 - 600
- 601 - 1000
- 1001 - 2000
- 2001 - 2500
- 2501 - 3000
- 3001 - 3500
- 3501 - 4000
- 4001 - 5000
- 5001 - 9629

N

1:50,000

CITY OF ROSEVILLE CALIFORNIA

WATERWORKS ENGINEERS

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

7.4 Appendix – Key Performance Indicators

SSS WDR Ref.	Description	Performance Indicator	Unit	Target	KPI Data FY 14/15	KPI Data FY 15/16	KPI Data FY 16/17	KPI Data FY 17/18	KPI Data FY 18/19	KPI Data FY 19/20	KPI Data FY 20/21	Audit Frequency	Responsible Party
D.ii.c	Chain of Communication	Average response to customer inquiry	Minute	40	19.58	23	20	21	20	21	21	Quarterly	WW Superintendent
		Total customer service requests	Number	0	915	1549	533	302	288	523	325	Quarterly	WW Superintendent
		Total sewer odor complaints	Number	0	9	43	50	39	45	10	24	Quarterly	WW Superintendent
		Average rating in customer service card	Number	5	5	5	5	5	5	5	5	Quarterly	WW Superintendent
D.iv.a	Maps	Average response time to map update requests	Days	90	90	90	90	90	90	90	90	Quarterly	WW Superintendent
D.iv.b	PM Activities	Manholes Inspection performed	Number	0	2493	3575	1547	1511	149	293	88	Quarterly	WW Superintendent
		Sewer main flushed per year	Miles	250	284	248	295	283.12	226.1	235.9	296.14	Quarterly	WW Superintendent
		Sewer laterals mechanically cleaned (eeled) per year	Miles	8	14.32	14.77	7.41	1.07	268	235	74	Quarterly	WW Superintendent
		Working staff time to PM program	%	80%	85%	82%	82%	84%	84%	83%	84%	Quarterly	WW Superintendent
		Number of customer accounts per WW employee	Number	561	1517	1554	1772	1757	1943	1873	1873	Quarterly	WW Superintendent
		Average cost of hydro cleaning	$/lf	$0.36	$0.32	$0.33	$0.29	$0.32	$0.34	$0.34	$0.34	Annually	WW Superintendent
		Average cost of sewer mechanical cleaning	$/lf	$1.60	$1.20	$0.77	$0.94	$1.66	$0.30	$0.30	$0.30	Annually	WW Superintendent
D.iv.c	R&R Plan	Manholes rehabilitated	Number	50	0	0	0	0	0	0	0	Quarterly	WW Superintendent
		Sewer main CCTV inspected per year	Miles	30	75	84.32	59.71	64.1	119.9	94.65	38.57	Quarterly	WW Superintendent
		Sewer laterals CCTV inspected per year	Miles	16	26	35.71	32.51	36.14	29.74	22.46	27.88	Quarterly	WW Superintendent
		Sewer cleanouts installed per year	Number	75	76	83	144	141	67	118	58	Quarterly	WW Superintendent
		Sewer Laterals Rehabilitated	Number	50	48	60	85	89	74	82	110	Quarterly	WW Superintendent
		Total miles rehabed or replaced per year (main)	Miles	5	6	0	0	1.07	0.05	0.09	3.4	Annually	EU Engineering
		Total miles rehabed or replaced per year (lateral)	Miles	0.25	0.16	0.27	0.66	0.42	0.45	0.46	0.62	Annually	EU Engineering
		Annual capitol budget sewer rehab/replacement	$/M	$1.80	$1.05	$1.36	$2.61	$2.25	$2.70	$2.70	$2.10	Annually	WW Superintendent
		Average cost of CCTV main	$/lf	$0.53	$0.41	$0.41	$0.36	$0.40	$0.60	$0.75	$1.85	Annually	WW Superintendent
		Average cost of CCTV lateral	S/lf	$1.34	$1.11	$1.15	$1.04	$1.00	$1.24	$1.29	$1.28	Annually	WW Superintendent
D.iv.d	Training	On the job accidents	Number	0	5	3	3	4				Quarterly	EU Safety Coordinator
D.iv.e	Critical Parts	% of required numberof identified critical parts are stocked	%	100	100	100	100	100	100	100	100	Annually	Materials Technician
D.v.a&b	Construction	% of new sewer main accepted vs. inspected	%	100	100	100	100	100	100	100	100	Annually	WW Supervisor
		% of new sewer lateral accepted vs. inspected	%	100	100	100	100	100	100	100	100	Annually	WW Supervisor
D.vi.a	Notification	Average response time to SSO	Minutes	40	20	23	20	17	21	22	17	Quarterly	WW Superintendent
D.vi.b	SSO Response	Average SSO duration (main)	Minutes	40	n/a	70	0	0	0	154	146	Quarterly	WW Superintendent
		Average SSO duration (lateral)	Minutes	40	n/a	37	48	36	171	245	285	Quarterly	WW Superintendent
D.vii.a	Public Education	FOG public education outreach program events per year	Number	4	3	4	3	3	2	1	1	Annually	Environmental Utilities PIO
D.vii.b	FOG Disposal	Gallons of FOG curbside pickup per year	Gallons	25	179.75	293.1	373.25	296	506	323	595	Quarterly	Refuse Division
D.vii.d	BMPs &Devices	% of total FSE's with grease removal devices	%	90	90	97	98	98	98	98	98	Annually	Ind Waste Technician
		% of total FSE's with a variance	%	5	4	4	4	4	4	4	4	Annually	Ind Waste Technician
D.vii.e	FOG Inspections	FSE FOG inspections per year	Number	294	n/a	n/a	181	231	N/A	N/A	221	Quarterly	Ind Waste Technician
		Number of new FSE permits issued per year	Number	5	n/a	n/a	40	46	N/A	N/A	36	Quarterly	Ind Waste Technician
D.vii.f	Hot Spots	% of hotspot pipes CCTV inspected each year	%	100%	100%	100%	100%	100%	100%	100%	100%	Annually	WW Supervisor
		Number of SSO's caused by hot spots	Number	0	0	0	0	0	0	0	0	Quarterly	WW Superintendent
		SSO volume casued by hot spots	Gallons	0	0	0	0	0	0	0	0	Quarterly	WW Superintendent
		Total number of SSO's mains and laterals	Number	76	42	39	24	25	31	32	51	Quarterly	WW Superintendent
		Total volume SSO's mains and laterals	Gallons	2000	1202	2523	1086	1565	869	517	772	Quarterly	WW Superintendent
		% of total SSO volume recovered	%	100	94.5	95.42	91.25	53.86	37.63	86.8	63	Quarterly	WW Superintendent
		Total number of wet weather SSO's	Number	0	0	0	0	0	0	0	0	Quarterly	WW Superintendent
		Total volume of wet weather SSO's	Gallons	0	0	0	0	0	0	0	0	Quarterly	WW Superintendent

D.ix.e	SSO Trends	% of SSO's caused by FOG (main)	%	1	50	50	0	0	100%	0	0	Quarterly	WW Superintendent
		% of SSO's caused by roots (main)	%	70	0	0	0	0	0	0	50%	Quarterly	WW Superintendent
		% of SSO's caused by debris/rags (main)	%	0	0	0	0	0	0	100%	50%	Quarterly	WW Superintendent
		Number of SSO's caused by LS failure	Number	0	0	0	0	0	0	0	0	Quarterly	WW Superintendent
		Number of SSO's caused by pipe/structural failures	Number	0	0	1	1	3	1	3	14	Quarterly	WW Superintendent
		% of SSO's caused by FOG (laterals)	%	10	0	0	0	0	0	0	0	Quarterly	WW Superintendent
		% of SSO's casued by roots (laterals)	%	75	77.5	84	87	48	20	16	35	Quarterly	WW Superintendent
		% of SSO's casued by debris/rags (laterals)	%	0	12.5	10.8	9	28	9	11	2	Quarterly	WW Superintendent
		Repeats SSO's within two years	Number	0	2	0	0	0	4	1	1	Quarterly	WW Superintendent
		Number of Category 1 SSO's	Number	0	0	0	0	1	0	0	0	Quarterly	WW Superintendent
		SSO's/100 miles of pipe/year- Category 2	Number	2	0	1	0	0	0	0	0	Quarterly	WW Superintendent
		SSO's/100 miles of pipe/year - lateral	Number	15	16.26	15.04	9.35	8.81	9.56	10.24	16.38	Quarterly	WW Superintendent
		SSO's/100 miles of pipe/year -mains	Number	0.6	0.4	0.4	0	0.19	0.52	0.52	0.35	Quarterly	WW Superintendent
		Flooding claims per year	Number	0	1	0	0					Quarterly	WW Superintendent
		Total Cost of claims per year	$	0		0	0					Quarterly	Risk Management

7.5 Appendix – Change Log Example

3.5 References

3.5.1 SSMP Sample Change Log

{Insert Enrollee Name}
Sewer System Management Plan
Change Log

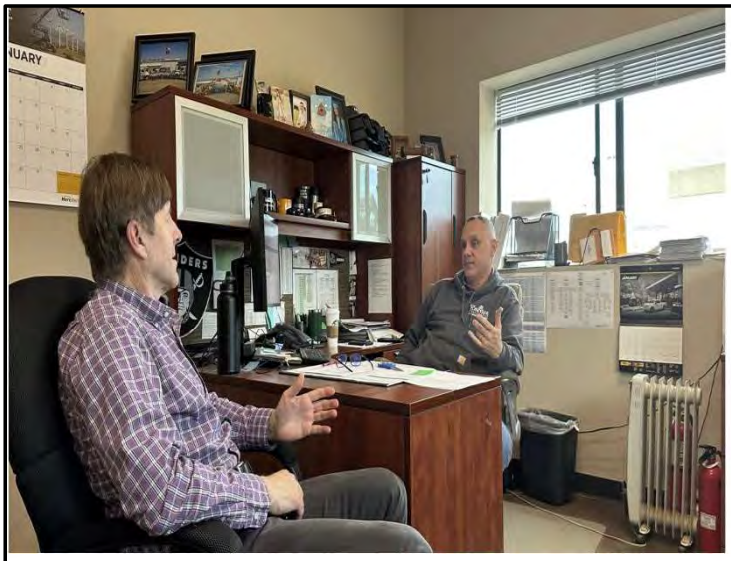
Date	SSMP Element/ Section	Description of Change/Revision Made	Change Authorized By:

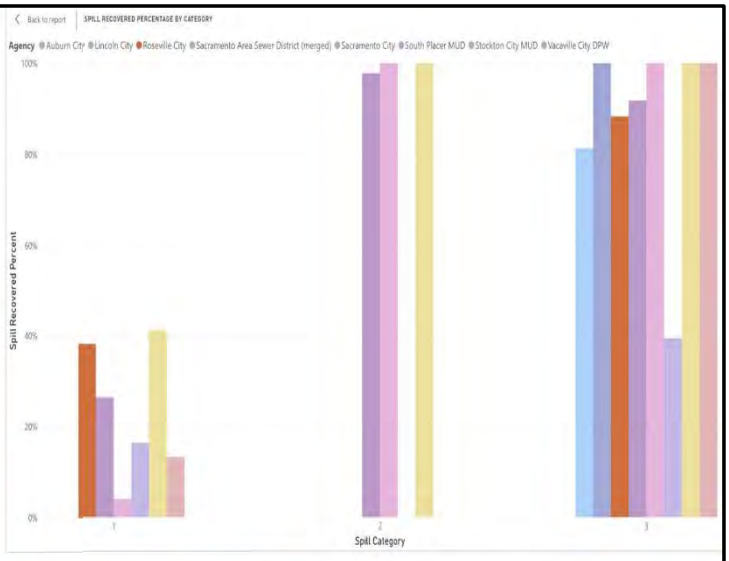
Appendix 10-6

SSPM Audit Fiscal Years 22/23 and 23/24

Sewer System Management Plan (SSMP) Audit

(May 2022 to May 2024)





CITY OF ROSEVILLE CALIFORNIA

TABLE OF CONTENTS

PART 1 (Executive Summary) 4

PART 2 (SSMP Audit Findings/Recommendations) 16

Element 1 – Goal And Introduction 16

1.1 Regulatory Context 16

1.2 SSMP Update Schedule 16

1.3 Sewer System Asset Overview 16

Element 2 – Organization 19

Element 3 – Legal Authority 22

Element 4 – Operations and Maintenance Program 25

4.1 Updated Map of Sewer System 25

4.2 Preventive Operation and Maintenance Activities 25

4.3 Training 25

4.4 Equipment Inventory 26

Element 5 – Design and Performance Provisions 29

5.1 Updated Design Criteria and Construction Standards 29

5.2 Procedures and Standards 29

Element 6 – Spill Emergency Response Plan 31

Element 7 – Sewer Pipe Blockage Control Program 35

Element 8 – System Evaluation, Capacity Assurance, Capital Improvements 38

8.1. System Evaluation and Condition Guidance 38

Element 9 – Monitoring, Measurement, Program Modifications 42

Element 10 – Internal Audits 44

Element 11 – Communication Program 47

LIST OF APPENDICIES.....49

- APPENDIX 1 – Compliance Evaluation Inspection (CEI) Report
- APPENDIX 2 – City Performance Metrics and Key Performance Indicators (KPIs)
- APPENDIX 3 – City Spill Performance Benchmark Report
- APPENDIX 4 – City SSMP Audit Implementation Plan and Schedule (2024-2025)

CERTIFICATE

OF COMPLETION

CITY OF ROSEVILLE

Sewer System Management Plan Audit

May 2022-May 2024

- *Regulatory review, agency expectations and compliance best practices.*
- *Regional Water Quality Control Board inspector expectations.*
- *Completion of State Water Board Pre-Inspection Questionnaire*
- *Completion of Compliance Evaluation Inspection (CEI).*
- *Findings/Best Practice Recommendations for further improving agency program effectiveness, compliance, and resilience.*

FISCHER LLC COMPLIANCE
REGULATORY BEST PRACTICES

Jim Fischer

James Fischer, PE (NPDES Compliance Inspector)

May 7, 2024

FISCHER LLC COMPLIANCE
PRACTICES THAT COMPLY

3230 Arena Blvd, Suite #245.
Sacramento, CA 95834
916.606.5275
FischerCompliance.com

Mr. Dan Pruden
Collection System Superintendent
1800 Booth Road
Roseville, CA 95747

June 11, 2024

Dear Mr. Pruden,

We are pleased to present the 2022-2024 Sewer System Management Plan (SSMP) Audit for the City of Roseville (Attachment 1).

The SSMP Audit revealed the City is in full compliance with Attachment D-10 of the Reissued WDR (State Water Board Order No. 2022-0103-DWQ). The Audit also shed light on many City successful work programs in place. When comparing the City spill performance metrics with other collection systems in the Central Valley Regional Water Board area and throughout the State, the City performs near the top.

Detailed document reviews incorporating USEPA/Water Board inspection standards, an onsite simulated compliance inspection, and interviews with management and field staff were relied on for generating final findings and best practice recommendations in the report.

We look forward to supporting the City with its ongoing training, work program/process improvements, and implementation of the SSMP Audit findings to comply with the Reissued WDR.

Sincerely,

Jim Fischer

James Fischer, P.E.
Principal, Credentialed U.S. EPA NPDES Compliance Inspector

Attachment 1 (2022-2024 Sewer System Management Plan Audit Report)

PART 1 (Executive Summary)

The City of Roseville (City) is charged with complying the State Water Resources Control Board (SWRCB) General Reissued Waste Discharge Requirements (WDR) for Sanitary Sewer Systems ("Reissued WDR", Order No. 2022-0103-DWQ). The Reissued WDR replaced the original 2006 WDR (Order No. 2006-003-DWQ and its Monitoring and Reporting Program, Order No. 2013-0058-EXEC), which became effective on June 5, 2023.

The Reissued WDR requirements are the strictest sewer regulations in the country requiring a proactive approach for operations, maintenance, and management of sanitary sewer collection system to reduce or eliminate sewer spills. Attachment D-10 of the Reissued WDR requires periodic SSMP Audits to be completed by the City at least every three years.

To comply with the SSMP Audit requirements, Fischer Compliance LLC in collaboration with City management completed a Sewer System Management Plan (SSMP) Audit covering May 2021 through May 2024.

This Audit report meets and exceeds the minimum requirements specified in the Reissued WDR (Attachment D-10 and Specifications 5.4), scaled to the size/complexity of the City's sewer system.

Regulatory Background

The Reissued WDR requires local public sewer collection system agencies, referred to as "Enrollees," to develop a Sewer System Management Plan (Sewer System Management Plan). Sewer System Management Plans must be audited (by City staff or outside consultants) at least every three (3) years and updated every five (6) years according to the Water Board's regulatory schedule.

2006 WDR: To provide a consistent, statewide regulatory approach to address sewage spills, the State Water Resources Control Board (State Water Board) adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Order No. 2006-0003 (SSS WDRs), on May 2, 2006. All public agencies that own or operate a sanitary sewer system that is comprised of more than one mile of pipes or sewer lines that convey wastewater to a publicly owned treatment facility were required to apply for coverage under the Order.

2022 WDR: The 2006 WDR was rescinded and replaced with a "Reissued WDR" (Order No. 2022-0103-DWQ), adopted on December 5, 2023 which became effective on 6/5/2023. The Reissued WDR updates many aspects of the 16-year-old Order and includes a number of new requirements for Sewer System Management Plans.

SSMP Audit Procedures

A comprehensive SSMP Audit incorporating procedures developed by Fischer Compliance LLC was completed in June 2024. To complete of the SSMP Audit, the following key elements were incorporated for the SSMP assessments:

- Evaluation of pre-Inspection questionnaires
- Interviews with City collection management and field including both online and onsite conferences

- Completion of a Compliance Evaluation Inspection (CEI) incorporating standards and procedures utilized by U.S. EPA and the Water Boards to evaluate sanitary sewer system compliance (see Appendix 1)
- Review of the City's 2022 Sewer System Management Plan (SSMP)
- Review of City spill reports, system data, and other documentation
- Incorporation of guidelines and recommendations for SSMPs published by the Bay Area Clean Water Agencies (BACWA)[1].

Collection System Information

The City owns and operates sanitary sewer collection system (collection system) serving a population of approximately 151,901 and includes a total of 53,720 sanitary sewer connections. The collection system consists of approximately 590 miles of gravity sewer mains, 8 miles of pressure ("force main") sewers, and 17 individual sewage lift/pump stations.

Figure 1 below provides an overview of the City's current sanitary sewer system service area.

[1] *Available for download at: https://bacwa.app.box.com/s/cucxst3w2c4fl53jopuyayt6b3u4xjs5/file/1489440015726*

Figure 1: City sanitary sewer system service area

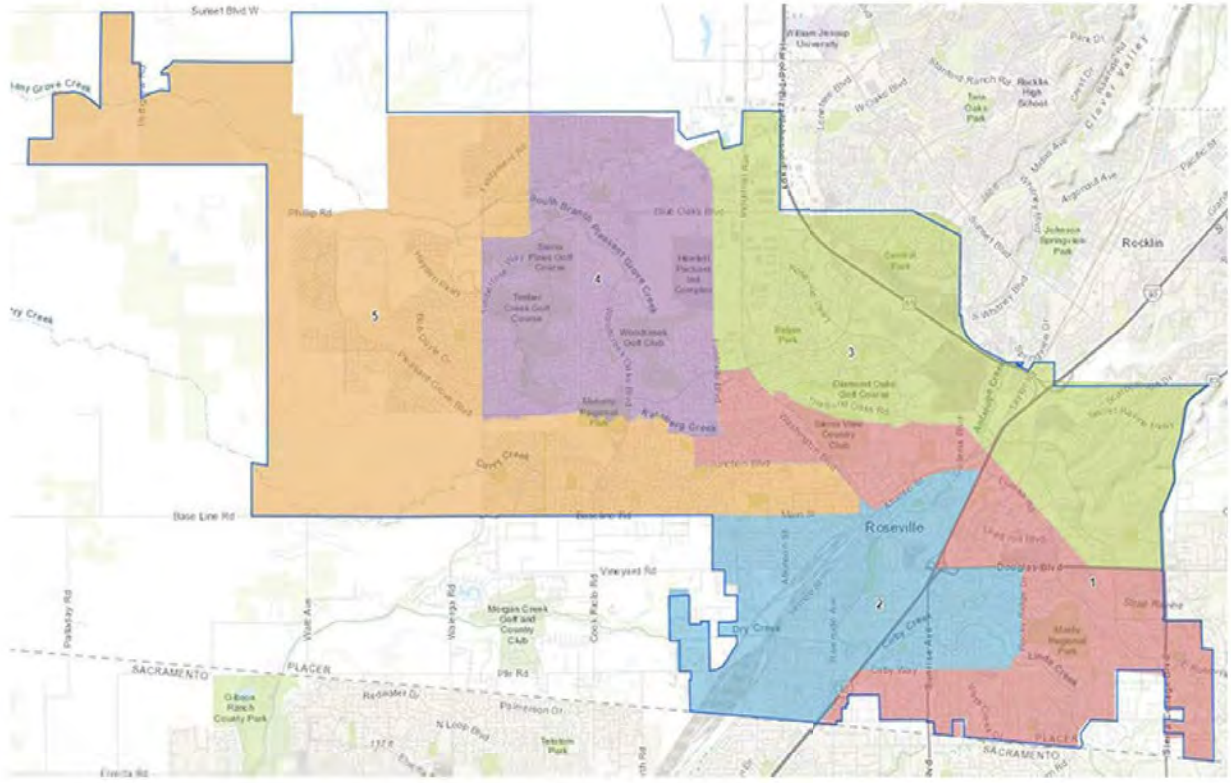


Figure 1 Roseville Service Area

Figure 2, below provides current City regulatory measures data published in the State Water Board Database (CIWQS)[2].

