

FINAL
SEWER SYSTEM
MANAGEMENT PLAN

Prepared for
City of Roseville, California
June 15, 2007
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LIST OF ACRONYMS

AB	Assembly Bill
BAT	Best Available Technology
BMP	Best Management Practice
CASA	California Association of Sanitation Agencies
CCTV	Closed-Circuit Television
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan or Capital Improvement Program and Capital Improvement Project
City	City of Roseville
CM	Corrective Maintenance
CMMS	Computerized Maintenance Management System
CDFG	California Department of Fish and Game
CWEA	California Water Environment Association
CVCWA	Central Valley Clean Water Association
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
GWI	Groundwater Induced Infiltration
GWDR	General Waste Discharge Requirements and/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
MSDS	Material Safety Data Sheets
NPDES	National Pollution Discharge Elimination System
NRC	National Research Council
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
PdM	Predictive Maintenance
PM	Preventative Maintenance
PMP	Preventative Maintenance Program
POTWs	Publicly Owned Treatment Works
R&R	Rehabilitation and Replacement
RD/II	Rainfall Dependent Infiltration and Inflow
RWQCB	Regional Water Quality Control Board
SCAP	Southern California Alliance of Publicly Owned Treatment Works
SIUs	Significant Industrial Users
SOP	Standard Operating Procedure <u>or</u> Standard Maintenance Procedure
SPWA	South Placer Wastewater Authority
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
TOC	Table of Contents
TTC	Trenchless Technology Center
USA	Underground Service Alert
WDP	Waste Discharge Permit
WDR	Waste Discharge Requirements and/or General Waste Discharge Requirements (GWDR)
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 full collapse of the pipeline. If not caught in time, the blockage may cause an overflow. This is also called a stoppage.

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 through protection and enhancement of the water environment. CWEA offers services at the state level and locally through 17 geographical local sections. 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 SSOs.

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.

Groundwater Induced Infiltration (GWI) – Infiltration attributed to groundwater entering the sewer system.

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.

Overflow 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.

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.

Rainfall Dependent Infiltration and Inflow – Infiltration and Inflow that is attributed directly to rainfall.

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 Overflow (SSO) – The Statewide GWDR defines an SSO as any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system, including overflows or releases that reach waters of the United States, overflows or releases that *do not* reach water of the United States, and backups into buildings and/or private property caused by conditions within the publicly owned portion of the sewer system.

Sanitary Sewer Overflow Categories

- Category 1 – Discharges of untreated or partially treated wastewater of any volume resulting from an enrollee’s sanitary sewer system failure or flow condition that:
 - Reach surface water and/or reach a drainage channel tributary to surface water
 - Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin.
- Category 2 – Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from an enrollee’s sanitary sewer system failure or flow condition that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
- Category 3- All other discharges of untreated or partially treated wastewater resulting from an enrollee’s sanitary sewer system failure or flow condition
- Private Lateral Sewage Discharges – Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee’s sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be voluntarily reported to the CIWQS Online SSO Database.

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 considered to be part of the sanitary sewer system and discharges into these temporary storage facilities are not to be considered SSOs.

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.

Southern California Alliance of Publicly Owned Treatment Works - Is a non-profit organization comprised of Publicly Owned Treatment Works including wastewater treatment plants and public collection system owner/operators dedicated to assisting its member cities and agencies in achieving regulatory compliance. Website: <http://scap1.org/>

Stakeholder - A person or organization that has a vested interest in the development and outcome of the SWRCB Order No. 2006-0003 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 SSO 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.

SEWER SYSTEM MANAGEMENT PLAN

EXECUTIVE SUMMARY

The City of Roseville (City) operates under the council-manager form of municipal government. The City Council enacts laws and establishes administrative policy for the City. The City Manager is responsible for implementing City Council policy and the overall administration of day-to-day operations for the City of Roseville.

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 which includes inspecting, cleaning, repairing and monitoring the gravity sewer lines, force mains and lift station.

