FY 2010-2011 SSMP Program Audit (Internal)



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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.

- 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.

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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.

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Name of Auditor (s)	Mark Cossairt	Michael Zacharia		
Date of Audit	14 Mar 2012	Audit Period	FY 201	.0-2011
	Collection S	ystem Overview		
Miles of Gravity Sewer N	522 Miles			
Miles of Sewer Laterals	208 Miles			
Number of Pump Station	14			
Population Served	118,78	38		
Total Category 1 Spills	0	Total Category 2 Spills		13

Note: Information above is for FY 2010-2011

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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	N	Review and revise goals. Goal one is obsolete. The city's SSMP development plan and implementation
complying with the Waste		schedule is complete
Discharge Requirement (WDR)		

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

- 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

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Contact information for	Ν	Information needs to be updated on city's website
maintenance personnel and after		
hour's response		
Chain of Communication	N	Section needs to be updated on city's website, along
reporting chart current and		with RWQCB contacts updated
numbers current?		

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.

- 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	Υ	RMC 14.12.050
Sewers and connections properly designed , constructed and inspected	Υ	City has updated construction and design specifications
Ensure access for maintenance, inspection and repairs	Υ	
Enforce violations of sewer use and fog ordinances	Υ	RMC 14.14 FOG for Food Service Establishments (FSE)
Inter-agency and satellite agency agreements in place	Υ	

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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.

- 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	Υ	
Document preventative maintenance work orders using CMMS	Υ	Sample of preventative maintenance schedule in appendix D-2
Condition assessment program that identifies and ranks criticality of line segments for capital improvement	Υ	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

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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	Υ	City maintains and regularly updates design and construction standards
Design and construction standards for repair and rehabilitation of existing sanitary sewer facilities	Υ	
Procedures for inspection and acceptance of repaired and rehabilitated and new sanitary sewer facilities	Υ	Procedures are contained in city construction and design standards
Standard operating procedures for existing sanitary sewer facilities	Υ	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)

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• 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	Υ	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	Υ	Contained in Appendix F-1 SSO Emergency Response Procedures
Procedures to prevent the discharge of sewage to waters of the state	Υ	Procedures are addressed in SOP for containment measures
Program and procedures established to correct or minimize the impacts of any SSOs that occur	Υ	Business process has been established
Considering performance metric data, is SSOERP effective in handling SSOs	Υ	

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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.

- 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	Υ	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	Υ	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	

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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.

- 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	Υ	Per Utility Manager, all up to date
Procedures for the analysis, evaluation, and prioritization of hydraulic deficiencies	Υ	Per Utility Manager, all up to date

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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.

- 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	Υ	Completed through Hansen and excel spreadsheets monitoring trends
Evaluate the success of the preventative maintenance program	Υ	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.	Υ	Completed through Hansen and excel spreadsheets monitoring trends
Is the City able to evaluate the effectiveness of the SSMP based on relevant information	Υ	Completed through Hansen and excel spreadsheets monitoring trends

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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.

- 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.					

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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)	ment losse	3/20/12
Mike Zacharia	Principal Engineer (Auditor)	W. Zac.	3-20-12
Kenneth Glotzbach	Wastewater Utility Manager Legal Responsible Official (LRO)	Lyp	4-29-12
Chris Bracco	Wastewater Collection Supervisor	Cha Brans	29MAR/

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City of Roseville Wastewater Collection

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SUPPORT DOCUMENTS, TRENDS AND DATA ATTACHMENT 1



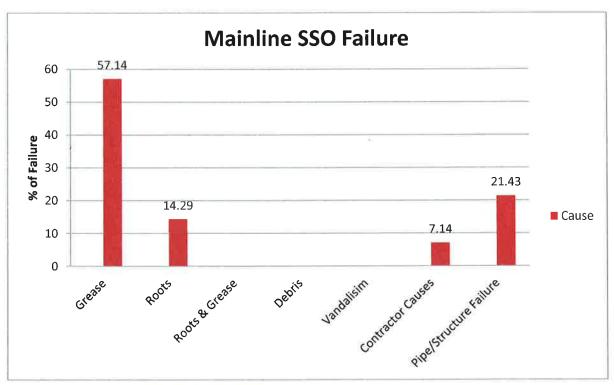
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System Performance Metrics

	Management, Operation and Maintenance System-Performance Metrics								
Source	Main Line SSO's-Fiscal Year							Avg/YR	Avg/100 miles
	7/8	8/9	9/10	10/11	11/12	12/13			sewer
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
	7/8	8/9	9/10	10/11	11/12	12/13			sewer
Laterals	16	9	6	10			41	10.25	0.197
Volume/Gals.	456	166	99	164			885	221.25	4.255
Source							Total Avg/YR		Avg/100 miles
	7/8	8/9	9/10	10/11	11/12	12/13			sewer
Laterals/Mains	19	11	8	13			51	12.75	0.070
Volume/Gals.	1226	266	322	251			2065	516.25	2.829