[2]*California Integrated Water Quality System (CIWQS), availably publicly at the following link:* *https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=drilldown&reportName=facilityAtAGlance&placeID=630701&reportID=7029229*

Figure 2: CIWQS regulatory measures information (City of Roseville, WDID # 5SPILL10935)

DRILLDOWN HISTORY: [BACK TO FACILITY LIST]
Place ID **630698**

General Information

Region	Place ID	Place Name	Place Type	Place Address	Place County
5S	630698	Dry Creek CS	Collection_System	2005 Hilltop Roseville, CA, 95747	Placer

Related Parties

Party	Party Type	Party Name	Role	Classification	Relationship Start Date	Relationship End Date
525944	Person	Chris Bracco	Is A Data Submitter For		01/29/2024	
633100	Person	Charles Cody Wilbanks	Is A Data Submitter For		05/12/2022	
532117	Person	Bryan Richard Buchanan	Is Onsite Manager For		05/02/2022	
543932	Person	Daniel Pruden	Is Onsite Manager For		01/28/2021	
610349	Person	Todd Jordan	Is Onsite Manager For		07/31/2020	03/07/2023
607016	Person	JAMES ISAAC VANDEVEER	Is A Data Submitter For		02/26/2020	04/05/2023
606422	Person	Michael Ryan	Is A Data Submitter For		02/06/2020	
606277	Person	joseph wade lightle	Is A Data Submitter For		01/31/2020	04/20/2022
606278	Person	Shane Rodgers	Is A Data Submitter For		01/31/2020	
543932	Person	Daniel Pruden	Is A Data Submitter For		10/24/2013	03/02/2021
534771	Person	Brian Bracco	Is Onsite Manager For		07/11/2012	01/26/2021
526457	Person	Dale Olson	Is Onsite Manager For		04/04/2011	08/14/2012
525944	Person	Chris Bracco	Is A Data Submitter For		02/18/2011	07/13/2012
525529	Person	Kenneth J. Glotzbach	Is Onsite Manager For		02/10/2011	
516794	Person	Kim Spear	Is Onsite Manager For		10/26/2009	05/24/2010
54788	Person	Arthur O'Brien	Is Onsite Manager For		10/23/2009	12/23/2010
388834	Person	Mark Cossairt	Is Onsite Manager For		07/16/2007	02/10/2011
11142	Organization	Roseville City	Owner	City Agency	10/12/2006	

Total Related Parties: 18

Regulatory Measures

Reg Measure ID	Reg Measure Type	Region	Program	Order No.	WDID	Effective Date	Expiration Date	Status	Amended?
301426	Enrollee - WDR	5S	SSOMUNILRG	2022-0103-DWQ	5SSO10935	08/03/2006		Active	N

Total Reg Measures: 1

Violations

Violation ID	Occurred Date	Violation Type	(-) Violation Description	Corrective Action	Status	Classification	Source

Report displays most recent five years of violations. Refer to the Interactive Violation Report for more data.

Total Violations: 0 **Priority Violations: 0**

*Click the "(+/-) Violation Description" link to expand and contract the violation description.
*As of 5/20/2010, the Water Board's Enforcement Policy requires that all violations be classified as 1, 2 or 3, with class 1 being the highest. Prior to this, violations were simply classified as Yes or No. If a 123 classification has been assigned to a violation that occurred before this date, that classification data will be displayed instead of the Yes/No data.

Violation Types

Enforcement Actions

Enf Id	Enf Type	Enf Order No.	Effective Date	Status
389207	Notice of Violation		02/19/2013	Historical

Total Enf Actions: 1

Inspections

Inspection ID	Inspection Type	Lead Inspector	Actual End Date	Planned	Violations	Attachment

Total Inspections: 0 **Last Inspection: None**

City SSMP/Audit Due Dates

This section provides an overview of upcoming due dates for the City to update its SSMP and complete its next SSMP Audit. Figure 4 below displays a summary of the upcoming due dates for the City (5/2/2025 for its next SSMP Update and 12/2/2024 for its next SSMP Audit) required under the Reissued WDR.

Figure 4: City of Roseville SSMP/Audit Due Dates

Sewer System Management Plan & Audit Required Due Dates
Transition from General Order 2006-0003-DWQ to Reissued General Order

Search by Waste Discharge Identification (WDID) Number

Enter your Waste Discharge Identification (WDID) number in the search field to retrieve the required Sewer System Management Plan (SSMP) Update and Audit due dates for your system

5SSO10935

Show Update/Audit Dates

Sewer System Management Plan & Subsequent Update Due Dates

System Name	WDID Number	Original Plan Required Due Date	Required Plan Update Due Date	Required Plan Update Due Date	Required Plan Update Due Date*
Dry Creek CS	5SSO10935	5/2/2009	5/2/2014	5/2/2019	5/2/2025

Audit Due Dates

System Name	WDID Number	Original Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	Required Plan Audit Due Date	End of Required 3-Year Audit Period**
Dry Creek CS	5SSO10935	5/2/2011	5/2/2013	5/2/2015	5/2/2017	5/2/2019	5/2/2021	5/2/2024

* Per Section 5.5 and Attachment E1, Section 3.11 of the General Order, Plan updates are due within six years after the required due date of the Enrollee's last Plan Update.

** Per Section 5.4 and Attachment E1, Section 3.10 of the General Order, the Audit Report is due within six months after the end of the required 3-year audit period.

City Spill Performance

This section provides an overview to showcase City spill performance information, including trends and benchmarks to allow a comparison of the City's performance against other collection system agencies within the Central Valley Regional Board area and State. Numerous data sets and visualizations were created (see Figures 5-8 below and Appendix 3, City Spill Performance Benchmark Report). As displayed in many of the visualizations, the City's spill rates and volumes discharged during the Audit period were consistently lower than most other sanitary sewer system agencies of comparable size located within the Central Valley Regional Board area. Additional visualizations, data, and observations are included in Appendix 3.

Figure 5: City of Roseville Spill Rates (# of spill per 100 miles of sewers) compared with other agencies

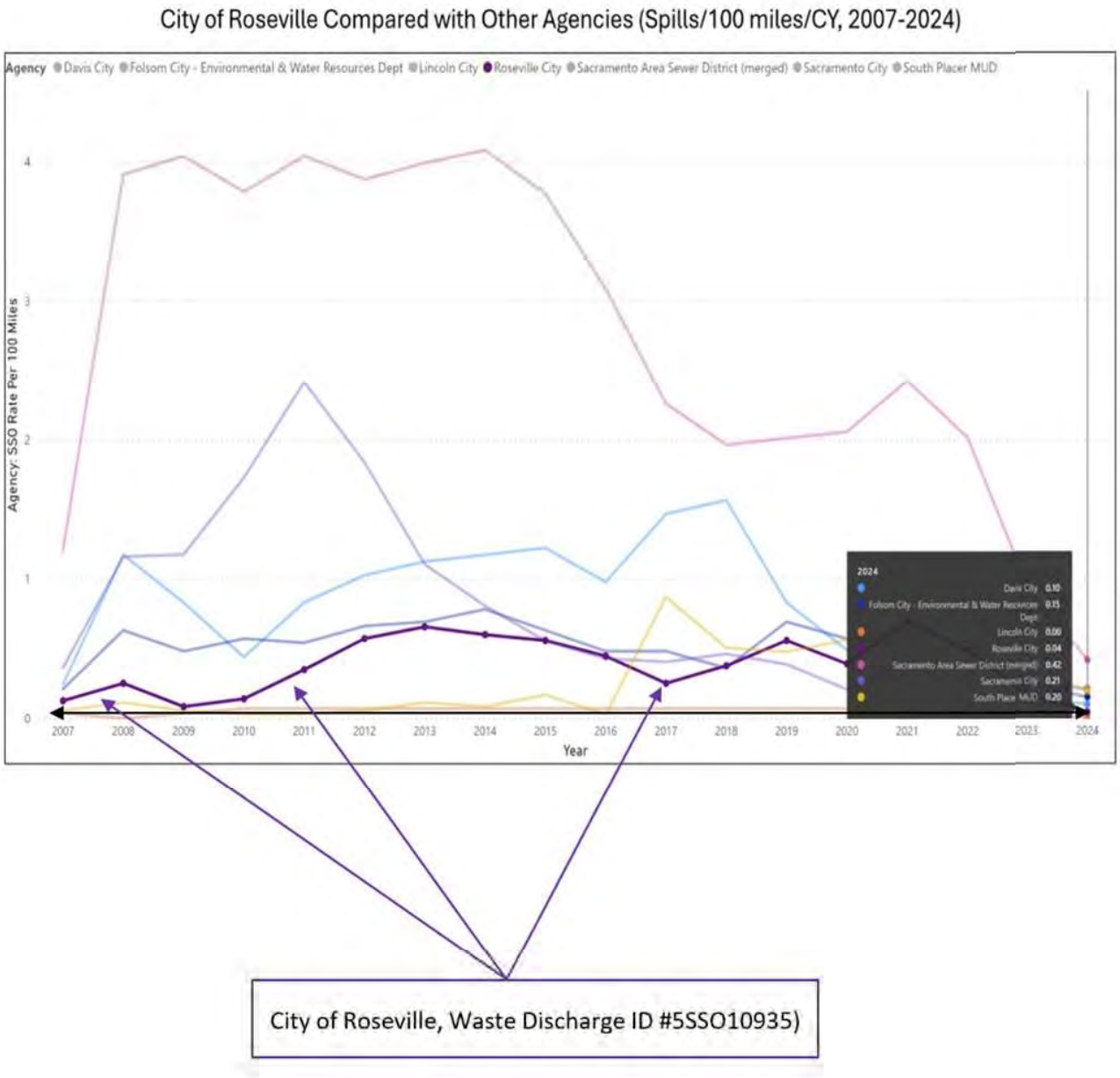
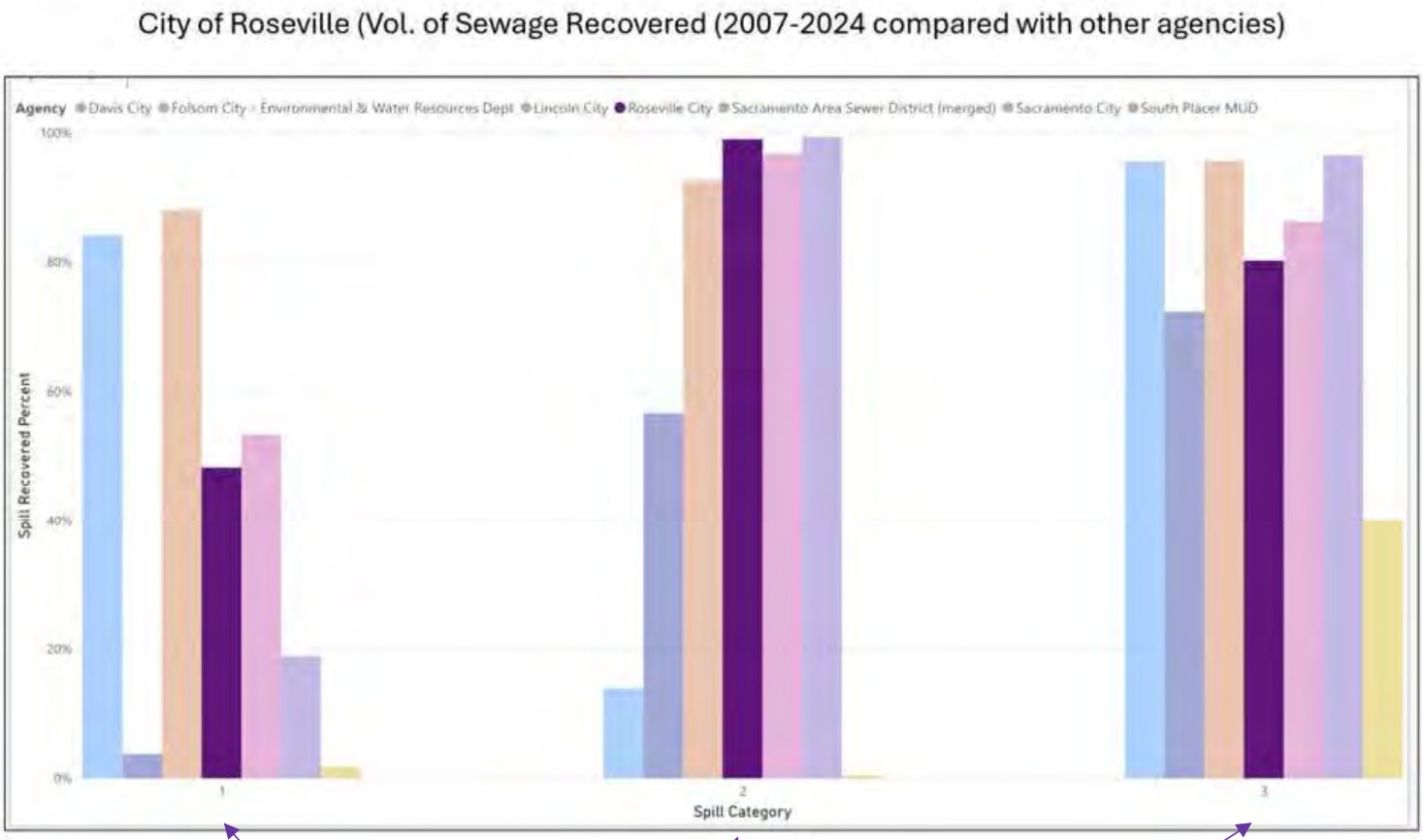


Figure 6: City of Roseville Spill Recovery Rates (%) compared with other agencies



City of Roseville, Waste Discharge ID #5SPILL10025)

Figure 7: City of Roseville spill volumes (gallons/year) compared with other agencies.

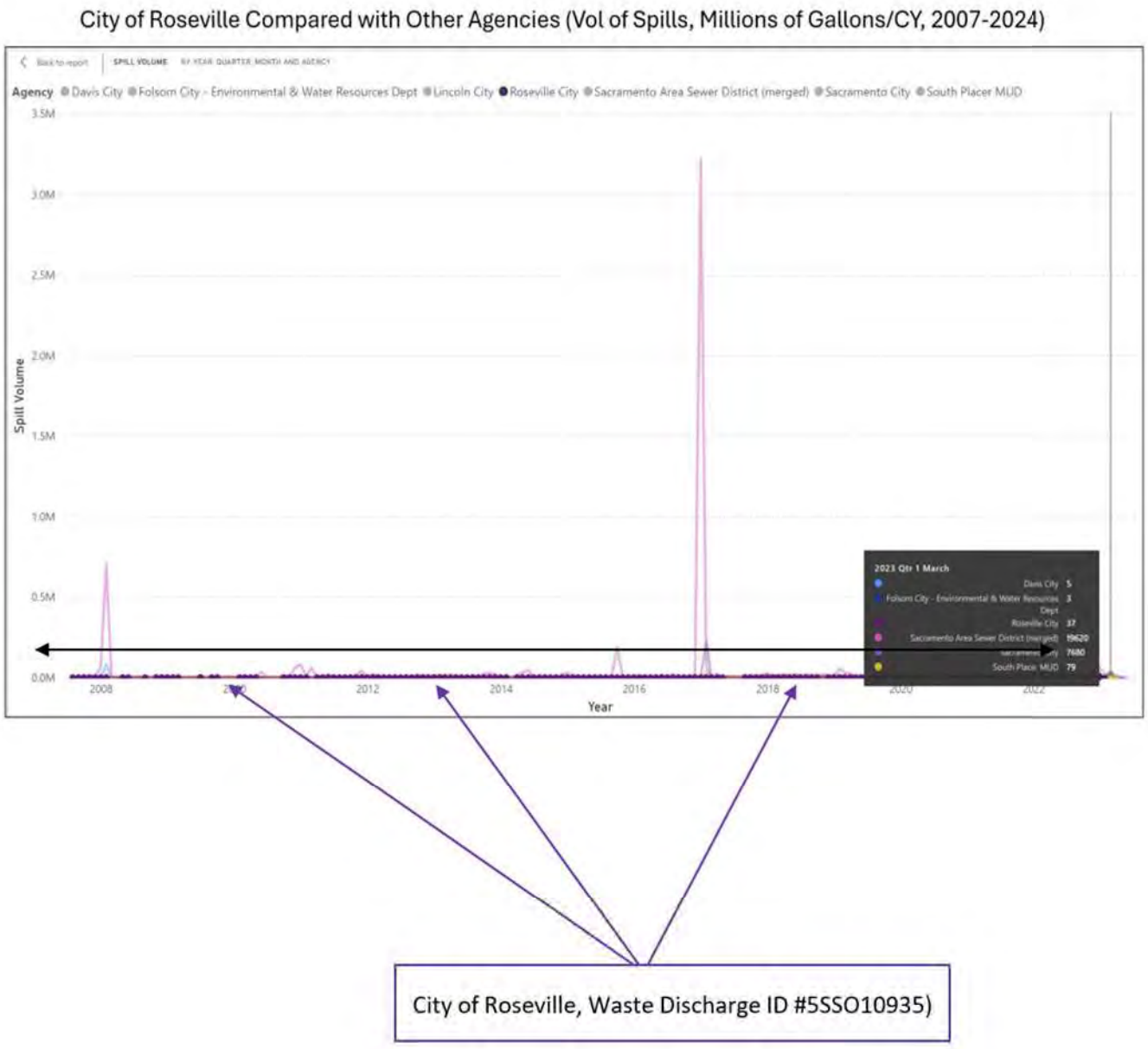


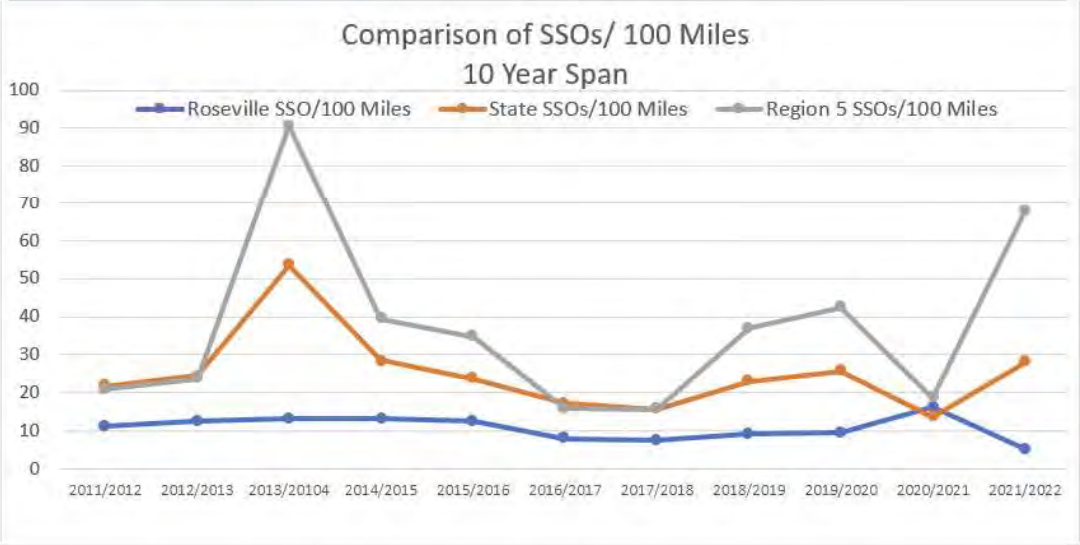
Figure 8: City of Roseville historical spill summary (2011-2022).