The City initiated a preliminary Sewer System Management Plan (SSMP) assessment in 2005 to evaluate how well the Wastewater Collection (WWC) Division was positioned to 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.

The WWC Division hired Brown and Caldwell in 2006, to perform a comprehensive audit of the WWC Division practices in terms of WDR compliance. This audit produced a SSMP development plan and implementation schedule. Following the audit, the WWC Division retained Brown and Caldwell to prepare the formal SSMP.

Service Area and Relevant Statistics:

Figure ES-1 illustrates the boundary of Roseville's geographical service area. Statistics provided in this SSMP are as of April 01, 2012 and subject to change over time. Statistics subject to change will be updated in the appendices and on the City's website (www.roseville.ca.us).

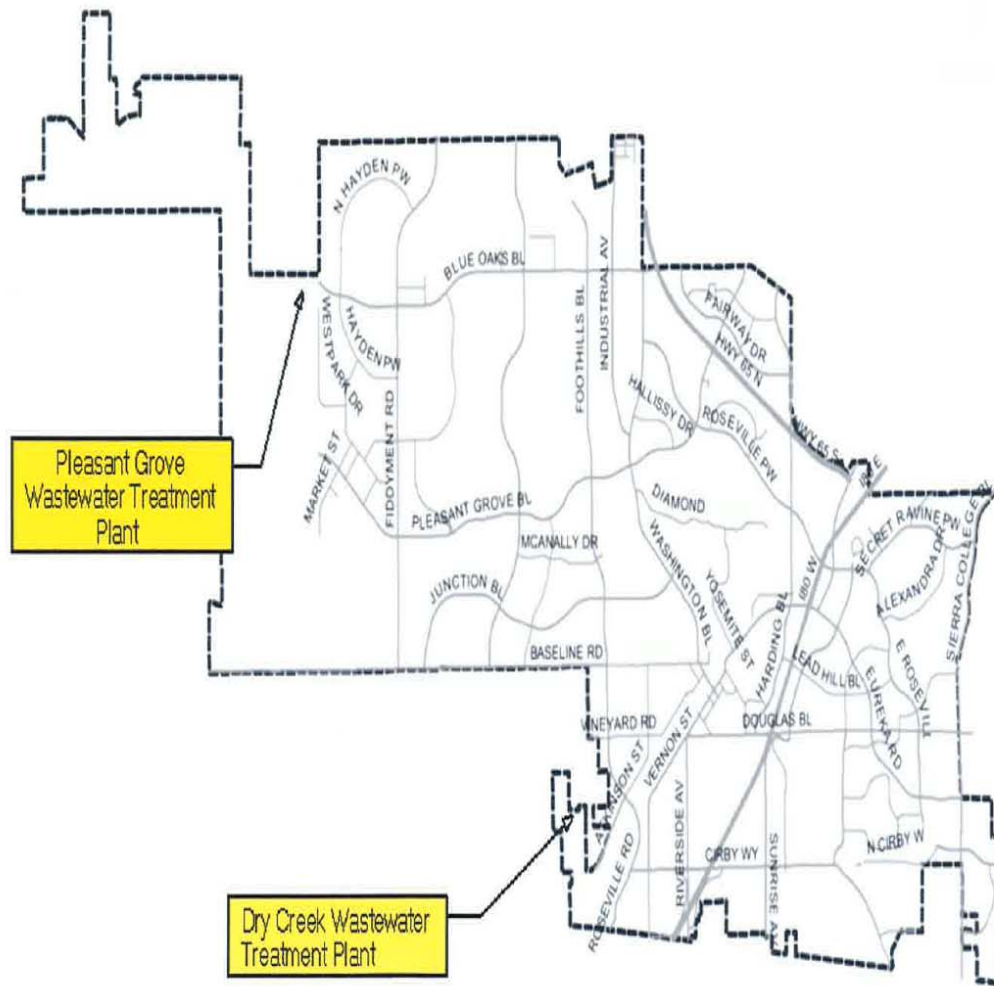


Figure ES-1. Roseville Vicinity Map

The City services area is approximately 43.09 square miles, has approximately 45,000 residential, 1,932 commercial and 600 industrial sewer connections and two Regional Wastewater Treatment Plants.