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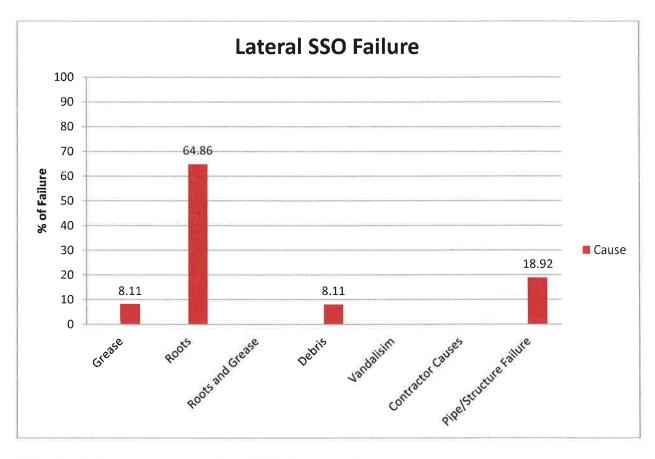
	Mainline Stoppages by Cause							
			Fiscal	Year			.*	
	7/8	8/9	9/10	10/11	11/12	12/13		
Cause			Cou	unt			Total	%
Grease	3	1	2	2			8	57.14
Roots		1		1			2	14.29
Roots &								
Grease								
Debris								
Vandalisim								
Contractor								
Causes	1						1	7.14
Pipe/Structure								
Failure		2	1				3	21.43
Total	4	4	3	3			14	100.00



Note: The data represents trends from FY 2007 to present

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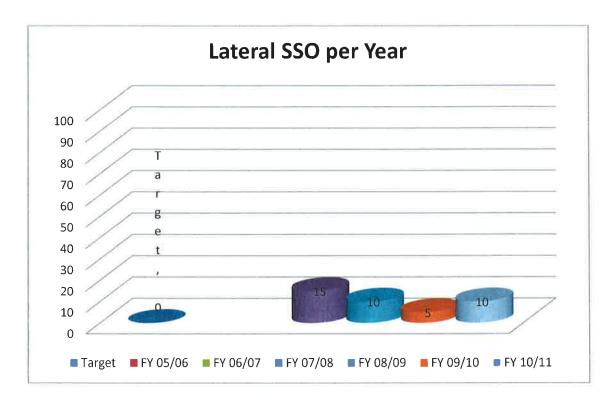
	Lateral Stoppages by Cause							
			Fiscal Y	ear				
	7/8	8/9	9/10	10/11	11/12	12/13		
Cause		Count						%
Grease	1	2					3	8.11
Roots	8	5	4	7			24	64.86
Roots and Grease								
Debris	1	1		1			3	8.11
Vandalisim								
Contractor Causes								
Pipe/Structure				2				
Failure	4		1				7	18.92
Total	14	8	5	10			37	100.00

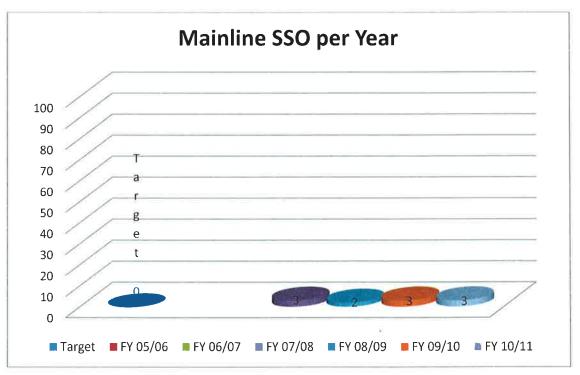


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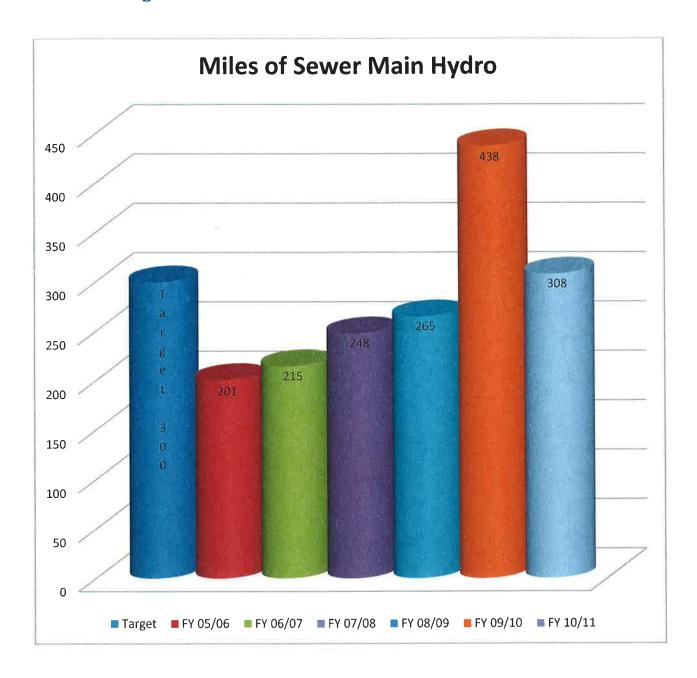
Lateral/Mainline SSO Charts FY 07 to Present





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Vactor Footage Chart



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Sewer Lateral Cleaned Chart