Table 9-1 Historical Summary of Sanitary Sewer Overflows

Year	Roseville Total SSOs	Roseville SSOs Rate/100 Miles	State SSOs Rate/100 Miles	Region 5 SSOs Rate/100 Miles	Roseville Total Spill Volume, Gallons	Roseville Net Volume * Spill/1000 Capita	State Net Volume* Spill/1000 Capita	Region 5 Net Volume* Spill/1000 Capita
2011/12	35	11.25	21.46	20.87	948	.03	1.89	4.53
2012/13	42	12.65	24.44	23.71	1105	.05	13.17	16.14
2013/14	47	13.34	53.55	90.77	1136	.37	12.26	12.46
2014/15	42	13.34	28.5	39.42	1205	.60	10.55	18.5
2015/16	39	12.62	23.49	34.8	2525	.28	2.61	25.54
2016/17	23	7.87	17.24	15.83	1081	.65	6.39	.43
2017/18	25	7.52	15.64	15.5	1531	1.11	3.57	1.73
2018/19	31	9.23	23.07	37.05	869	.05	3.67	1.88
2019/20	33	9.55	25.7	42.52	580	.4	2.88	.75
2020/21	50	16.07	13.39	18.7	825	1.97	.64	.64
2021/22	17	5.13	38.06	67.93	1570	.49	.55	.25

*Net Volume = Volume Spilled minus Volume Recovered

Table 9-2, 10 Year SSO Comparison



SSMP Audit Findings

This section provides a high-level summary of the SSMP Audit findings (see Tables 2 and 3 below). No WDR violations were noted during the Audit. However, several Areas of Concern for the WDR were observed and documented in each SSMP element analysis located in PART 2 (Detailed SSMP Audit Findings). A total of 4/11 (36%) of SSMP Attachments were noted as Areas of Concern (64% compliance rate). A total of 3/12 (25%) of SSMP Specifications were noted as Areas of Concern (75% compliance rate).

Table 2: Summary of SSMP Audit Findings (WDR Attachments, 2022-2024)

FINDINGS (ATTACHMENTS)				
Requirements		Violations?	Areas of Concern?	Findings/Recommendations
Att. D-1	Goal & Intro	No	No	✓ Improve evaluating allocation of system resources ✓ Improve prioritization of system repairs
Att. D-2	Organization	No	Yes	✓ Improve LRO and Data Submitter training ✓ Improve internal communication/training procedures
Att. D-3	Legal Authority	No	No	✓ None
Att. D-4	O/M Program	No	Yes	✓ Improve training, procedures, identification of known problem areas ✓ Improve SSMP working knowledge ✓ Improve CIWQS training on requirements. ✓ Improve easement maintenance and emergency response activities
Att. D-5	Design and Performance	No	No	✓ None
Att. D-6	SERP	No	No	✓ Improve training, regional partner collaboration
Att. D-7	Pipe Blockage Control Program	No	Yes	✓ Improve source control measures, schedule
Att. D-8	SECAP	No	Yes	✓ Improve assessments for priority locations ✓ Improve field data collection procedures
Att. D-9	Monitoring, Measurement	No	No	✓ None
Att. D-10	Audits	No	No	✓ Solicit input from field staff for future Audits
Att. D-11	Communications	No	No	✓ None

Table 3: Summary of SSMP Audit Findings (WDR Specifications, 2022-2024)

FINDINGS (SPECIFICATIONS)				
Requirements		Violations?[3]	Areas of Concern?[4]	Findings/Recommendations
Spec. 5.1	Designation of LRO	No	Yes	✓ Improve LRO training/oversight
Spec. 5.2	SSMP Development, Implementation	No	No	✓ None
Spec. 5.3	SSMP Updates	No	No	✓ None
Spec. 5.4	SSMP Audits	No	No	✓ Solicit input from field staff for future Audits
Spec. 5.6	System Resilience	No	Yes	✓ Consider recommendations outlined in each element including evaluation of climate impacts.
Spec. 5.10	Resources	No	No	✓ Improve evaluating allocation of collection system resources
Spec. 5.11	Performance Analysis	No	No	✓ None
Spec. 5.12	SERP	No	Yes	✓ Improve training, regional partner collaboration
Spec. 5.13	Notif, Monitoring, Reporting, Records	No	No	✓ Improve training/field data collection procedures
Spec. 5.14	Notifications (private spills)	No	No	✓ None
Spec. 5.15	Failure to report	No	No	✓ None
Spec. 5.19	Proper O/M	No	No	✓ None

[3] *V (Violation of* REISSUED WDR*)*

[4] *AOC (Area of Concern with* REISSUED WDR*)*

Conclusions

The SSMP Audit completed by Fischer Compliance LLC in collaboration with City management shed light on many existing successful work programs in place. When comparing the City spill data/metrics performance with other collection systems in the Central Valley Regional Water Board area and throughout the State, the City performs near the top.

Detailed Auditing procedures incorporating review of questionnaires, the City's existing 2022 SSMP, interviews and other data were relied on for generating the detailed Audit findings to document the City's SSMP compliance and implementation efforts. Several recommendations along with an implementation plan/schedule were also generated to help the City get a jump start on updating its 2022 SSMP long before its next update is due (5/2/2024).

The Audit further revealed several areas of concern providing an advantage to help prepare the City for future regulatory compliance inspections and improve the effectiveness of its SSMP, well ahead of the required compliance schedule (>5 month ahead of schedule).

The audit results also help the City reflect on additional ways to improve its existing work programs and spill reduction measures. Additional Key performance indicators (KPIs) for improved tracking and monitoring of SSMP effectiveness, improvements to the existing City collection system critical spare part identification/inventories, improved spill data collection, reporting and training are examples of recommendations presented in the Audit.

PART 2 (SSMP Audit Findings/Recommendations)

This section provides detailed information including detailed SSMP Audit findings and recommendations. The procedures employed included evaluating the City's sewer programs against each required SSMP element required in the Reissued WDR. Requirements are presented at the beginning for each element along with an analysis of City compliance and implementation.

Additional information for helping City managers measure SSMP effectiveness and provide resilience are also included for each SSMP element in this section. This information provides a strong foundation to help the City with updating its next SSMP, due by August 2, 2025. Each section ends with a checklist of common potential violations/areas and a checklist of findings including determination of compliance.

Element 1 – Goal And Introduction

1.1 Regulatory Context

"The Plan Introduction section must provide a general description of the local sewer system management program and discuss Plan implementation and updates."

1.2 SSMP Update Schedule

"The Plan Introduction section must include a schedule for the Enrollee to update the Plan, including the schedule for conducting internal audits. The schedule must include milestones for incorporation of activities addressing prevention of sewer spills."

1.3 Sewer System Asset Overview

"The City Sewer System Management Plan must have an Introduction section to provide a description of the City-owned assets and service area including but not limited to.

- Location, including county(ies).
- Service area boundary.
- Population and community served;
- System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons.
- Structures diverting stormwater to the sewer system.
- Data management systems.
- Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals.
- Estimated number or percent of residential, commercial, and industrial service connections.
- Unique service boundary conditions and challenge(s).
- Reference to the Enrollee's up to-date map of its sanitary sewer system, as required in section 4.1 (Updated Map of Sanitary Sewer System) of this Attachment."

FINDINGS (Element 1: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 22+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 22+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • City management identified the need to further improve measuring effectiveness to ensure appropriate allocation of collection system resources. • The City could further improve procedures for prioritization of system repairs and maintenance to prevent spills.
EFFECTIVENESS	Pg. 22+	• The City utilizes an extensive list of customized performance metrics and Key Performance Indicators (KPIs) to track, measure, and adjust effectiveness of work programs (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: - Has the schedule for conducting audits been adhered to? - Has the schedule for updating the Sewer System Management Plan been adhered to? - Are established milestones being monitored? - Is the sewer system management program description up to date? - Have audits been performed on schedule? Measured by review of completion for audits against required timelines. - Has the Sewer System Management Plan been approved by the governing board on schedule (every six years)? Measured by review of historic local board adoption dates against required timelines. - Are established milestones being monitored? - Are the system maps up to date? - Is asset data kept in the computerized maintenance management system, GIS, etc., programs up to date? - Are updates to the maps performed in a timely manner?

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
RESILIENCE	Pg. 22+	• For added resilience, the City could incorporate the following: - Create a work order report for auditing open work orders and assets any repeat spill locations. - Implement a formal schedule to ensure all WDR compliance deadlines are logged into management calendars. Ensure cross-training for data submitters to ensure more than one staff member can collect/manage all required spill data and meet all required deadlines specified in Attachment E1.

FINDINGS (Element 1: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations?	• Potential Areas of Concern?	• City In Compliance?
✓ Failure to identify appropriate goals	• No	• No	• Yes
✓ Failure to update Sewer System Management Plan sub-elements	• No	• No	• Yes
✓ Failure to establish process to ensure public has access/input to Sewer System Management Plan	• No	• No	• Yes
✓ Failure to complete appropriate Sewer System Management Plan audit	• No	• No	• Yes
✓ Failure to measure effectiveness and progress	• No	• No	• Yes
✓ Failure to develop and implement procedures for updating sewer maps	• No	• No	• Yes
✓ Failure to provide appropriate narrative descriptions describing procedures for prioritization of system repairs and maintenance to prevent spills.	• No	• No	• Yes
✓ Failure to describe technologies and practices to reduce spills	• No	• No	• Yes

Element 2 – Organization

REQUIREMENTS[1]

"The Plan must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organizational chart of other similar narrative documentation that includes:

- The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;
- The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;
- Organizational lines of authority.
- Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county health officer, county environmental health City, and State Office of Emergency Services)."

FINDINGS (Element 2: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 24+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 24+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • City management indicated that to some degree, decisions and request for the collection system operations are changed without input from the City LRO and could be further improved. • City management commented that the LRO should have final authority for all projects affecting the collection system including those proposed by developers that have historically been overridden by City Public Works staff without approval of the LRO which could be further improved. • The inspection revealed weaknesses in City internal compliant procedures which could be further improved (see Appendix 1, Table 10, finding AOC A2). However, the City adequately addressed this finding and has improved its internal communications protocols (see Post-Inspection findings, AOC A2). • The inspection identified the potential to further improve LRO and Data Submitter trainings (see Appendix 1, Table 10, finding AOC A3 and AOC B4) which should be pursued. • The inspection identified the potential to further improve coordination between line staff and electricians (see Appendix 1, Table 10, finding AOC A6). However, the City addressed this concern (see Post-Inspection findings, AOC A6).

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
EFFECTIVENESS	Pg. 24+	• The City utilizes an extensive list of customized performance metrics and Key Performance Indicators (KPIs) to track, measure, and adjust effectiveness of work programs (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: - Have there been instances when a service call for a spill was not properly routed to response personnel? - Was all spill response activity documented and forwarded to the LRO? - Have there been any changes in assigned responsibilities for implementing the Sewer System Management Plan? - Is there a process in place to ensure all contact information remains up to date? - Is there a process in place to ensure the organizational chart up to date?
RESILIENCE	Pg. 24+	• For added resilience, the City could incorporate the following: - Ensuring more than one person is capable and responsible for specific duties for Sewer System Management Plan implementation, e.g. back-up personnel. - Designation of more than one LRO to help ensure full and continuous coverage of duties. - Ensuring more than one staff member can implement and be responsible for specific Sewer System Management Plan elements. - Periodically review contact info. to ensure it is up to date.

FINDINGS (Element 2: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations?	• Potential Areas of Concern?	• City In Compliance?
✓ Failure to properly secure Legally Responsible Official with appropriate training and experience.	• No	• No	• Yes
✓ Failure to establish and update all related necessary responsible staff and lines of authority.	• No	• No	• Yes
✓ Failure to establish and update City chain of communication for reporting spills.	• No	• No	• Yes

Element 3 – Legal Authority

REQUIREMENTS[5]

"The City Sewer System Management Plan must include copies or an electronic link to the Enrollee's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority."

- "Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages."
- "Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure."
- "Require that sewer system components and connections be properly designed and constructed."
- "Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee."
- "Enforce violation(s) of ordinances, service agreements, or other legally binding procedures."
- "Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable."

[5] *See Attachment D-3 of* Reissued WDR *(page D-4)*

FINDINGS (Element 3: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 28+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 28+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
EFFECTIVENESS	Pg. 28+	• The City utilizes an extensive list of customized performance metrics and Key Performance Indicators (KPIs) to track, measure, and adjust effectiveness of work programs (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: - Are the District codes and ordinances adequate for fulfilling the Sewer System Management Plan legal requirements? - Have there been instances when the code or ordinance did not address a need or circumstance?
RESILIENCE	Pg. 28+	• For added resilience, the City could incorporate the following: - Monitor performance of ordinances, codes, and agreements for deficiencies and omissions. - Perform periodic review of ordinances, codes, and service agreements. - Stay abreast of industry trends and local ordinances that may affect operations. - Check to ensure codes and ordinances periodically reviewed.

FINDINGS (Element 3: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations?	• Potential Areas of Concern?	• City In Compliance?
✓ Failure to establish proper codes, standards, legal agreements, and procedures to ensure conformance to requirements.	• No	• No	• Yes
✓ Failure to periodically review codes, standards, legal agreements, and procedures to ensure conformance to requirements.	• No	• No	• Yes

Element 4 – Operations and Maintenance Program

4.1 Updated Map of Sewer System

REQUIREMENTS[6]

"The Plan must include the items listed below that are appropriate and applicable to the Enrollee's system.

An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries."

4.2 Preventive Operation and Maintenance Activities

REQUIREMENTS[1]

"A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors.

The scheduling system must include:

- inspection and maintenance activities, Higher-frequency inspections
- Maintenance of known problem areas including areas with tree root problems
- Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.

The data collection system must document the data from system inspection and maintenance activities, including system areas/components prone to root-intrusion potentially resulting in system backup and/or failure."

4.3 Training

REQUIREMENTS

"In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors.

The training must cover the requirements of this General Order; the Enrollee's Spill Emergency Response Plan procedures and practice drills, skilled estimation of spill volume for field operators, and electronic CIWQS reporting procedures for staff submitting data."

[6] *See Attachment D-4.1 of* Reissued WDR *(page D-4)*

4.4 Equipment Inventory

REQUIREMENTS[1]

- "An inventory of sewer system equipment, including the identification of critical replacement and spare parts."

FINDINGS (Element 4: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 32+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 32+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • City management commented that field staff training programs could be further improved with use of spill simulations/scenarios. • The inspection revealed operator training and procedures could be further improved for City pump stations (see Appendix 1, Table 10, , findings AOC A1 and AOC B1). • The inspection revealed the opportunity to further improve the City's existing critical spare parts/inventory (see Appendix 1, Table 10, finding AOC A8 and AOC B3). However, the City addressed this finding and is encouraged to continuously check/update its critical spare parts inventories to ensure spill response readiness (see Post-Inspection Findings, AOC A8). • The inspection revealed the opportunity to further improve the City's existing Hot Spot program for problem locations (see Appendix 1, Table 10, AOC B6). However, the City adequately addressed this finding (see Appendix 1, Post-Inspection Findings, AOC B6). • The inspection revealed the opportunity to further improve the City's existing procedures to identify and address all known problem/deficiencies (see Appendix 1, Table 10, AOC B7) which should be further improved. • The inspection revealed the opportunity to further improve the City's existing training on the SSMP and CIWQWS reporting procedures (see Appendix 1, Table 10, AOC B9) which should be further improved.

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
IMPLEMENTATION	Pg. 32+	• The inspection revealed the opportunity to further improve the City's maintenance activities covering remote areas and open spaces including easements (see Appendix 1, Table 10, AOC D1) which should be further improved). • The inspection revealed the opportunity to further improve the City's spill emergency response training program covering remote areas and open spaces including easements (see Appendix 1, Table 10, AOC D2) which should be further improved). • The inspection revealed the opportunity to further improve the City's existing easement access/maintenance program (see Appendix 1, Table 10, AOC D3). However, the City adequately addressed this concern (see Appendix 1, Post-Inspection Findings, AOC D3).
EFFECTIVENESS	Pg. 32+	• The City utilizes an extensive list of customized performance metrics and Key Performance Indicators (KPIs) to track, measure, and adjust effectiveness of work programs (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: - Were all map updates completed in a timely manner? - Are staff trained for providing map update information? - Are newly installed assets incorporated into maps? - Are the City maintenance, operations, engineering work orders periodically reviewed for completeness? - Does the City monitor "open" or "overdue" work orders? - Are inspection and maintenance activities reducing the number and volume of spills? - Is maintenance work being completed as scheduled? - Are inspections of pipes, manholes, and lift completed? - Does the City have a proactive root control program? - Has all training been completed as scheduled? - Have consistent training records been maintained? - Have staff demonstrated ability/knowledge after trainings? - Have contractors received, at a minimum, direction for 1) reporting spills, containment, securing sites? - Has the inventory list been audited as scheduled? - Have any inventory deficiencies or omissions been discovered? - Has the City experienced failures inhibiting any spill responses?

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
RESILIENCE	Pg. 32+	• For added resilience, the City could incorporate the following: - Develop an SOP for updating maps when errors are discovered. - Develop and use forms (paper or electronic) for data collection to help ensure all pertinent information is consistently collected. - Periodically evaluate inspection cycle intervals to help ensure they are optimized. - Require staff to demonstrate ability and/or knowledge for all training activities. - Monitor equipment and critical spare parts usage for and trends.

FINDINGS (Element 4: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations?	• Potential Areas of Concern?	• City In Compliance?
✓ Failure to establish process to ensure sewer maps are up to date.	• No	• No	• Yes
✓ Failure to establish and review required maintenance program activities (CCTV, inspections, etc.)	• No	• No	• Yes
✓ Failure to establish adequate training program for staff and contractors.	• No	• Yes	• Yes
✓ Failure to establish equipment inventory including identification of critical spare part.	• No	• No	• Yes

Element 5 – Design and Performance Provisions

5.1 Updated Design Criteria and Construction Standards

REQUIREMENTS[7]

"The Plan must include the following items as appropriate and applicable to the Enrollee's system".

- "Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria."

5.2 Procedures and Standards

REQUIREMENTS[1]

- "Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances."

FINDINGS (Element 5: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 45+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 45+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • The inspection revealed the opportunity to further improve design standards (see Appendix 1, Table 10, AOC 10; however, the City addressed this concern (see Post-Inspection Findings, AOC A10).

[7] *See Attachment D-5.1 of* Reissued WDR *(page D-5)*

EFFECTIVENESS	Pg. 45+	• The City utilizes an extensive list of customized performance metrics and KPIs to help assess effectiveness of this element (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: - Does the City implement its current design and construction standards, specifications, and inspection procedures? - Does the City annually review of design and construction standards, specifications, and inspection procedures to ensure conformance to requirements? - Does the City have a review process for its standards and procedures? - Were any design or installation deficiencies found during warranty inspections? - Are hydraulic model findings included in the design process? - Does the City stay abreast of industry design standards?
RESILIENCE	Pg. 45+	• For added resilience, the City could incorporate the following: - Staying abreast of industry trends and standards. - Performing warranty inspections of newly installed or repaired assets to evaluate design and installation practices. - Evaluating as-built changes for trends and areas for design and performance improvements.

FINDINGS (Element 5: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations?	• Areas of Concern?	• City In Compliance?
✓ Failure to establish, implement, and maintain appropriate sewer standards and procedures for inspections, and testing.	• No	• No	• Yes
✓ Failure to enforce instances of noncompliance.	• No	• No	• Yes

Element 6 – Spill Emergency Response Plan

REQUIREMENTS[8]

The Plan must include an up-to-date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to meet all the following.

- *"Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a* spill in a timely manner.
- *Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State.*
- *Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders.*
- *Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained.*
- *Address emergency system operations, traffic control and other necessary response activities.*
- *Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system.*
- *Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State.*
- *Remove sewage from the drainage conveyance system.*
- *Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters.*
- *Implement technologies, practices, equipment, and interCity coordination to expedite spill containment and recovery.*
- *Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event.*
- *Conduct post-spill Guidance of spill response activities.*
- *Document and report spill events as required in this General Order.*
- *Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the* Plan as needed."