The WWC Division provides service to approximately 134,073 sewer customers. The wastewater collection and conveyance system consists of 751 miles sewer pipe ranging in size of 4" to 72" in diameter, 11,154 maintenance holes, and 15 neighborhood lift stations that convey an average dry weather flow of approximately 17 MGD. Sanitary sewerage is conveyed from the City's East boundaries to the Dry Creek Wastewater Treatment Plant and from its North and West boundaries to the Pleasant Grove Wastewater treatment plant.

WWC Division statistical records indicate that prior to the creation of this SSMP it has had a moderate Sanitary Sewer Overflow (SSO) rate in comparison to other communities in California of similar size and complexity. In the years prior to adoption of the SSMP, the WWC Division has experienced approximately 168 SSOs releasing approximately 15,203 gallons of sewage from the sanitary sewer collection and conveyance system. Since adoption of the SSMP in 2007, the city has experienced a combined 256 SSOs releasing approximately 9,000 gallons of sewage from the sanitary sewer system. Of that total, 8,149 gallons have been captured and returned to the sanitary sewer system.

The majority of these SSO have occurred from blockages in service laterals. Since adoption of the SSMP, the average volume spilled per SSO has been less than 35gallons/event. All SSOs have been mitigated in a timely manner and have not negatively impacted public health or the environment.

The purpose of this SSMP is to describe the activities WWC Division uses to manage the City's wastewater collection system to further eliminate preventable SSOs, minimize those SSOs that do occur and protect both public health and the environment.

Objectives of this Plan:

1. To establish goals that align the management, operation and maintenance and capacity assurance activities in a manner that will focus staff efforts to achieve the intended purpose of this SSMP.
2. To comply with the SWRCB's General Waster Discharge Requirement (GWDR) order No. 2006-0003 issued May 2, 2006.
3. To describe how the WWC Division complies with each element of the SWRCB's WDR/SSMP requirements addressing the following:
 - An Executive Summary, introducing the project scope and an overview of the City's and WWC Division's size, complexity and SSMP responsibility.
 - An organizational structure, identifying SSMP responsibilities, job classifications, contact information, and location of SSMP documents.
 - A narrative describing how WWC Division complies with each requirement.
 - WDR/SSMP requirements for each element,
 - Policies, procedures, and programs the WWC Division has in place or will have in place to achieve compliance with the SWRCB WDR/SSMP.
 - A living appendix for contact personnel, job descriptions, policies, procedures, and programs subject to change.
 - City's internet websites addresses for support/associated SSMP documents. (Some documents will be placed on the City's intranet site for security reasons. All electronic documents will be made available to State and Regional water board staff upon request).



SEWER SYSTEM MANAGEMENT PLAN

0. BACKGROUND

California State Water Resources Control Board (SWRCB) adopted a Statewide General Waste Discharge Requirement (WDR) order No. 2006-0003 May 2, 2006. This WDR dictates each publicly owned sanitary sewer system, termed Enrollee, develop, document, and implement a Sewer System Management Plan (SSMP) and make it available to the State and Regional Water Quality Control Boards (RWQCB) upon request.

The following paragraphs briefly summarize the key elements of an SSMP and the implementation requirements for Enrollees. The due dates for various elements of specific relevance to the City of Roseville are then summarized in Table 0-2.

0.1 What is an SSMP?

SSMPs are state-mandated requirements for California public collection system agencies that own or operate sanitary sewer systems greater than one (1) mile in length. The goal for these plans is to reduce SSOs, protect public health and environment and improve the overall maintenance and management of sewer systems including neighborhood lift stations.