[8] *See Attachment D-6 of* Reissued WDR *(page D-6)*

FINDINGS (Element 6: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 50+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 50+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • City management indicated the City does not perform any "pre-planned dills or training with its stormwater. • City management commented during the inspection that field data collection/documentation could be further improved. • The inspection revealed coordination with regional partners could be further improved (see Appendix 1, Table 10, finding AOC A9 and AOC B5) which should be pursued to augment City resources to the extent practical. • The inspection revealed 3 violations for failure to notify Cal-OES within 2 hours required for Category 1 Spills in 2021-2022 (see Appendix 1, Table 10, AOC A11. The City is encouraged to further refine internal notification procedures to help avoid future violations of this requirement. • The inspection revealed the opportunity to further improve contractor emergency response training (see Appendix 1, Table 10, AOC A12) which could be further improved. The inspection also revealed concerns with spill emergency response trainings including post-spill assessments (see Appendix 1, Table 10, AOC B2). However, the City adequate addressed this finding (see Appendix 1, Post-Inspection Findings, AOC B2).

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
EFFECTIVENESS	Pg. 50+	• The City utilizes an extensive list of customized performance metrics and KPIs to help assess effectiveness of this element (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: - Check to ensure the City is implementing all recommendations for spill emergency response plans incorporated in SSMP Guidance Manual (see pages 37-28) - Does the agency implement an effective Spill Emergency Response Plan? Measured by quarterly review, training/practice drills, and completion of field data collection forms for conforming with Attachment E1 requirements. -
RESILIENCE	Pg. 50+	• For added resilience, the City could incorporate the following: – Provide training on a regular basis for all spill response staff. Training should include: – Determining Spill Start Time – Determining spill volume and volume recovered. – Data Collection (forms) – Containment and clean up. – CIWQS Data Submitting – Develop a training plan for contracted services. – Periodically review post-spill assessments for trends and areas for improvement.

FINDINGS (Element 6: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations?	• Areas of Concern?	• City In Compliance?
✓ Failure to develop and implement a Spill Emergency Response Plan that meets all requirements.	• No	• No	• Yes
✓ Failure to test/evaluate emergency procedures during including deploying contracted services where necessary.	• No	• No	• Yes
✓ Failure to ensure supply of adequate critical/identified spare parts/equipment prior to spills.	• No	• No	• Yes
✓ Failure to properly notify appropriate outside agencies/officials.	• No	• No	• Yes

Element 7 – Sewer Pipe Blockage Control Program

REQUIREMENTS[9]

"The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags, and debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed. The procedures must include, at minimum:

- An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances.
- A plan and schedule for the disposal of pipe-blocking substances 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 substances generated within a sanitary sewer system service area.
- The legal authority prohibits discharges to the system and identifies measures to prevent spills and blockages.
- Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping, and reporting requirements.
- Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance.
- An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and
- Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above."

[9] *See Attachment D-7 of* Reissued WDR *(page D-7)*

FINDINGS (Element 7: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 76+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 76+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • City management indicated the City could further improve an implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances. • City Management commented during the inspection that the City will soon need additional resources inspecting grease producing facilities. • The inspection revealed the opportunity to further improve the City's FOG program implementation (see Appendix 1, Table 10, finding AOC A7 and AOC B8). The City is encouraged to pursue additional FOG program improvements to continue improving existing source control measures.
EFFECTIVENESS	Pg. 76+	• The City utilizes an extensive list of customized performance metrics and KPIs to help assess effectiveness of this element (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: – Have there been any blockages/spills from any identified problem area? – Is the agency receiving feedback on public outreach efforts? – Is the debris and other sewage solids collected during cleaning activities being disposed of appropriately? – Does the agency have a plan and schedule for inspection of grease producing facilities? Was the schedule adhered to? – Have there been spills due to excessive fats, oil, or grease in the system? – Are Source Control staff included in the plan check process?

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
RESILIENCE	Pg. 76+	• For added resilience, the City could incorporate the following: – Inspect assets directly downstream of grease producing businesses to- ensure source control is effective. – Develop outreach doorhangers or flyers to perform targeted outreach when discoveries are made in the field. – Perform regular assessments of system assets to monitor performance. – Establish a QA/QA process for evaluating pipe cleaning effectiveness.

FINDINGS (Element 7: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations?	• Areas of Concern?	• City In Compliance?
✓ Failure to identify appropriate needs for pipe blockage program.	• No	• No	• Yes
✓ Failure to ensure adequate pipe blockage control enforcement authority.	• No	• No	• Yes
✓ Failure to enforce requirements for instances of noncompliance.	• No	• No	• Yes

Element 8 – System Evaluation, Capacity Assurance, Capital Improvements

REQUIREMENTS

"The Plan must include procedures and activities for

- Routine evaluation and Guidance of system conditions,
- Capacity Guidance and design criteria.
- Prioritization of corrective actions.
- Capital improvement plan."

8.1. System Evaluation and Condition Guidance

REQUIREMENTS[10]

"The Plan must include procedures to:

- Evaluate the sanitary sewer system assets utilizing the best practices and technologies available.
- Identify and justify the amount (percentage) of its system for its condition to be assessed each year.
- Prioritize the condition Guidance of system areas that:
  - Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies.
  - Are in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas.
  - Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List.
- Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods.
- Utilize observations/Audit Findings/Recommendations of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State.
- Maintain documents and recordkeeping of system evaluation and condition Guidance inspections and activities,
- Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions."

[10] *See Attachment D-8.1 of* Reissued WDR *(pages D-7 and D-8)*

FINDINGS (Element 8: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 82+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • The City has identified at least 2 locations where insufficient capacity exists which is being addressed in its current capital improvement plan (CIP). • City Management commented during the inspection that it could further improve its identification/ justification of its condition assessment to be inspected each year throughout the system. • City Management commented during the inspection that the City currently does not prioritize condition assessments for areas holding high environmental consequences, are located within the vicinity of surface waters, steep terrain, high groundwater, etc., and are within the vicinity of bacterial-related impairments, including documenting situations where sewage could be reasonability expected to exit the system (exfiltration) as part of its condition assessment program. • City Management commented during the inspection that the City does not currently assess climate change impacts other than power interruptions/potential impacts from wildfires on field staff. Management also commented that the City currently does not have procedures to identify system components that are experiencing or causing spills during dry peak flow conditions. However, management has been proactive in shoring up creek banks, securing sewer crossings to piles and ensuring infrastructure is intact after severe rain events or flooding.

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
IMPLEMENTATION	Pg. 82+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • City Management commented during inspection that it is sometimes hard to find data from condition assessments, inspections, audits, ETC. which should be improved. • Management commented during the inspection that it has not identified areas vulnerable to increases in erosive forces which should be further improved. • The inspection revealed potential improvements between City Engineering and Collections/Operations Departments (see Appendix 1, Table 10, finding AOC A4) which should be further improved. • The inspection revealed potential improvements for improving condition assessments for City force main sewers (see Appendix 1, Table 10, finding AOC A5) which should be further improved.
EFFECTIVENESS	Pg. 82+	• The City utilizes an extensive list of customized performance metrics and KPIs to help assess effectiveness of this element (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: – Number of capacity-related spills or surcharge condition during the audit period? – Has the system responded to rain events as indicated by the hydraulic model? – Has there been any changes to zoning designations (residential, commercial, industrial)? – Rain event trends: Has there been changes in rain event occurrences, intensity, and duration? – Has the agency's capital improvement plan been adhered to? – Is there an annual review of the Capital Improvement Plan by all necessary individuals? – Has the City adhered to its system evaluation/condition assessment efforts? Measured by annual review and update of system inspections/evaluations procedures. – Has the City adhered to its prioritization/corrective actions for sewer repair and capacity improvement projects? Measured by annual review and agency prioritization/corrective actions procedures.

FINDINGS (Element 8: Common WDR Violations/Areas of Concern Evaluation Evaluation)

• Potential Violations	• Potential Violations?	• Areas of Concern?	• City In Compliance?
✓ Failure to develop and implement system evaluation, capacity assurance, and capital improvement programs.	• No	• No	• Yes
✓ Failure to identify sections holding high degree of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies.	• No	• No	• Yes
✓ Failure to identify sections located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas.	• No	• No	• Yes
✓ Failure to identify assets within the vicinity of receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List.	• No	• No	• Yes
✓ Failure to develop and implement capital improvement plan (CIP) for necessary sewer system repairs and improvements (short term and long-term).	• No	• No	• Yes

Element 9 – Monitoring, Measurement, Program Modifications

REQUIREMENTS[11]

"The Plan must include an Adaptive Management section that addresses Plan-implementation effectiveness and the steps for necessary Plan improvement, including:

- Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities.
- Monitoring the implementation and measuring the effectiveness of each Plan Element.
- Assessing the success of the preventive operation and maintenance activities.
- Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and
- Identifying and illustrating spill trends, including spill frequency, locations, and estimated volumes."

FINDINGS (Element 9: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 86+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 86+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
EFFECTIVENESS	Pg. 86+	• The City utilizes an extensive list of customized performance metrics and KPIs to help assess effectiveness of this element (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: – Are trends being monitored and corrective action taken as necessary? – Have Key Performance Indicators been developed to measure the effectiveness of each Sewer System Management Plan element? – Has a plan and schedule been established to address audit findings/deficiencies? – Have changes been made to work programs and procedures because of monitoring efforts?

[11] *See Attachment D-9 of* Reissued WDR *(page D-9)*

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
RESILIENCE	Pg. 86+	• For added resilience, the City could incorporate the following: – Develop key performance indicators to measure effectiveness of the Sewer System Management Plan. – Perform periodic reviews of the Sewer System Management Plan to help ensure the plan is being properly implemented. – Develop and adhere to a timeline to correct deficiencies found during the audit process. – Periodically evaluate work programs to help ensure effectiveness.

FINDINGS (Element 9: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations	• Areas of Concern	• City in Compliance?
✓ Failure to collect/maintain and evaluate relevant data for monitoring, measuring, and assessing preventive maintenance program effectiveness.	• No	• No	• Yes
✓ Failure to update/modify agency Sewer System Management Plan based on results from audits and evaluation of data required for this element.	• No	• No	• Yes

Element 10 – Internal Audits

REQUIREMENTS[12]

"The Plan shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of this General Order."

- Specifications 5.4 (Sewer System Management Plan Audits")

"The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit must be conducted for the period after the end of the Enrollee's last required audit period. Within six months after the end of the required 3-year audit period, the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 (Sewer System Management Plan Audit Reporting Requirements) of Attachment E1 of this General Order. Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff. The internal audit shall be appropriately scaled to the size of the system(s) and the number of spills. The Enrollee's sewer system operators must be involved in completing the audit. At minimum, the audit must:

- Evaluate the implementation and effectiveness of the Enrollee's Sewer System Management Plan in preventing spills.
- Evaluate the Enrollee's compliance with this General Order.
- Identify Sewer System Management Plan deficiencies in addressing ongoing spills and discharges to waters of the State; and
- Identify necessary modifications to the Sewer System Management Plan to correct deficiencies.
- The Enrollee shall submit a complete audit report that includes:
    - Audit findings and recommended corrective actions.
    - A statement that sewer system operators' input on the audit findings has been considered; and
    - A proposed schedule for the Enrollee to address the identified deficiencies."

[12] *See Attachment D-10 of* Reissued WDR *(page D-10)*

FINDINGS (Element 10: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 92+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025. • The City complies with this requirement by completing SSMP internal audits every 2 years since 2010 as required. • The City informed the consulting team that input from collection system field staff have not traditionally been incorporated into the City SSMP (only input from City Collection System Supervisors at the management level).
IMPLEMENTATION	Pg. 92+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
EFFECTIVENESS	Pg. 92+	• The City utilizes an extensive list of customized performance metrics and KPIs to help assess effectiveness of this element (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: – Have audits been performed as required? – Have the audits assessed compliance, implementation, and effectiveness? – Have deficiencies been identified? – Has a plan and schedule to rectify the deficiencies been established?
RESILIENCE	Pg. 92+	• For added resilience, the City could incorporate the following: – Periodically evaluate key performance indicators to assess effectiveness of each Sewer System Management Plan element. – Evaluate previous audit to ensure deficiencies have been rectified. – Calendar the audit due dates and complete the audit on time. – Prepare for announced/unannounced compliance inspections by regulators and by proactive with preparing required Audits by completing the State Water Board Pre-Inspection Questionnaire (see Appendix 6).

FINDINGS (Element 10: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations	• Areas of Concern	• City in Compliance?
✓ Failure to conduct routine Sewer System Management Plan audits.	• No	• No	• Yes
✓ Failure to measure Sewer System Management Plan element effectiveness (a simple checklist will not fulfill this obligation).	• No	• No	• Yes
✓ Failure to implement identified deficiencies/recommendations and commit to new enhancements via a plan/schedule (short and long-term).	• No	• No	• Yes

Element 11 – Communication Program

REQUIREMENTS[13]

"The Plan must include procedures for the Enrollee to communicate with:

- The public for spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and the development, implementation, update of its Plan, including opportunities for public input to Plan implementation and updates.
- Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for system operation, maintenance, and capital improvement-related activities."

FINDINGS (Element 11: Analysis)

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
COMPLIANCE	Pg. 95+	• The City SSMP complies with the basic requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
IMPLEMENTATION	Pg. 95+	• The City is implementing these requirements. The City should complete a gap analysis and incorporate all SSMP Audit findings into its next SSMP Update due by May 2, 2025.
EFFECTIVENESS	Pg. 95+	• The City utilizes an extensive list of customized performance metrics and KPIs to help assess effectiveness of this element (see Appendix 2). • The City should consider the following additional effectiveness checks for this element: – Does the agency place all Sewer System Management Plan action items on the agenda for regular counsel/board meetings? – Does the agency have signage, or other means, readily available to notify the public of environmental or public risk factors related to a sewage spill? – Does the agency regularly communicate with other systems connected to the system? – Was the public afforded the opportunity to provide input as the program was being implemented? – Does the agency perform outreach to residential customers?
Areas Assessed	SSMP Ref.	Audit Findings/Recommendations

[13] *See Attachment D-11 of* Reissued WDR *(page D-10)*

Areas Assessed	SSMP Ref.	Audit Findings/Recommendations
RESILIENCE	Pg. 95+	– Use the Sewer System Management Plan as a tool to communicate to the public how the agency is managing the system. – Maintain a consistent presence in the service area by attending community events or issuing periodic newsletters or other communications to the public. – Make it clear and easy for the public to contact the agency. •

FINDINGS (Element 11: Common WDR Violations/Areas of Concern Evaluation)

• Potential Violations	• Potential Violations	• Areas of Concern
✓ Failure to develop and implement a public communication program, especially during emergencies.	• No	• No
✓ Failure to solicit input on Sewer System Management Plan content.	• No	• No
✓ Failure to communicate with owners/operators of sewer system(s) connected to the agency's sewer system.	• No	• No

LIST OF APPENDICIES

- APPENDIX 1 – Compliance Evaluation Inspection (CEI) Report
- APPENDIX 2 – City Performance Metrics and Key Performance Indicators (KPIs)
- APPENDIX 3 – City Spill Performance Benchmark Report
- APPENDIX 4 – City SSMP Audit Implementation Plan and Schedule (2024-2025)

COMPLIANCE EVALUATION INSPECTION REPORT

Prepared by:

FISCHER COMPLIANCE LLC
PRACTICES THAT COMPLY

Sanitary Sewer
Collection System
WDID=5SSO10935

Table of Contents

1. Introduction 3
2. Inspection Summary 4
3. Inspection Procedures 4
4. Inspection Tasks 5
5. TASK A (Pre-Inspection Conf – Superintendent) 6
6. TASK B (Pre-Inspection Conf – Supervisors) 7
7. TASK C (Field Inspection #1/2 – Brady Pump Station) 9
8. TASK D (Field Inspection #2/2 – 8800 Sierra College Blvd) 12
9. Findings and Recommendations 16
10. Post-Inspection Findings 19

List of Tables

Table 1 – Inspection Summary 4
Table 2 – Summary of inspection Tasks during Inspection 5
Table 3 – TASK A (Best practices identified during inspection) 6
Table 4 – TASK A (Areas of Concern) 7
Table 5 – Task B (Areas of Concern identified during inspection) 8
Table 6 – Task C (Areas of Concern identified during inspection) 12
Table 7 – Task D (Areas of Concern identified during inspection) 15
Table 10 – Findings and Recommendations 16

1. Introduction

On January 30 ,2024, James Fischer and Chris Bracco (Fischer Compliance LLC) conducted a Compliance Evaluation Inspection (CEI) for the City of Roseville (City) to evaluate compliance with the Statewide Sanitary Sewer Systems General Order (Order No. 2022-0103-DWQ), hereafter "Reissued WDR[1].

FACILTY INSPECTED:	INSPECTED BY: James Fischer, P.E. NPDES Compliance Inspector[2] Principal, FISCHER COMPLIANCE, LLC James Fischer Date: 1/30/2024	
SANITARY SEWER COLLECTION SYSTEM (WASTEWATER)	Waste Discharge ID (WDID): 5SSO10935 ("Dry Creek CS")	
Water Quality Order(s)	2022-0103-DWQ (Reissued WDR)	
Regional Water Boards	5S	
County	Sacramento	
Population/Area	151,901 (2023 Questionnaire)	
Miles of Sewers (gravity)	589.55 (2023 Questionnaire)	
Miles of Sewers (force mains)	7.55 (2023 Questionnaire)	
Sewer Connections (#)	53,720 (2023 Questionnaire)	
Lift/Pump Stations (#)	17 (2023 Questionnaire)	
Above pipelines (#)	22 (2023 Questionnaire)	
Air release valves (force mains, #)	3 (2023 Questionnaire)	
Sewer siphons (#)	22 (2023 Questionnaire)	
Flows (dry/wet, million gallons per day)	17.5/43 (2023 Questionnaire)	
CWEA Maintenance Certifications (#)	32 (2023 Questionnaire)	
Sewer lower later responsibility (Y/N)	Y (2023 Questionnaire)	
Final wastewater disposal	Dry Creek and Pleasant Grove WWTPs	
FACILITY REPRESENTATIVE	TITLE	CONTACT
Dan Pruden	Superintendent	(916) 746-1891
Shane Rodgers	Supervisor	(916) 746-1894
Cody Wilbanks	Supervisor	(916) 746-1889

[1] See https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2022/wqo_2022-0103-dwq.pdf
[2] Credentialed, U.S EPA summary(2017)

2. Inspection Summary

The inspection incorporated both pre-inspection meetings for comprehensively assessing the City's SSMP compliance, implementation, and effectiveness with the Reissued WDR (see Tables 1-2 below). This information provides a key advantage for helping City managers proactively reflect on ways for further improving its and implementing necessary adjustments to existing programs for preparing for its required SSMP Audit due by November 2024.

A summary of the overall inspection areas assessed and scores for the City are provided in Table 1 below.

Table 1 – Inspection Summary

Item	Tasks	Areas Assessed	WDR Reqs.	Compliance (0-5)	Implementation (0-5)	City Points	City Score
A	**Pre-Inspection** (Superintendent) 1800 Booth Rd	Field staff training program/competency, maintenance program, SCADA monitoring/improvements, SERP implementation, capital improvement program (CIP) collaboration between engineering and collections operations, lift station operator inspection logging/data and alarms, FOG enforcement, critical spare parts, mutual assistance practices, design/construction standards, customer complaint system/tracking, Key Performance Indicators (KPIs), root controls, staff certifications, new enhancements necessary for complying with Reissued WDR	Order 2022-0103-DWQ (Spec. 5.19, Att. D-4)	4	4	8	80%
B	**Pre-Inspection** (Supervisors) 1800 Booth Rd	Field staff training program/competency, pump station training, identification/tracking of critical spare parts, SERP training and implementation, post-spill assessments, Supervisor SSMP familiarity/training/inter-coordination, SSMP responsibilities, outside agency coordination, condition assessment process and data, FOG enforcement, new enhancements necessary for complying with Reissued WDR	Order 222-0103-DWQ (Spec. 5.19, Att. D-4)	4	3	7	70%
C	**Field Inspection** (Operator Interviews) Brady Pump Station 8190 Brady Ln	Operator interviews (reviewed spill City emergency response readiness and procedures, operator training/competency, O/M activities, alarms, standard operating procedures (SOPs), and logbook; reviewed asset conditions)	Order 222-0103-DWQ (Spec. 5.19, Att. D-4)	4	3	7	70%
D	**Field Inspection** (Operator Interviews) 8800 Sierra College Blvd	Operator interviews (reviewed spill City emergency response procedures; reviewed spill response/mitigation details and future planned activities for further minimizing future spills	Order 222-0103-DWQ (Spec. 5.19, Att. D-4)	4	4	8	80%
						Avg. Compliance Score	75%

3. Inspection Procedures

The inspection incorporated the following procedures:

1. Desktop Review (review of City SSMP, previous regional board enforcement, benchmarks)
2. Pre-Inspection Meetings
3. Data Review (City answers to completed SWRCB/FCL Questionnaires, spill reports, work programs, other info.)
4. Compliance Evaluation Inspection
5. Post-Inspection Review

4. Inspection Tasks

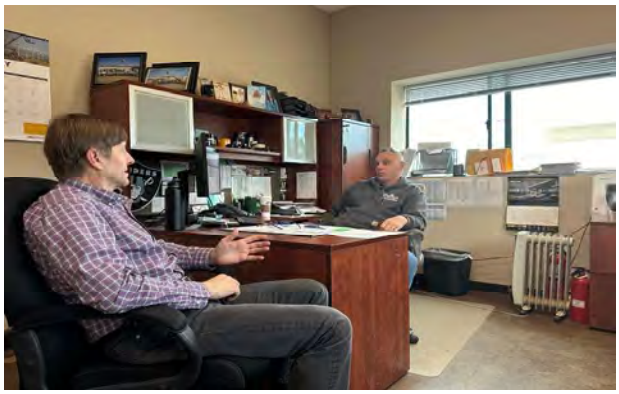
The inspection incorporated several key tasks for evaluating the City's SSMP compliance, implementation, and effectiveness with the Reissued WDR (see Table 2 below).

Table 2 – Summary of inspection Tasks during Inspection

Task	Description	Areas Assessed	WDR Citations
A	**Pre-Inspection Conf.** (Collection System Superintendent) 1800 Booth Rd	• Field staff training program/competency, maintenance program, SCADA monitoring/improvements, SERP implementation, capital improvement program (CIP) collaboration between engineering and collections operations, lift station operator inspection logging/data and alarms, FOG enforcement, critical spare parts, mutual assistance practices, design/construction standards, customer complaint system/tracking, Key Performance Indicators (KPIs), root controls, staff certifications, new enhancements necessary for complying with Reissued WDR	• Spec. 5.19 • Att. D-4 • Att. D-6 • Att. D-8 • Att. E1 • Att. D-11 • Att. D-5 • Att. D-2 • Att. D-8 • Att. D-9
B	**Pre-Inspection Conf.** (Collection System Supervisors) 1800 Booth Rd	• Field staff training program/competency, pump station training, identification/tracking of critical spare parts, SERP training and implementation, post-spill assessments, Supervisor SSMP familiarity/training/inter-coordination, SSMP responsibilities, outside agency coordination, condition assessment process and data, FOG enforcement, new enhancements necessary for complying with Reissued WDR	• Spec. 5.19 • Att. D-4 • Att. D-6 • Att. D-2 • Att. D-11 • Att. D-8 • Att. D-7
C	**Field Inspection #1/2** (Operator Interviews) Brady Pump Station 8190 Brady Ln	• Operator interviews (reviewed spill City emergency response readiness and procedures, operator training/competency, O/M activities, alarms, standard operating procedures (SOPs), and logbook; reviewed asset conditions)	• Spec. 5.19 • Att. D-4
D	**Field Inspection #2/2** (Operator Interviews) 8800 Sierra College Blvd	• Operator interviews (reviewed spill City emergency response procedures; reviewed spill response/mitigation records, details and discussed future planned activities to minimizing any future spills at location	• Spec. 5.19 • Att. D-4 • Att. D-6 • Att. E1

5. TASK A (Pre-Inspection Conf – Superintendent)

This task included a detailed interview with the City's Collection System Superintendent, Mr. Dan Prudent who was very knowledgeable and instrumental in providing clear answers to all questions asked during the inspection. Mr. Pruden also provided a comprehensive set of documents requested previous Pre-Inspection conferences for supplementing data necessary for completing the SSMP Audit package.



TASK A (Photo A1): Pre-inspection conference with Superintendent (Mr. Dan Pruden).

A list of Best Practices (BPs) identified during the interview with the Superintendent is presented in Table 3 below.

Table 3 – TASK A (Best practices identified during inspection)

TASK B	Best Practices (BPs)	WDR Citations
Pre-Inspection (Collection System Supervisors)	• BP A1: Tenured Superintendent and Supervisors with >50 years of combined experience	• Spec. 5.7 • Spec. 5.1
	• BP A2: High quality SSMP, Audits, SERP, spill reports, maintenance equipment	• Spec. 5.2 • Spec 5.12 • Att. E1
	• BP A3: Extensive routine cleaning/inspection programs in place with demonstrated successful outcomes	• Att. D-4
	• BP A4: Extensive pump station/backup power, and spill readiness efforts securely in place	• Spec. 5.19 • Att. D

The following Areas of Concern (AOC) were identified for Task A during the inspection (see Table 6 below).

Table 4 – TASK A (Areas of Concern)

Task A	Areas of Concern (AOC)	WDR Citations
Pre-Inspection Conf. (Collection System Superintendent)	• AOC A1: Field staff training/SERP competency with pump stations	• Spec. 5.19 • Att. D-4
	• AOC A2: Communication and coordination between City dispatch operators and Collections management for ensuring all complaints are promptly assessed and addressed	• Att. D-2 • Att. E1
	• AOC A3: Legally Responsible Official (LRO) training/Data Submitter training	• Spec. 5.1
	• AOC A4: Coordination (engineering/operations)	• Att. D-8
	• AOC A5: Force mains (condition assessments/monitoring)	• Att. D-8
	• AOC A6: Pump station coordination (electricians/line staff)	• Att. D-2
	• AOC A7: FOG program (implementation/enforcement)	• Att. D-7
	• AOC A8: Maintenance of critical spare parts, inventory	• Att. D-4
	• AOC A9: Improvements (regional partners, coordination)	• Att. D-6
	• AOC A10: Improvements (design, construction standards)	• Att. D-5
	• AOC A11: Improvements (Cal-OES notifications, Cat. 1 spills)	• Att E1
	• AOC A12: Improvements (SERP training for staff, contractors)	• Att. D-6

6. TASK B (Pre-Inspection Conf – Supervisors)

This task included interviews with both collection system Supervisors for further assessing the City's SSMP compliance, implementation, and effectiveness against several key Reissued WDR requirements. This included reviewing training program, O/M programs, staffing, and other information. Mr. Rodgers and Mr. Wilbanks were very knowledgeable and provided clear answers to the majority of the questions asked during the inspection.

The Supervisors were asked questions jointly about things going well, best practices in place, and recommendations for what could further be improved. They both agreed with Mr. Pruden regarding the need to further improve the City's existing training program and are concerned about having many inexperienced staff with less than 5 years of actual practical collection system maintenance experience. The Supervisors had some uncertainty with a number of the answers to questions about the City's SSMP documentation, implementation practices of key SSMP elements, and explanation of existing work programs which could be further improved. A list of Areas of Concern (AOC) identified for Task B during the inspection are presented in Table 5 below.

Location B (Photo B1): Pre-inspection conference with Supervisors (Mr. Shane Rodgers and Mr. Cody Wilbanks).

A list of Areas of Concern (AOC) identified for Task B during the inspection are presented in Table 5 below.

Table 5 – Task B (Areas of Concern identified during inspection)

TASK B	Areas of Concern (AOC)	WDR Citations
Pre-Inspection (Collection System Supervisors)	• AOC B1: Inexperienced line staff/SSMP training/competency; pump station training	• Spec. 5.19 • Att. D-4
	• AOC B2: SERP implementation/trainings/post-spill assessments	• Att. D-6
	• AOC B3: Improvements to critical spare parts/inventory/controls	• Att. D-4
	• AOC B4: Supplemental Data Submitter CIWQS training	• Att. E1
	• AOC B5: Improvements (regional partners/ coordination)	• Att. D-6
	• AOC B6: Improvements (reducing “hot spots”)	• Att. D-4
	• AOC B7: Improvements (procedures for addressing system deficiencies)	• Att D-8
	• AOC B8: Improvements (FOG implementation/enforcement)	• Att. D-7
	• AOC B9: Training/familiarity with Reissued WDR requirements, the City’s SSMP, and CIWQS reporting procedures	• Spec. 5.19 • Att. D-4

7. TASK C (Field Inspection #1/2 – Brady Pump Station)

This task included interviewing collection system line staff to assess adequacy of the City's existing program for training line staff for operations of the City's pump stations to comply with Attachment D-6, Spill Emergency Response Plan, and Attachment D-4.3, Training (see photos C1-C6 below). This included interviews with field operations staff at the Brady station. Detailed questions about the station's equipment, inspection/maintenance procedures, emergency troubleshooting procedures, and logbook were asked. Although operators were very experienced and knowledgeable, no specific references to standard procedures were cited and many answers asked during the assessment were either incomplete or inconsistent.

Alarms/Emergency Troubleshooting: To assess emergency response and troubleshooting, operators were asked questions about the station's equipment, operations, and troubleshooting procedures for responding to alarm calls or possible emergencies at the station. No references to SSMP/standard procedures for pump stations were cited by operators.

Logbook: Inspection of the station logbook revealed only very basic entries being logged by operators without detailed information for maintenance activities or resolution of any problems encountered. Operators stated that pumps are serviced on 90-day intervals. However, inspection of the logbook entries revealed the last pump servicing was completed in July 2023.

Alarm Simulation: A high float alarm check was completed. No references to SSMP/standard procedures for pump stations for handling alarms were cited by operators (procedures for pulling float, checking motor control center (MCC) panel, calling wastewater treatment plant to inform them of the test, logging the test in logbook and into CMMS, etc.).

Allowable Downtime: The City completed comprehensive downtime calculations without power for all of its pump stations including the Brady station. The maximum allowable holding time specified for the Brady station is 11 hours (see Photo C3).

Bypassing: The inspection revealed the Brady station does not have a force main bypass valve installed and traditional bypassing would prove difficult due to challenges accessing the force main which flows under the adjacent creek immediately south/southwest of the station. No references to SSMP/standard procedures for pump stations for bypassing were cited by operators.

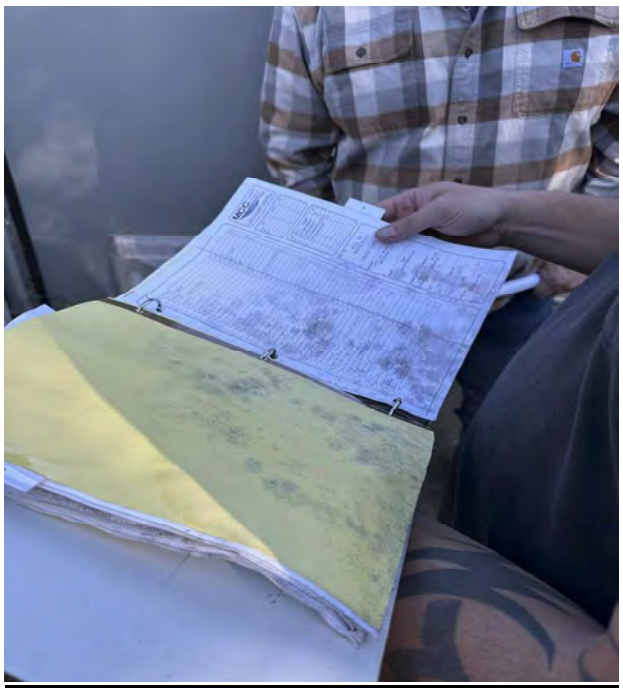
Spill Appearance Point: Operations staff were unable to quickly reference the lowest upstream spill appearance point for the station.

Task C (Photo C1): Inspection of Brady Pump Station; emergency notification signage mounted on the station fence including City contact information.

Task C (Photo C2): Interviews with City field operations staff at station.

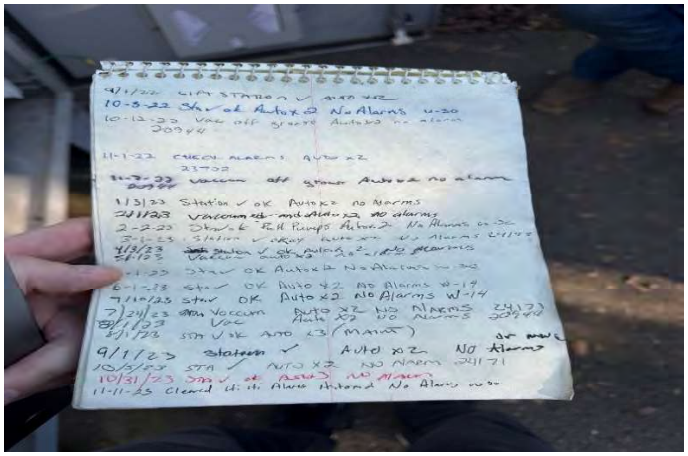
Task C (Photo C3): Inspection of station motor control center (MCC) panel and controls.

Task C (Photo C4): Inspection of station Wetwell.

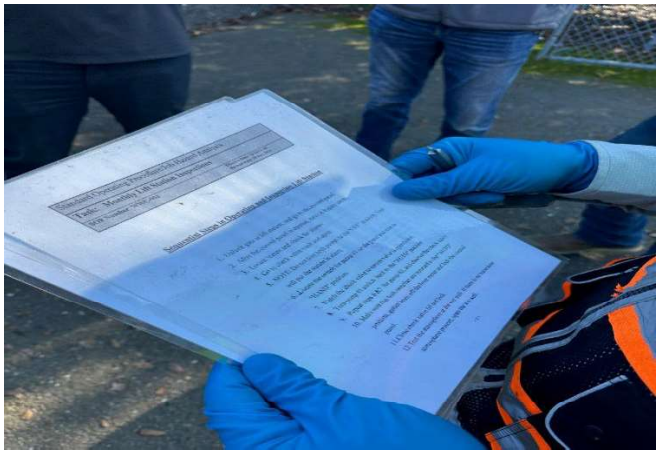


Task C (Photo C5): Inspection of station MCC panel; the City has written critical information for all of its pump stations including the Brady station for reference during routine/emergency operations; written specifications include "allowable downtime without power=11 hours, "overflow point= Wetwell", decant manhole (MH C03-216 located at 1311 Brady Lane; "high alarm" set point=96", "lag start" set point=70", "lead start set point=59", "lead/lag" stop point=27", "low alarm" set point=12", and "low float" set point at 4").

Task C (Photo C6): Inspection of 2008 original construction documentation stored in the MCC inside panel at station.



Task C (Photo C7): Inspection of station logbook; only basic entries are logged by operators.



Task C (Photo C8): Inspection of "Standard Operating Procedure/Job Hazard Analysis" form stored in the MCC inside panel; operations staff were unaware of the form; station operators were also initially unsure of lowest upstream spill appearance point for station.

A list of Areas of Concern (AOC) identified for Task C during the inspection are presented in Table 6 below.

Table 6 – Task C (Areas of Concern identified during inspection)

TASK C	Areas of Concern (AOC)	WDR Citations
Field Inspection #1/2 (Operator Interviews) Brady Pump Station 8190 Brady Ln	• AOC C1: Insufficient answers to questions related to Standard Operating Procedures (SOP) for pump stations	• Spec. 5.19 • Att. D-4
	• AOC C2: Insufficient answers to inspection questions related to Spill Emergency Response Plan (SERP) implementation procedures, station equipment, and alarm response/procedures	• Spec 5.12 • Att. D-6

8. TASK D (Field Inspection #2/2 – 8800 Sierra College Blvd)

This task included assessing the City's response to addressing a spill originating from an odor complaint submitted to the City for this location (see Spill CIWQS Spill ID #891462 (Attachment X) and photos D1-D8 below). This call originated from a public odor complaint submitted to the City for field assessment and response. The problem was ultimately discovered to be caused by tree root problems within the City's mainline sewer in this location.

Spill Summary Narrative (from Spill Technical Report submitted in CIWQS): "*On Monday, December 4, 2023, the City Wastewater Collection Division received an odor complaint from a resident at 8800 Sierra College Blvd (Slate Creek Apartment Complex). The resident indicated that despite reporting a sulfur-like odor to the property manager, the resident hadn't seen any action being taken. During the investigation of the odor complaint, the City Wastewater Collection Service Worker followed City standard operating procedures (SOPs) and discovered a sewer manhole (Asset SMH B08-032) located on a 8 inch City sewer main line discharging into a wetlands area located behind the apartment complex. The next downstream manhole (Asset ID) was discovered by the Service Worker to be fully obstructed by tree roots which the City determined after a lengthy investigation the cause of the sewer spill. Upon discovering the spill, the Service worker promptly notified a supervisor, and wastewater crews promptly implemented the City's Sewer System Management Plan (SSMP) procedures outlined in the Spill Emergency Response Plan (SERP) for containment, control and mitigation of the spill. Due to its entry into the wetlands area which flows into Strap Ravine, the spill was treated as a Category 1. Prompt notification was made to Cal-OES and a control number issued. Following containment of the spill and initiating cleanup, it became apparent that the volume of the spill exceeded 50,000 gallons, which required the need for Water Quality Monitoring and submission of a Technical Report within 45 days as required by Attachment E1 of the Reissued WDR. The City followed all required procedures outlined in its SERP for effective spill investigation, response, and cleanup, including extensive deployment of City staff and resources including Hydro-Vac units, excavators, trash pumps, and washdown water to mitigate the effects of the spill.*"

Task D (Photo D1): Inspection of former spill site (looking south/southwest); City improved former access and fully restored area immediately following the spill

Task D (Photo D2): Inspection of former spill site (looking west)

Task D (Photo D3): Inspection of manhole structure at spill appearance point (manhole asset ID #B08-028; the failure location was at manhole asset ID #B08-032.

Task D (Photo D4): Inspection of manhole structure; no significant solids or debris observed in the channel, barrel, or the bench area.

Task D (Photo D5): Inspection of Strap Creek (looking south/southeast); no evidence of spill/impacts observed

Task D (Photo D6): Inspection of Strap Creek (looking west/northwest); no evidence of spill/impacts observed

Task D (Photo D7): Close view of Strap Creek; no evidence of spill impacts observed

Task D (Photo D8): Inspection of stormwater best management practices (silt fence) installed for mitigating impacts to creek during spill cleanup/restoration; no evidence of spill/impacts observed

The following Areas of Concern (AOC) were identified for Task D of the inspection (see Table 7 below).

Table 7 – Task D (Areas of Concern identified during inspection)

TASK D	Areas of Concern (AOC)	Related WDR Citations
Field Inspection #2/2 (Operator Interviews) 8800 Sierra College Blvd	• AOC D1: Risks/threats for future spills at this location	• Prohibitions
	• AOC D2: SERP training/drills at this location	• Att. D-6
	• AOC D3: Lack of easement area access and maintenance	• Att. D-3 • Spec. 5.19

9. Findings and Recommendations

To meet/exceed the requirements of the Reissued WDR, the Agency should address all findings including potential violations and areas of concerns identified in Table 10 below prior to completion of its next required SSMP Audit.

Table 10 – Findings and Recommendations

Areas of Concern (AOC)	WDR Citations	Recommendations
• AOC A1: Field staff training/competency with SERP competency for pump stations	• Spec. 5.19 • Att. D-4	• Improve operator training program for SERP/pump stations; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC A2: Communication and coordination between City dispatch operators and Collections management for ensuring all complaints are promptly assessed and addressed	• Att. D-2 • Att. E1	• Develop/improve internal compliant procedures to ensure all incoming complaints are addressed between departments in timely manner, recorded, and staff adhere to expectations/procedures established; update SSMP and change log when implemented
• AOC A3: LRO training/Data Submitter training	• Spec. 5.1	• Improve LRO/data submitter training to achieve desired results; update SSMP and change log when implemented
• AOC A4: Coordination (engineering/operations)	• Att. D-8	• Improve coordination between engineering and operations to achieve desired results; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC A5: Force mains (condition assessments, monitoring)	• Att. D-8	• Initiate condition assessment program for force mains to achieve desired results; update SSMP and change log when implemented
• AOC A6: Pump station coordination (electricians/line staff)	• Att. D-2	• Improve training and coordination to achieve desired results; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC A7: FOG program (implementation/enforcement)	• Att. D-7	• Improve FOG program implementation to achieve desired results; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC A8: Maintenance of critical spare parts, inventory	• Att. D-4	• Improve existing inventory to achieve desired results; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC A9: Improvements (regional partners, coordination)	• Att. D-6	• Improve coordination to achieve desired results; update SSMP and change log when implemented

Areas of Concern (AOC)	WDR Citations	Recommendations
• AOC A10: Improvements (design, construction standards)	• Att. D-5	• Conduct routine period reviews of standards to address any instances where insufficient or ineffective; update SSMP and change log when implemented
• AOC A11: Improvements (Cal-OES notifications, Cat. 1 spills)	• Att E1	• Improve SERP training/drills/implementation to avoid future violations; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC A12: Improvements (SERP training for staff/contractors)	• Att. D-6	• Improve SERP training/drills/implementation with contractors; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC B1: Inexperienced line staff/SSMP training/competency; pump station training	• Spec. 5.19 • Att. D-4	• Refer to AOC A1
• AOC B2: SERP implementation, trainings, post-spill assessments	• Att. D-6	• Refer to AOC A1
• AOC B3: Improvements to critical spare parts/inventory, controls	• Att. D-4	• Refer to AOC A8
• AOC B4: Supplemental Data Submitter CIWQS training	• Att. E1	• Improve training; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC B5: Improvements (regional partners, coordination)	• Att. D-6	• Refer to AOC A9
• AOC B6: Improvements (reducing “hot spots”)	• Att. D-4	• Implement “hot spot” elimination program; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC B7: Improvements (procedures for addressing system deficiencies)	• Att D-8	• Improve narration detail for procedures in place to inspect/identify and rectify operations deficiencies discovered; update SSMP and change log when implemented
• AOC B8: Improvements (FOG implementation, enforcement)	• Att. D-7	• Refer to AOC A7
• AOC B9: Training/familiarity with the City’s SSMP and CIWQS reporting procedures	• Att. D-4 • Att. E1	• Improve Supervisor training on WDR requirements, City SSMP details, and CIWQS reporting requirements for Data Submitters to ensure competency with entering all appropriate data prior to certification of spill reports by LRO (Legally Responsible Official).

Areas of Concern (AOC)	WDR Citations	Recommendations
• AOC C1: Insufficient answers to questions related to Standard Operating Procedures (SOP) for pump stations	• Spec. 5.19 • Att. D-4	• Improve SERP training/drills/implementation to avoid future violations; ensure adherence to established procedures; update SSMP and change log when implemented
• AOC C2: Insufficient answers to inspection questions related to Spill Emergency Response Plan (SERP) implementation procedures, station equipment, and alarm response/procedures	• Spec 5.12 • Att. D-6	• Improve SERP training/drills/implementation to avoid future violations; ensure adherence to established procedures; update SSMP and change log when implemented

Areas of Concern (AOC)	WDR Citations	Recommendations
• AOC D1: Risks/threats for future spills in remote areas	• Prohibitions	• To help further reduce risks/threats/impacts from future spills at this location and at other similar assets, the City should audit and improve its existing maintenance practices for remote locations; the City should also consider utilization of monitoring technology to help further improve oversight of identified critical remote areas
• AOC D2: SERP training/drills in remote areas	• Att. D-6	• To help reduce risks/impacts with future spills, the City should consider conducting customized drills for its SERP specific for remote locations
• AOC D3: Lack of easement area access and maintenance	• Att. D-3 • Spec. 5.19	• The City should further assess access/maintenance practices for assets in this location and others throughout the system to ensure compliance with Att. D-3 requiring adequate accessibility for operations and maintenance

10. Post-Inspection Findings

The Compliance Evaluation Inspection Report (CEI) was submitted to the City on March 7, 2024. In response, the following information was received from the City providing detailed responses to all Areas of Concern (AOCs) identified during the inspection report.

Areas of Concern (AOC)	City Responses
• AOC A1: Field staff training/competency with SERP competency for pump stations	• *"All staff receive training once a year on our SOP # 003 "Lift Station Inspection specifically". They also receive additional training on lift stations once a year when we train of our SERP and SSMP (element 4). Lastly, they receive a separate training on SOP # 042 "Lift Station Overflow Structure". Our crews are taught that they have the support of management, and we can be called in any situation to help or advise."*
• AOC A2: Communication and coordination between City dispatch operators and Collections management for ensuring all complaints are promptly assessed and addressed	• *"The City of Roseville has a person that answers phones from 0630-1600 five days a week. If they are unavailable, after hours and on weekends we have an answering service that the call rolls over to. Calls received by the answering service are relayed to the Service Worker / On Call personnel. The city also customer relationship management system that the public can use to contact us as well. We are also notified of odor complaints that are submitted online that the City can quickly respond too. Are communication with regulatory agencies is handled by reporting on CIWQS, spills that are category 1 or over 1000 gallons are reported to OES as required."*
• AOC A3: LRO training/Data Submitter training	• *"LRO and data submitting training is learned on the job and by attending CWEA and Tri State training classes. Additional training is received through consultant training classes as well. All LRO's and data submitted hold at a minimum a CWEA Collection System maintenance Grade 4 or is a registered PE in California."*
• AOC A4: Coordination (engineering/operations)	• *"The City of Roseville plans capital improvements through system evaluation and condition assessment. Areas of concern are identified with CCTV, visual observations, modeling and impacts on environmental areas of concern. Projects are scheduled and planned through our Tech Services group and on projects that we bring to them we are highly involved. We are currently working with Tech Services on two areas where we have capacity issues. The projects will upsize the existing mains to allow for more capacity and relieve choke points. Projects that effect the collection system on the development side are handled by our Development Services group and Wastewater Collections is involved in these activities. The actual design we do have input on, but we are not involved so much with the day to day building of the infrastructure. If changes are made in the field, we may not know about them until much later. More oversite is needed by the wastewater Collection staff.*

Areas of Concern (AOC)	City Responses
• AOC A5: Force mains (condition assessments, monitoring)	A5: The City of Roseville is currently working on a project to complete a full condition assessment of its force mains. As of today, we have not started a full condition assessment of our force mains do to the lack of technology out there. Tech Service is working to find a technology that will work for our small diameter mains. It may come down to excavating and removing a coupon to do our evaluation.
• AOC A6: Pump station coordination (electricians/line staff)	A6: Wastewater Collection staff are only authorized to operate lift stations with the Hand Off Auto switch. All other electrical work is performed by our Electrical Technicians. These staff members are available 24/7, 365 and have full access to spare / stocked parts that may be required. They can perform electrical work, signal and control wiring, PLC and SCDA programming and troubleshooting.
• AOC A7: FOG program (implementation/enforcement)	A7: The City of Roseville has two full time FOG inspectors that perform public outreach and enforces the City's municipal code section 14.14. The city relies on two components to control FOG, 1. Cleaning and inspection 2. Enforcement and education working with our FSE's. You may also refer to element #7 of our SSMP. We are working with Code Enforcement to apply monetary penalties on an as needed basis. We have developed a program that is currently at the City Attorney's Office for review where we do the inspection, notification of violation (three times) and then hand of to Code enforce the monetary aspect of the enforcement or the closing of the business. We also have language in the code that we can sever or temporarily stop flow from an establishment.
• AOC A8: Maintenance of critical spare parts, inventory	A8: The City of Roseville has identified critical parts that are required to be on hand for the preventive maintenance and emergency maintenance that may be required. These parts are called out in our SSMP element #4 Operation and Maintenance. All electrical components are maintained in our mechanical maintenance warehouse that is controlled by the electrical technicians at the Dry Creek WWTP. All repair fittings and pipe are warehoused at the Collections building and controlled by the wastewater collections team. As material / components are used they are replaced to maintain a reasonable inventory of required parts. All warehoused material is controlled by a material technician that works in wastewater collections to allow better control of what we need to have on hand.
• AOC A9: Improvements (regional partners, coordination)	A9: More work can be performed here. There is a JPA in place but nothing specific to mutual aid and how that would work in an emergency. We do meet three times a year with our satellite agencies, and we do from time to time reach out to work on and or discuss issues of the day.

Areas of Concern (AOC)	City Responses
• AOC A10: Improvements (design, construction standards)	• *"As stated in element #5 of our SSMP, the City of Roseville maintains design and construction standards with minimum requirements for developers and contractors for installing a complete and operable wastewater collection system. The standard has language that calls out for air and vacuum testing along with CCTV for acceptance. The City of Roseville also has a punch list procedure to communicate unacceptable work to developers and contractors. According to the National Clay Pipe Institute the City of Roseville has the most stringent standard for installation and acceptance in the country."*
• AOC A11: Improvements (Cal-OES notifications, Cat. 1 spills)	• *"All category 1 and 2 spills are reported to Cal OES with in the required two hours. All information that is required to be reported is given to the Cal OES operator based on the questions that they ask, and a control number is obtained. Should information change there is an option for updating information. Water samples are taken for spills that are greater than 50,000 gallons. See element #6 of our SSMP."*
• AOC A12: Improvements (SERP training for staff/contractors)	• *"We train on the SERP annually and impromptu classes and testing are conducted through the year. We use an onsite spill simulator to train on spills from a lower lateral clean out and a sewer manhole. Spill volume and start and stop times estimation are trained on as well."* • *"We respond to calls for service within 20 minutes during business hours and within 40 minutes after hours and on weekend and holidays. We train on containing the spill, eliminating the cause, and mitigating the impacts of the spill. Notifications for category 1 and 2 spills are made as required and all spills are photographed and documented. Spills that require reporting to CIWQS are done so within the required time."*

Areas of Concern (AOC)	City Responses
• AOC B1: Inexperienced line staff/SSMP training/competency; pump station training	• B1: While the personnel question may not have answered all the question to the satisfaction of the interviewer it does not mean that they do not know that their job is to protect from dischargers to the environment. The personal questioned were from other crews and do not typically work on lift stations. They have been trained and if they had arrived at a true spill, they would have followed their training to mitigate the issue.
• AOC B2: SERP implementation, trainings, post-spill assessments	• B2: All COR WWC staff have been trained on the SERP twice in the last year. The first training was conducted by the LRO, and a second training was conducted with a consultant. One Source Utility Consulting was used for a half day training along with a spill simulator test for volume estimation, duration and volume recovered. Post spill assessments are completed by the LRO or his supervisors this is not a requirement of the operation staff.
• AOC B3: Improvements to critical spare parts/inventory, controls	• B3: The warehousing of critical spare parts is sufficient to handle any issues that we may encounter. To date we have not had a spill due to lack of spare parts. In extreme cases bypass pumping of the lift stations could be performed as well as any mains that we have in our system.
• AOC B4: Supplemental Data Submitter CIWQS training	• B4: More training may be warranted here and adding another LRO in Collections should be implemented. Seek out third party training for additional compliance training.
• AOC B5: Improvements (regional partners, coordination)	• B5: More work can be performed here. There is a JPA in place but nothing specific to mutual aid and how that would work in an emergency. We do meet three times a year with our satellite agencies.
• AOC B6: Improvements (reducing “hot spots”)	• B6: Hot Spots are removed, when possible, by way of CIPP or replacing with new pipe. We also use FOG Inspection and compliance measure to try and reduce Hot Spots. Time has taught us the FOG does stick to CIP so removal of a main does not mean in perpetuity, it can end up back on the list!
• AOC B7: Improvements (procedures for addressing system deficiencies)	• B7: Improvements are based on our Vactor operator’s observations and CCTV crews condition assessment. We also contract with outside contractors to perform condition assessment of our larger trunk mains. We recently bypassed pumped and inspected our 63” and 66” in two locations to determine the cause and possible extent of damage after blistering was seen in the 2019 Condition assessment of the same mains. As issues are found through condition assessments of collector’s work orders are created and prioritized for repair. COR has its own in house construction crew and work is performed to make all repairs.
• AOC B8: Improvements (FOG implementation, enforcement)	• B8: The City of Roseville has two full time FOG inspectors that perform public outreach and enforces the City’s municipal code section 14.14. The city relies on two components to control FOG, 1. Cleaning and inspection 2. Enforcement and education working with our FSE’s. You may also refer to element #7 of our SSMP. We work with Code enforcement to apply monetary penalties on an as needed basis.

Areas of Concern (AOC)	City Responses
• AOC B9: Training/familiarity with the City's SSMP and CIWQS reporting procedures	• B9: More hands on training is required for probationary employees and a few of our Journeymen. Personnel can sometimes get placed on a crew for years on end and the day to day knowledge may be lost when asked to fill in on another discipline. We train annually on lift station operations the SERP, WDR and SSMP as well as SOP training for mission essential equipment used for preventive and reactive maintenance.

Areas of Concern (AOC)	City Responses
• AOC C1: Insufficient answers to questions related to Standard Operating Procedures (SOP) for pump stations	• C1: While the answers may have been insufficient at the time the fact is that all employees know that if they arrive at any call for service that if they have any questions or issue, they can always call a supervisor. We can improve in this area; we have created an atmosphere where the crews rely on direction from leads and supervisors. More will be done in this space to make the crews feel they can do this all on their own.
• AOC C2: Insufficient answers to inspection questions related to Spill Emergency Response Plan (SERP) implementation procedures, station equipment, and alarm response/procedures	• C2: There has been training and testing on the SERP and on lift station operations, but this audit shows more work is needed. New testing requirements will be implemented for both the SERP and Lift Station training along with impromptu testing on all our disciplines in wastewater collections.

Areas of Concern (AOC)	City Responses
• AOC D1: Risks/threats for future spills in remote areas	• D1: The first lesson learned from this spill was the need for a more aggressive and consistent hydro cleaning schedule for easements and open spaces. We have embarked on a new program that has identified all easements and open spaces and prioritized mains that if water were to spill would have the greatest impact on the environment. Second, we have procured an easement machine to better access some of the harder to reach SMH in easements. This machine adds an additional 500' of reach to the 800' we have on our Vactor trucks.
• AOC D2: SERP training/drills in remote areas	• D2: With our annual training we will be adding an element to cover easements and how to access hard to reach manholes. We will also cover deployment of the easement machine and best practices for working in off site locations. Included in this training we will touch on spill containment and recovery of spilled water as open spaces and easement offer their own unique challenges.
• AOC D3: Lack of easement area access and maintenance	• D3: We have identified areas of concern with regards to access. We are working on removing brush and overgrowth in some areas along with installing base rock and building solid access roads in others. The City's Public Works Department has under construction right now a bike path project that Wastewater Collection worked with them on to gain access to more SMH's along creeks. There is a second project that is kicking off that Collections is involved that will give us even more access to SMH's.

END OF REPORT

Appendix 2 - City Performance Metrics and KPIs

SSS WDR Element	SSS WDR Ref.	Description	Performance Indicator	Unit	Target	KPI Data FY 14/15	KPI Data FY 15/16	KPI Data FY 16/17	KPI Data FY 17/18	KPI Data FY 18/19	KPI Data FY 19/20	KPI Data FY 20/21	KPI DATA FY 21/22	KPI DATA FY 22/23	KPI DATA FY 23/24	Audit Frequency	Responsible Party
Organization	D.ii.c	Chain of Communication	Average response to customer inquiry	Minute	40	19.58	23	20	21	20	21	21	20	20	20	Quarterly	WW Superintendent
			Total customer service requests	Number	0	915	1549	533	302	288	523	325	618	674	252	Quarterly	WW Superintendent
			Total sewer odor complaints	Number	0	9	43	50	39	45	10	24	7	10	25	Quarterly	WW Superintendent
			Total roache complants	Number									N/A	N/A	106	Quarterly	WW Superintendent
			Average rating in customer service card	Number	5	5	5	5	5	5	5	5	4.93	5	5	Quarterly	WW Superintendent
O&M	D.iv.a	Maps	Average response time to map update requests	Days	90	90	90	90	90	90	90	90	30	10	10	Quarterly	WW Superintendent
			Miles of Pipe / Main	Miles									286.05	597.93	602.49	Annually	WW Superintendent
			Miles of Pipe /Laterals	Miles									286.26	291.88	292.93	Annually	WW Superintendent
			Miles of Force Main	Miles										9.9	9.9	Annually	WW Superintendent
	D.iv.b	PM Activities	Manholes Inspection performed	Number	0	2493	3575	1547	1511	149	293	88	0	0	0	Quarterly	WW Superintendent
			Sewer main flushed per year	Miles	250	284	248	295	283.12	226.1	235.9	296.14	288.73	301.36	146.12	Quarterly	WW Superintendent
			Sewer laterals chemically treated per year	Number	1100								1106	1088	404	Quarterly	WW Superintendent
			Sewer laterals mechanically cleaned (eeled) per year	Number	0	14.32	14.77	7.41	1.07	268	235	74	146	107	47	Quarterly	WW Superintendent
			Working staff time to PM program	%	80%	85%	82%	82%	84%	84%	83%	84%	85%	85%	85%	Quarterly	WW Superintendent
			Number of customer accounts per WW employee	Number	561	1517	1554	1772	1757	1943	1873	1873	1852	1944	1821	Quarterly	WW Superintendent
			Average cost of hydro cleaning	$/lf	$0.36	$0.32	$0.33	$0.29	$0.32	$0.34	$0.34	$0.34	N/A	N/A	N/A	Annually	WW Superintendent
			Average cost of sewer mechanical cleaning	$/lf	$1.60	$1.20	$0.77	$0.94	$1.66	$0.30	$0.30	$0.30	N/A	N/A	N/A	Annually	WW Superintendent
	D.iv.c	R&R Plan	Manholes rehabilitated	Number	50	0	0	0	0	0	0	0	0	0	1	Quarterly	WW Superintendent
			Sewer main CCTV inspected per year	Miles	30	75	84.32	59.71	64.1	119.9	94.65	38.57	50.05	51.59	24.82	Quarterly	WW Superintendent
			Sewer laterals CCTV inspected per year	Miles	16	26	35.71	32.51	36.14	29.74	22.46	27.88	28.76	29.99	18.68	Quarterly	WW Superintendent
			Sewer cleanouts installed per year	Number	75	76	83	144	141	67	118	58	46	24	11	Quarterly	WW Superintendent
			Sewer Laterals Rehabilitated	Number	50	48	60	85	89	74	82	110	79	51	37	Quarterly	WW Superintendent
			Total miles rehabed or replaced per year (main)	Miles	5	6	0	0	1.07	0.05	0.09	3.4	3.4	0	3.75	Annually	WW Superintendent
			Total miles rehabed or replaced per year (lateral)	Miles	0.25	0.16	0.27	0.66	0.42	0.45	0.46	0.62	0.43	0.29	0.23	Annually	WW Superintendent
			Annual capitol budget sewer rehab/replacement	$/M	$1.80	$1.05	$1.36	$2.61	$2.25	$2.70	$2.70	$2.10	$3.40	$3.20	$3.11	Annually	WW Superintendent
			Average cost of CCTV main	$/lf	$0.53	$0.41	$0.41	$0.36	$0.40	$0.60	$0.75	$1.85	N/A	N/A	N/A	Annually	WW Superintendent
			Average cost of CCTV lateral	$/lf	$1.34	$1.11	$1.15	$1.04	$1.00	$1.24	$1.29	$1.28	N/A	N/A	N/A	Annually	WW Superintendent
	D.iv.d	Training	On the job accidents	Number	0	5	3	3	4	10	8	6	0	0	1	Quarterly	EU Safety Coordinator
	D.iv.e	Critical Parts	% of required number of identified critical parts are stocked	%	100	100	100	100	100	100	100	100	100	100	100	Annually	Materials Technician
Design	D.v.a&b	Construction	% of new sewer main accepted vs. inspected	%	100	100	100	100	100	100	100	100	100	100	100	Annually	WW Supervisor
			% of new sewer lateral accepted vs. inspected	%	100	100	100	100	100	100	100	100	100	100	100	Annually	WW Supervisor
OERP	D.vi.a	Notification	Average response time to SSO	Minutes	40	20	23	20	17	21	22	17	20	34	21	Quarterly	WW Superintendent
	D.vi.b	SSO Response	Average SSO duration (main)	Minutes	40	n/a	70	0	0	0	154	146	1670	140.8	289	Quarterly	WW Superintendent
			Average SSO duration (lateral)	Minutes	40	n/a	37	48	36	171	245	285	94	25.28	50	Quarterly	WW Superintendent
FOG	D.vii.a	Public Education	FOG public education outreach program events per year	Number	4	3	4	3	3	2	1	1	1	2	2	Annually	Environmental Utilities PIO
	D.vii.b	FOG Disposal	Gallons of FOG curbside pickup per year	Gallons	25	179.75	293.1	373.25	296	506	323	595	476	445	230	Annually	Refuse Division
	D.vii.d	BMPs &Devices	% of total FSE's with grease removal devices	%	90	90	97	98	98	98	98	98	94	94	94	Annually	FOG Supervisor
			% of total FSE's with a variance	%	5	4	4	4	4	4	4	4	4	4	4	Annually	FOG Supervisor
	D.vii.e	FOG Inspections	FSE FOG inspections per year	Number	294	n/a	n/a	181	231	N/A	N/A	221	756	1012	492	Annually	FOG Supervisor
			Number of new FSE permits issued per year	Number	5	n/a	n/a	40	46	N/A	N/A	36	31	35	19	Quarterly	FOG Supervisor
	D.vii.f	Hot Spots	% of hotspot pipes CCTV inspected each year	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0	Annually	WW Supervisor
			Number of SSO's caused by hot spots	Number	0	0	0	0	0	0	0	0	0	1	0	Quarterly	WW Superintendent
			SSO volume casued by hot spots	Gallons	0	0	0	0	0	0	0	0	0	33	0	Quarterly	WW Superintendent
MMM	D.ix.e	SSO Trends	Total number of SSO's mains and laterals	Number	35	42	39	24	25	31	32	51	32	30	17	Quarterly	WW Superintendent
			Total volume SSO's mains and laterals	Gallons	2000	1202	2523	1086	1565	869	517	772	77,828	13,443	381842	Quarterly	WW Superintendent
			% of total SSO volume recovered	%	100	94.5	95.42	91.25	53.86	37.63	86.8	63	50.1	63%	24.30%	Quarterly	WW Superintendent
			Total number of wet weather SSO's	Number	0	0	0	0	0	0	0	0	1	2	0	Quarterly	WW Superintendent
			Total volume of wet weather SSO's	Gallons	0	0	0	0	0	0	0	0	1357	12,920	0	Quarterly	WW Superintendent
			% of SSO's caused by FOG (main)	%	1	50	50	0	0	100%	0	0	0	40%	0.06%	Quarterly	WW Superintendent
			% of SSO's caused by roots (main)	%	70	0	0	0	0	0	0	50%	33%	0%	99.92%	Quarterly	WW Superintendent
			% of SSO's caused by debris/rags (main)	%	0	0	0	0	0	0	100%	50%	0%	60%	0	Quarterly	WW Superintendent
			Number of SSO's caused by LS failure	Number	0	0	0	0	0	0	0	0	0	0	0	Quarterly	WW Superintendent
			Number of SSO's caused by pipe/structural failures	Number	0	0	1	1	3	1	3	14	1	1	4	Quarterly	WW Superintendent
			% of SSO's caused by FOG (laterals)	%	10	0	0	0	0	0	0	0	1	12.50%	0	Quarterly	WW Superintendent
			% of SSO's casued by roots (laterals)	%	75	77.5	84	87	48	20	16	35	26	56%	46.20%	Quarterly	WW Superintendent
			% of SSO's casued by debris/rags (laterals)	%	0	12.5	10.8	9	28	9	11	2	7	24%	5.60%	Quarterly	WW Superintendent
			Repeats SSO's within two years	Number	0	2	0	0	0	4	1	1	0	1	1	Quarterly	WW Superintendent
			Number of Category 1 SSO's	Number	0	0	0	0	1	0	0	0	2	2	1	Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year- Category 2	Number	2	0	1	0	0	0	0	0	0	0	TBD	Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year - lateral	Number	15	16.26	15.04	9.35	8.81	9.56	10.24	16.38	10.13	11.5	TBD	Quarterly	WW Superintendent
			SSO's/100 miles of pipe/year -mains	Number	0.6	0.4	0.4	0	0.19	0.52	0.52	0.35	0.51	0.8	TBD	Quarterly	WW Superintendent
			Flooding claims per year	Number	0	1	0	0					1	1	1	Quarterly	WW Superintendent
			Total Cost of claims per year	$	0		0	0					430	16,620	1,431	Quarterly	Risk Management
			Flooding and Claims											Update 23JAN24			

Appendix 3 — City Spill Performance Report

The purpose of this Appendix is to provide visual data tools to showcase the City's historic spill performance compared with other collection system agencies within the Central Valley Regional Water Board area and state from the required City Audit period 5/2/2021 to 5/2/2024).

List of Figures

Figure 1 – City Spill Dashboard during SSMP Audit Period (May 2021-May 2024) 2
Figure 2 - City Spill Dashboard (volume of spills by year during SSMP Audit Period (May 2021-May 2024) 3
Figure 3 - City Spill Net Volume compared to agencies by year during SSMP Audit Period (May 2021-May 2024) 4
Figure 4 - City Spill Volumes Recovered compared to agencies by year during SSMP Audit Period (May 2021-May 2024) 5
Figure 5 - City Spill Causes (by # of spill) during SSMP Audit Period (May 2021-May 2024)..... 6
Figure 6 - City Spill Causes (by volume of spill) during SSMP Audit Period (May 2021-May 2024) 7
Figure 3 - Spill Causes (by Where Failure Occurred, May 2021-May 2024)..... 8
Figure 7 – City Spill Counts of Where Failures Occurred during SSMP Audit Period (May 2021-May 2024) 8
Figure 8 – City Spill Benchmarks during SSMP Audit period (May 2021-May 2024) 9

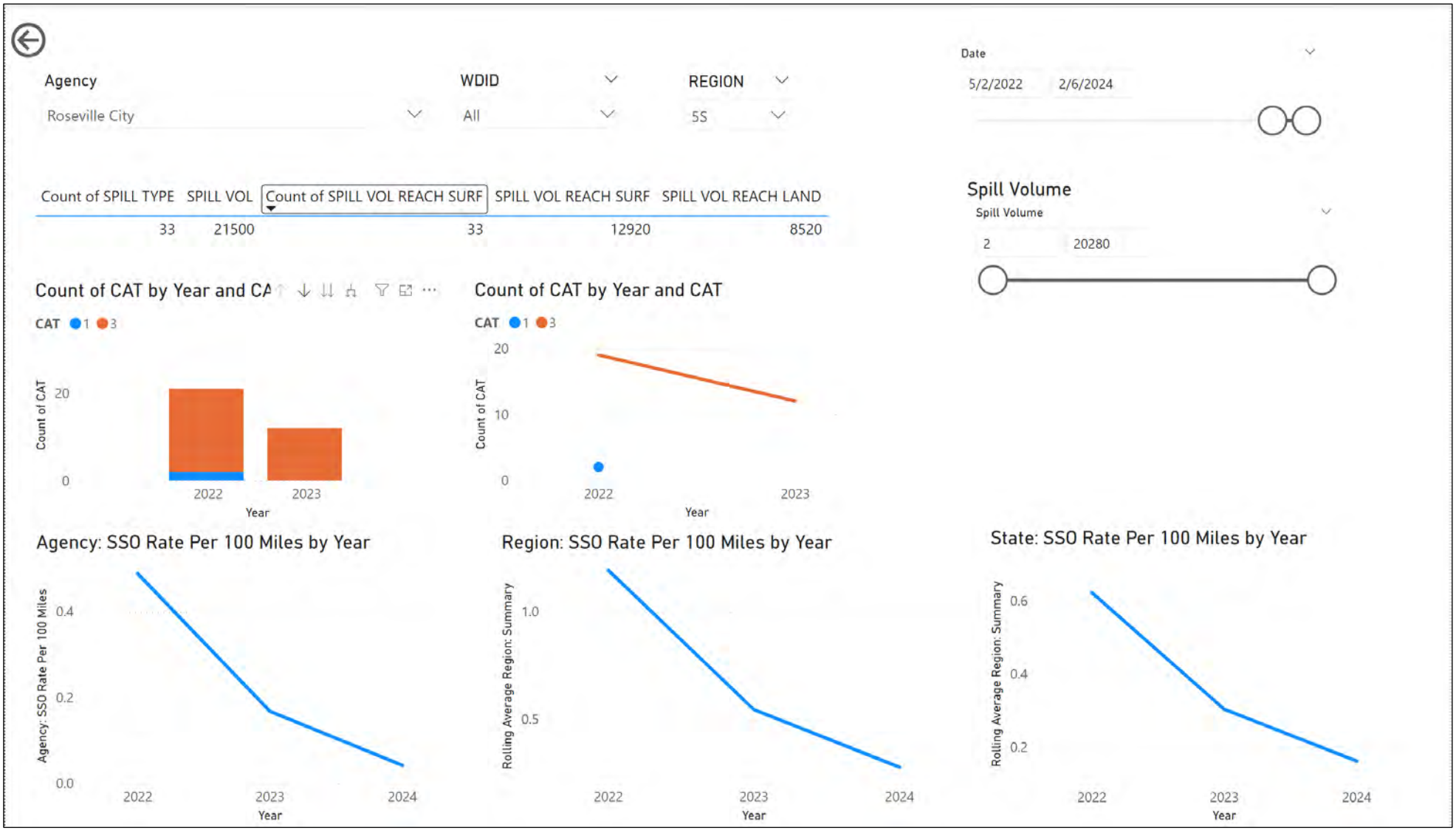


Figure 1 – City Spill Dashboard during SSMP Audit Period (May 2021-May 2024)

Observation: The City's rolling average spill rate per year during the SSMP Audit period decreased from 0.49 spills/100 miles of sewer per year to 0.04 spills/100 miles of sewer per year.

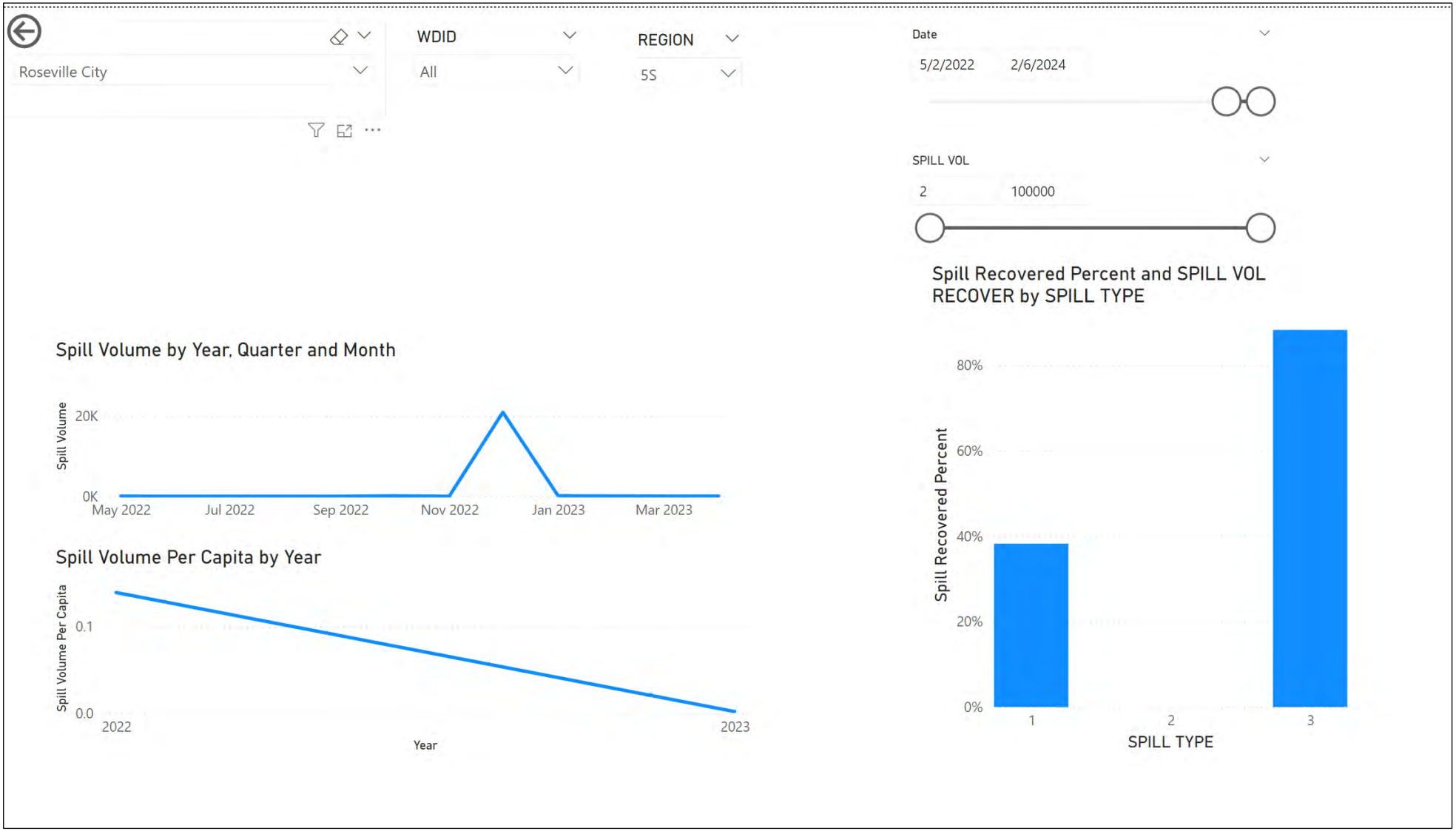


Figure 2 - City Spill Dashboard (volume of spills by year during SSMP Audit Period (May 2021-May 2024)

Observations: The City's volume of spills per capita (population) decreased during the SSMP Audit period from 0.139 gallons per capita to 0.002 gallons per capita). The City's average recovery (%) for Category 1 spills averaged 38% and 88% for Category 3 spills during the SSMP Audit period.

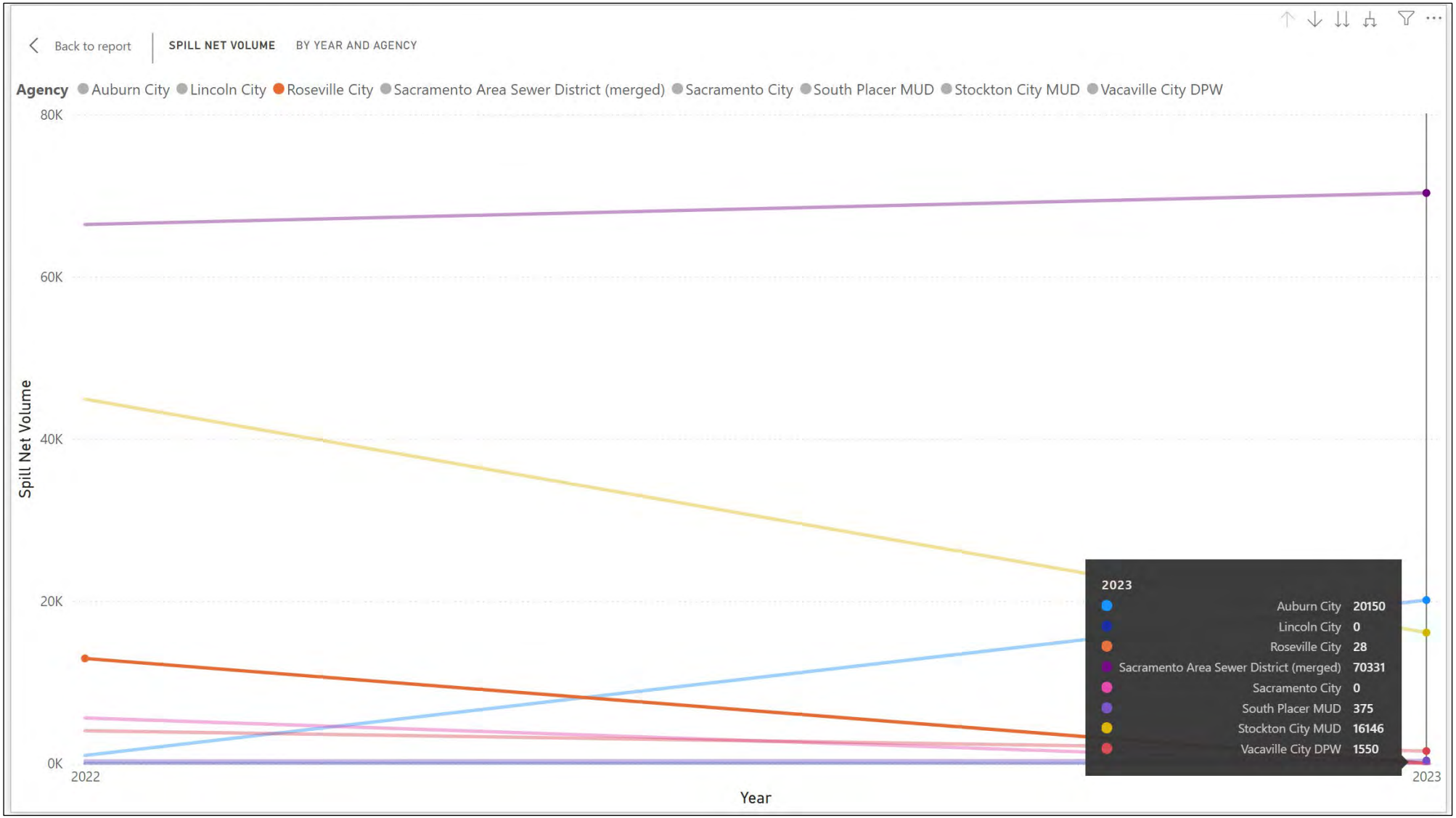


Figure 3 - City Spill Net Volume compared to agencies by year during SSMP Audit Period (May 2021-May 2024)

Observations: The City's net spill volume decreased during the SSMP Audit period from 12,960 gallons in 2022 to 28 gallons. The City's average recovery (%) for Category 1 spills averaged 38% and 88% for Category 3 spills during the SSMP Audit period.

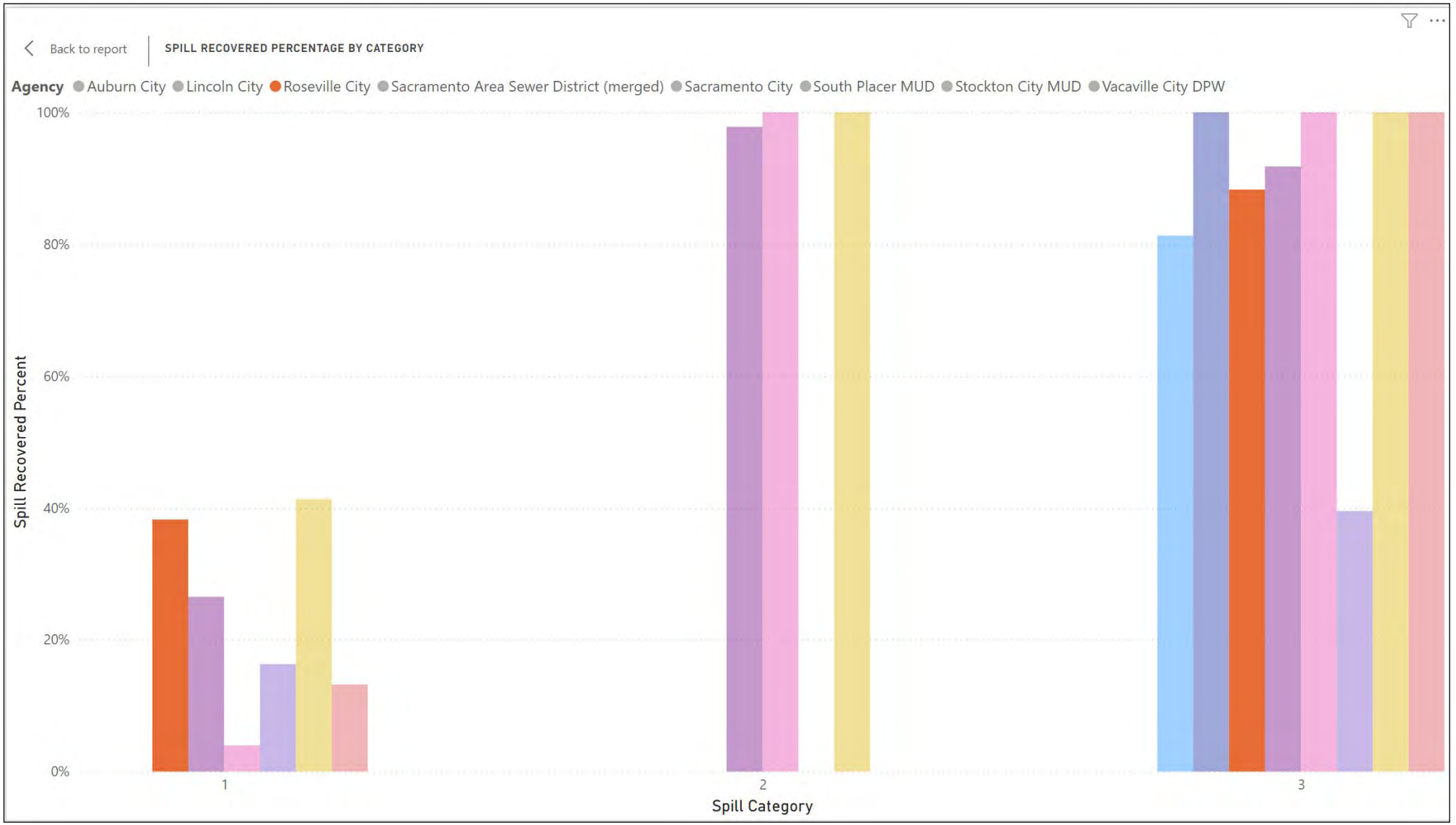


Figure 4 - City Spill Volumes Recovered compared to agencies by year during SSMP Audit Period (May 2021-May 2024)

Observations: The City's spill % of spill volume recovered for Category 1 spills (38%) and for Category 3 spills (88%) was higher than most other agencies within the region during the SSMP Audit period.

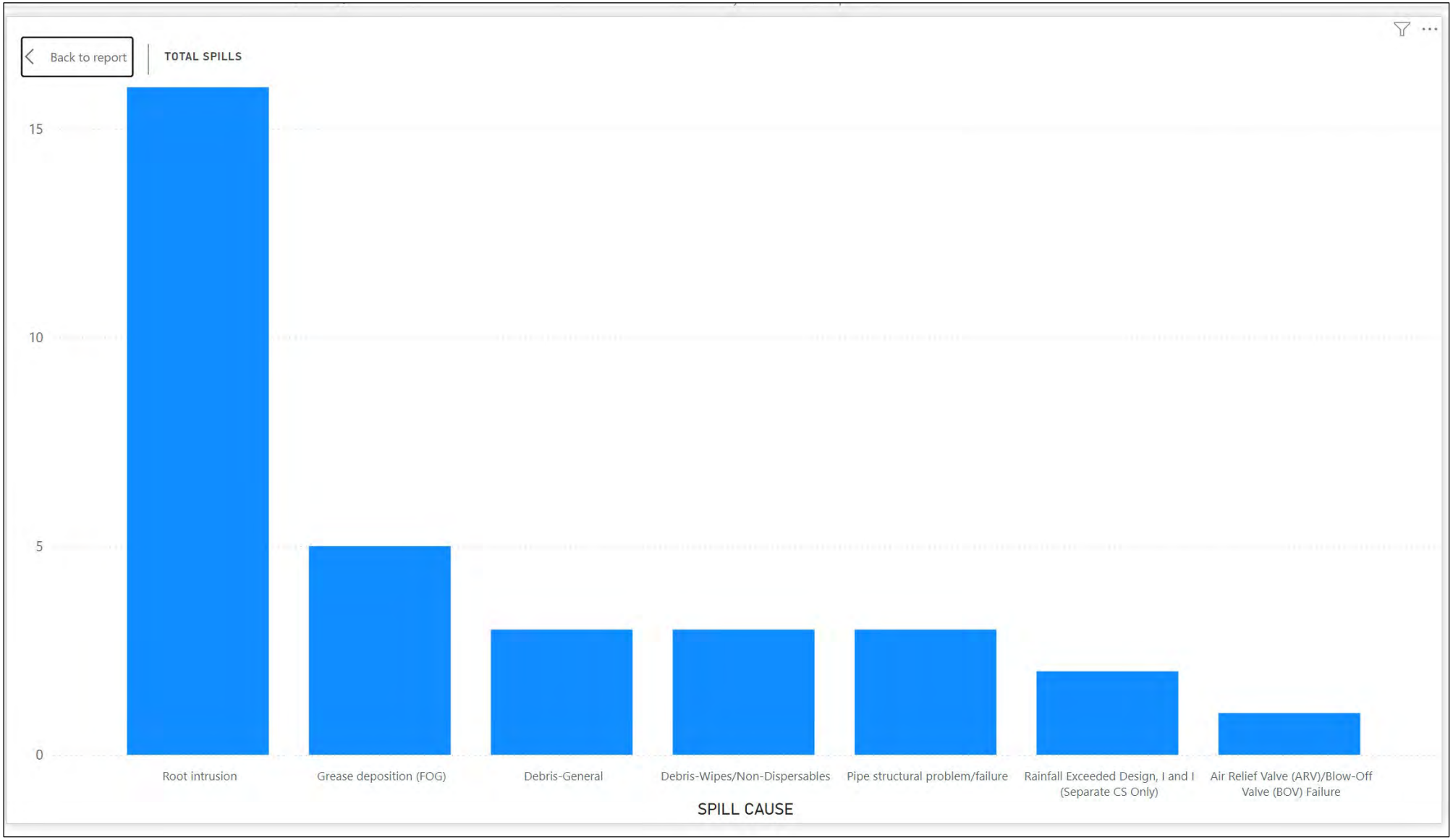


Figure 5 - City Spill Causes (by # of spill) during SSMP Audit Period (May 2021-May 2024)

Observation: The City's spill main causes (by number of spills) were root intrusion and grease during the SSMP Audit period.

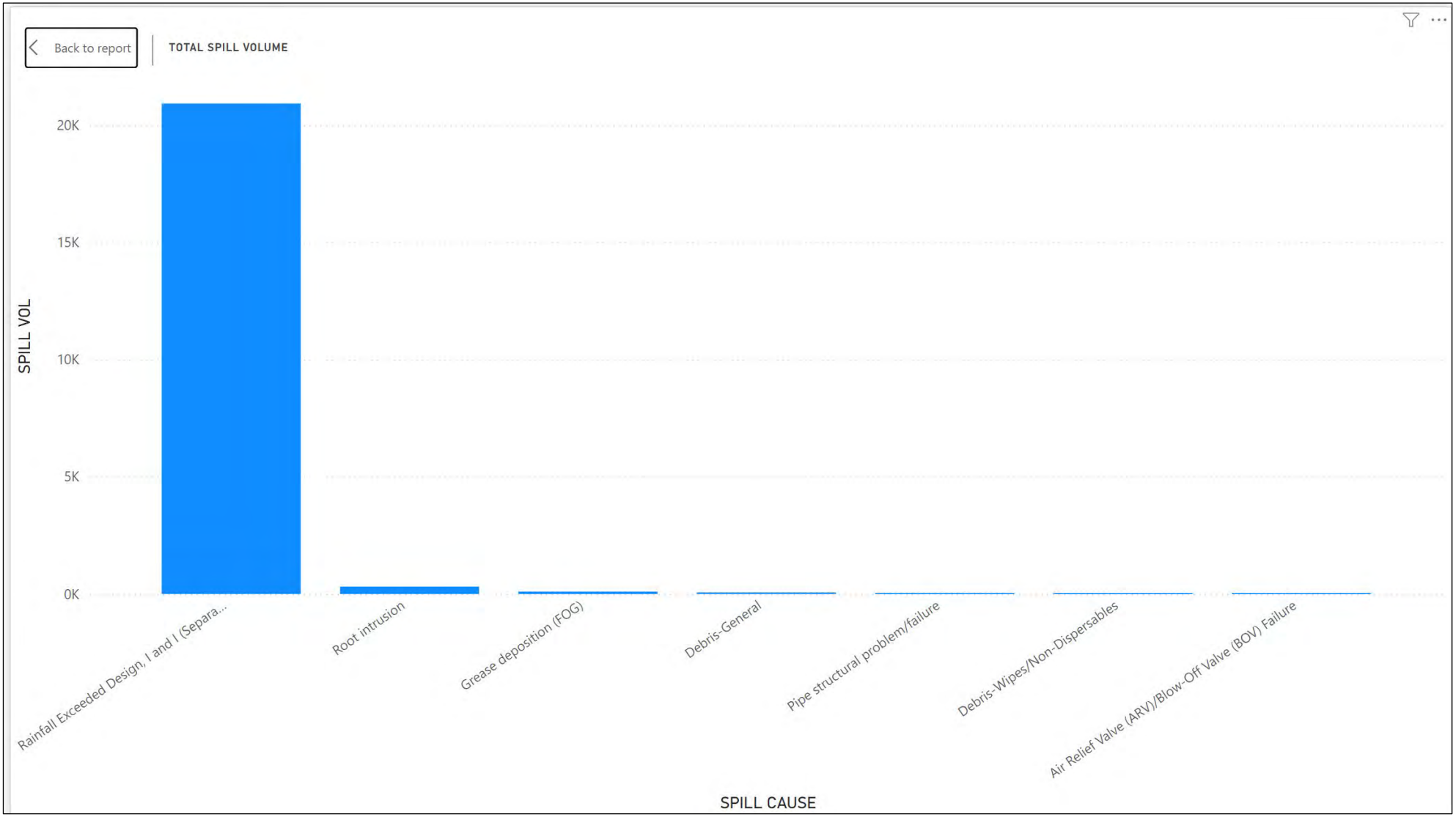


Figure 6 - City Spill Causes (by volume of spill) during SSMP Audit Period (May 2021-May 2024)

Observation: The City's spill main cause (by volume of spills) was rainfall (wet weather) during the SSMP Audit period.

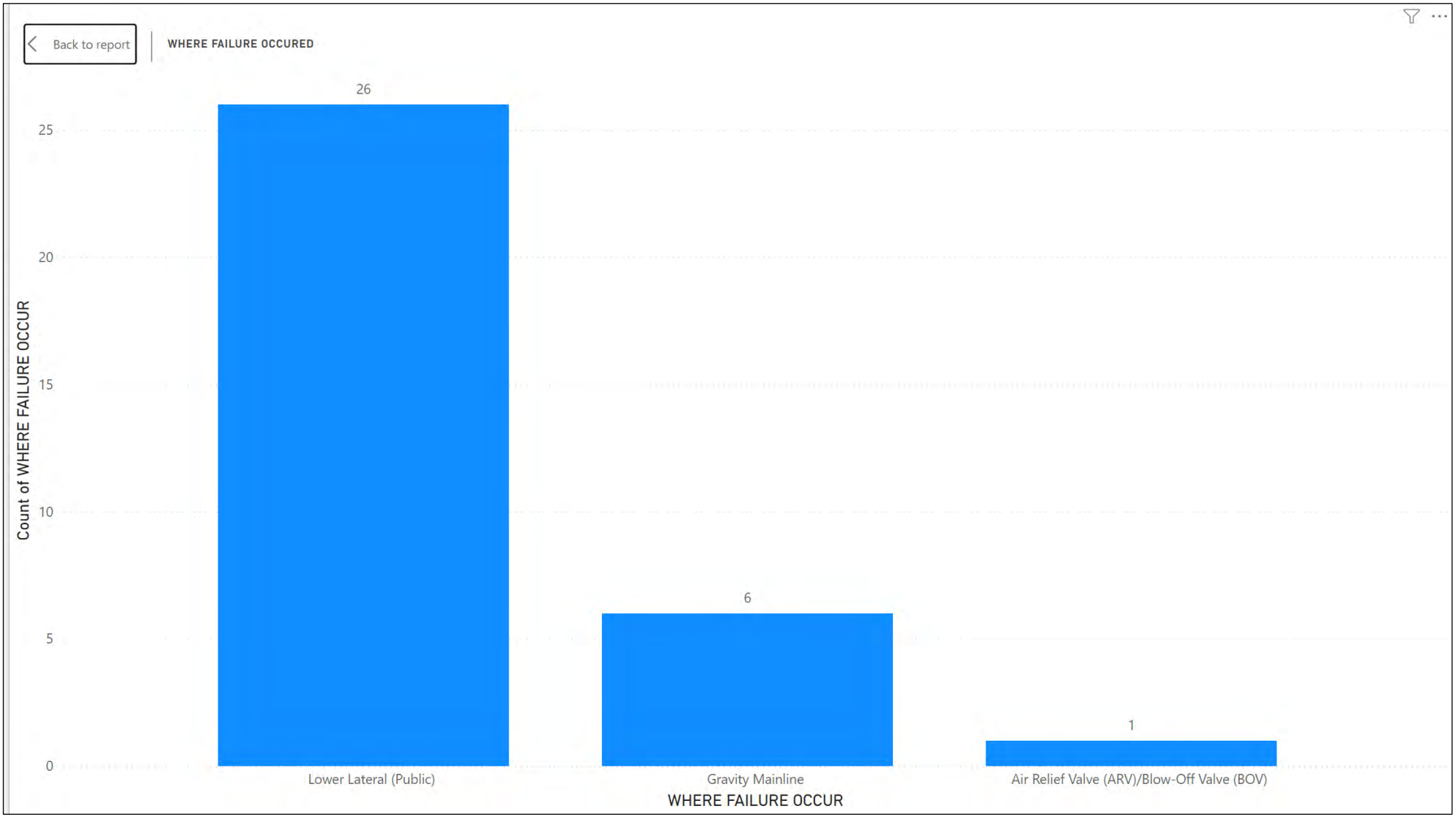


Figure 7 – City Spill Counts of Where Failures Occurred during SSMP Audit Period (May 2021-May 2024)

Observation: The City's main asset location were failures occurred was from lower sewer laterals during the SSMP Audit period.

SPILL ID	AGENCY NOTIFY DT	OPRTOR ARRVL DT	Spill CREATED DT	EST END DT	Agency Notify - Spill Created (Days)	AGENCY NOTIFY - OP ARR (Days)	AGENCY NOTIFY - OP ARR (Hours)	AGENCY NOTIFY - OP ARR (Minutes)
888126	4/8/2023 15:36	4/8/2023 16:30	5/5/2023 0:00	4/8/2023 11:00	27	0	1	54
888177	4/3/2023 10:30	4/3/2023 11:20	5/9/2023 0:00	4/3/2023 11:53	36	0	1	50
887707	3/17/2023 11:09	3/17/2023 11:24	4/17/2023 0:00	3/17/2023 11:24	31	0	0	15
887182	2/25/2023 15:39	2/25/2023 16:12	3/20/2023 0:00	2/25/2023 16:17	23	0	1	33
886996	2/18/2023 8:49	2/18/2023 9:22	3/10/2023 0:00	2/18/2023 9:22	20	0	1	33
887026	2/17/2023 14:20	2/17/2023 14:30	3/13/2023 0:00	2/17/2023 14:35	24	0	0	10
886942	2/15/2023 17:49	2/15/2023 18:36	3/8/2023 0:00	2/15/2023 18:42	21	0	1	47
887213	2/15/2023 14:21	2/15/2023 14:41	3/21/2023 0:00	2/15/2023 14:46	34	0	0	20
886923	2/14/2023 12:07	2/14/2023 12:19	3/7/2023 0:00	2/14/2023 12:19	21	0	0	12
886143	1/23/2023 10:27	1/23/2023 10:36	2/15/2023 0:00	1/23/2023 10:36	23	0	0	9
886302	1/23/2023 7:20	1/23/2023 7:34	2/21/2023 0:00	1/23/2023 7:34	29	0	0	14
886050	1/18/2023 8:52	1/18/2023 9:05	2/10/2023 0:00	1/18/2023 9:05	23	0	1	13
885184	12/31/2022 21:14	12/31/2022 7:46	1/4/2023 0:00	12/31/2022 23:22	4	0	-14	-808
885166	12/31/2022 18:40	12/31/2022 19:07	1/4/2023 0:00	1/1/2023 0:03	4	0	1	27
885444	12/22/2022 13:00	12/22/2022 13:18	1/13/2023 0:00	12/22/2022 13:18	22	0	0	18
885443	12/7/2022 10:58	12/7/2022 11:06	1/13/2023 0:00	12/7/2022 11:06	37	0	1	8
885074	12/4/2022 14:03	12/4/2022 14:35	12/30/2022 0:00	12/4/2022 14:35	26	0	0	32
885042	12/3/2022 11:42	12/3/2022 12:14	12/29/2022 0:00	12/3/2022 12:14	26	0	1	32
884664	11/15/2022 10:29	11/15/2022 10:51	12/7/2022 0:00	11/15/2022 11:00	22	0	0	22
884413	11/9/2022 16:14	11/9/2022 17:25	11/23/2022 0:00	11/9/2022 16:15	14	0	1	71
884376	11/4/2022 19:00	11/4/2022 19:00	11/22/2022 0:00	11/4/2022 19:00	18	0	0	0
884332	10/31/2022 17:22	10/31/2022 17:42	11/18/2022 0:00	10/31/2022 17:42	18	0	0	20
883827	10/14/2022 19:39	10/14/2022 20:17	10/19/2022 0:00	10/14/2022 20:17	5	0	1	38
883804	10/12/2022 15:58	10/12/2022 16:16	10/18/2022 0:00	10/12/2022 16:16	6	0	1	18
883741	9/27/2022 7:03	9/27/2022 7:30	10/12/2022 0:00	9/27/2022 7:30	15	0	0	27
882939	8/21/2022 12:42	8/21/2022 13:05	8/25/2022 0:00	8/21/2022 13:05	4	0	1	23
882862	8/11/2022 13:50	8/11/2022 13:58	8/22/2022 0:00	8/11/2022 13:58	11	0	0	8
882367	7/7/2022 16:58	7/7/2022 17:34	7/19/2022 0:00	7/7/2022 17:34	12	0	1	36
882603	7/1/2022 11:28	7/1/2022 11:37	8/3/2022 0:00	7/1/2022 11:37	33	0	0	9
882213	6/22/2022 8:19	6/22/2022 8:26	7/11/2022 0:00	6/22/2022 8:26	19	0	0	7
881796	6/4/2022 10:12	6/4/2022 10:31	6/16/2022 0:00	6/4/2022 9:30	12	0	0	19
881950	5/2/2022 20:33	5/2/2022 20:52	6/27/2022 0:00	5/2/2022 20:53	56	0	0	19
881952	5/2/2022 17:31	5/2/2022 17:53	6/27/2022 0:00	5/2/2022 17:53	56	0	0	22

Figure 8 – City Spill Benchmarks during SSMP Audit period (May 2021-May 2024)

Observations: The City averaged approximately 24 minutes between the agency spill notification time and operator arrival times (removing erroneous data logged for spill ID #885184 occurring on 12/31/2022). The City failed to notify Cal-OES within two hours (32 minutes late) for one spill occurring on 12/31/2022 (spill ID #885184. Erroneous data was also observed for two spills (ID #884376 and #881796). The City was fully compliant with providing draft and certified reports within the required timeframes for all Category 1 spills during the SSMP Audit.

Appendix 4 — City SSMP Audit Implementation Plan and Schedule

The purpose of this Appendix is to provide a plan/schedule to address SSMP Audit findings, recommendations, and corrective actions for utilization with updating the City's next required SSMP update (due on or before May 2, 2024).

FINDINGS (ATTACHMENTS)				
Requirements		Start Date	End Date	Findings/Recommendations
Att. D-1	Goal & Intro	Aug-Sept 2024	Aug-Sept 2024	✓ Improve evaluating allocation of system resources ✓ Improve prioritization of system repairs
Att. D-2	Organization	Aug-Sept 2024	Aug-Sept 2024	✓ Improve LRO and Data Submitter training ✓ Improve internal communication/training procedures
Att. D-3	Legal Authority	N/A	N/A	✓ None
Att. D-4	O/M Program	Oct-Dec 2024	Oct-Dec 2024	✓ Improve training, procedures, identification of known problem areas ✓ Improve SSMP working knowledge ✓ Improve CIWQS training on requirements. ✓ Improve easement maintenance and emergency response activities
Att. D-5	Design and Performance	N/A	N/A	✓ None
Att. D-6	SERP	Oct-Dec 2024	Oct-Dec 2024	✓ Improve training, regional partner collaboration
Att. D-7	Pipe Blockage Control Program	Jan-March 2025	Jan-March 2025	✓ Improve source control measures, schedule
Att. D-8	SECAP	Jan-March 2025	Jan-March 2025	✓ Improve assessments for priority locations ✓ Improve field data collection procedures
Att. D-9	Monitoring, Measurement	N/A	N/A	✓ None
Att. D-10	Audits	Jan-March 2025	Jan-March 2025	✓ Solicit input from field staff for future Audits
Att. D-11	Communications	N/A	N/A	✓ None

FINDINGS (SPECIFICATIONS)				
Requirements		Start Date	End Date	Findings/Recommendations
Spec. 5.1	Designation of LRO	Aug-Sept 2024	Aug-Sept 2024	✓ Improve LRO training/oversight
Spec. 5.2	SSMP Development, Implementation	N/A	N/A	✓ None
Spec. 5.3	SSMP Updates	N/A	N/A	✓ None
Spec. 5.4	SSMP Audits	Oct-Dec 2024	Oct-Dec 2024	✓ Solicit input from field staff for future Audits
Spec. 5.6	System Resilience	Oct-Dec 2024	Oct-Dec 2024	✓ Consider recommendations outlined in each element
Spec. 5.10	Resources	Oct-Dec 2024	Oct-Dec 2024	✓ Improve evaluating allocation of collection system resources
Spec. 5.11	Performance Analysis	N/A	N/A	✓ None
Spec. 5.12	SERP	Jan-March 2025	Jan-March 2025	✓ Improve training, regional partner collaboration
Spec. 5.13	Notif, Monitoring, Reporting, Records	Jan-March 2025	Jan-March 2025	✓ Improve training/field data collection procedures
Spec. 5.14	Notifications (private spills)	N/A	N/A	✓ None
Spec. 5.15	Failure to report	N/A	N/A	✓ None