0.2 What are the SSMP Requirements?

Table 0-1 identifies each required SSMP element and indicates what criterion must be addressed to achieve compliance with each respective/corresponding element.

SSMP Elements	Criteria
Goals	<ul style="list-style-type: none">• Properly manage, operate and maintain all parts of the collection system• Provide adequate capacity to convey peak wastewater flows• No repeat overflows from same location• Minimize the frequency of SSOs• Mitigate the impacts that are associated with all SSOs that may occur• Comply with all applicable regulatory notification and reporting requirements
Organization	<ul style="list-style-type: none">• Identify agency staff responsible for the SSMP• Identify chain of communication for responding to and reporting SSOs
Legal Authority	<ul style="list-style-type: none">• Control I/I from the collection system and laterals• Require proper design and construction of sewers and connections• Require proper sewer installation, testing and inspection• Ability to impose source control requirements
Operation and Maintenance Program	<ul style="list-style-type: none">• Maintain up-to-date maps• Allocate adequate resources for system operation and maintenance• Prioritize preventative maintenance activities• Identify structural equipment to minimize equipment/facility downtime• Provide staff training on a regular basis
Design and Construction Standards	<ul style="list-style-type: none">• Identify minimum design and construction standards and specifications• Identify procedures and standards for inspecting and testing

Table 0-1. SSMP Requirements	
SSMP Elements	Criteria
Overflow Emergency Response Plan	<ul style="list-style-type: none"> • Provide SSO notification procedures • Develop and implement a plan to respond to SSOs • Develop procedures to report and notify SSOs • Develop procedures to prevent overflows from reaching surface waters, and to minimize or correct any adverse impact from SSOs
FOG Control Program	<ul style="list-style-type: none"> • Develop a Fats, Oil and Grease (FOG) control plan, if needed
System Evaluation and Capacity Assurance	<ul style="list-style-type: none"> • Establish a process to assess the current and future capacity requirements • Implement a capital improvement plan to provide hydraulic capacity
Monitoring, Measurement and Program Modifications	<ul style="list-style-type: none"> • Measure the effectiveness of each SSMP element • Monitor each SSMP element and make updates as necessary
SSMP Audits	<ul style="list-style-type: none"> • Conduct an annual audit that includes identifying deficiencies and steps to correct them
Communication Program	<ul style="list-style-type: none"> • Communicate with public (Customers) on SSMP development, implementation and performance and create a plan for communication with tributary/satellite sewer systems

0.3 What is the City Required to Do?

The WDR Provisions 1 thru 13 describes the requirements for compliance and consequences for non-compliance:

1. The Enrollee must comply with all conditions of the Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for enforcement action.
2. It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with the general WDRs. Nothing in the general WDRs shall be:
 - (i) Interpreted or applied in a manner inconsistent with the Federal Clean Water Act, or supersede a more specific or more stringent state or federal requirement in an existing permit, regulation, or administrative/judicial order or Consent Decree;
 - (ii) Interpreted or applied to authorize an SSO that is illegal under either the Clean Water Act, an applicable Basin Plan prohibition or water quality standard, or the California Water Code;
 - (iii) Interpreted or applied to prohibit a Regional Water Board from issuing an individual NPDES permit or WDR, superseding this general WDR, for a sanitary sewer system, authorized under the Clean Water Act or California Water Code; or
 - (iv) Interpreted or applied to supersede any more specific or more stringent WDRs or enforcement order issued by a Regional Water Board.
3. The Enrollee shall take all feasible steps to eliminate SSOs. In the event that an SSO does occur, the Enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO
4. In the event of an SSO, the Enrollee shall take all feasible steps to prevent untreated or partially treated wastewater from discharging from storm drains into flood control channels or waters of the United States by blocking the storm drainage system and by removing the wastewater from the storm drains.
5. All SSOs must be reported in accordance with Section G of the general WDRs.

6. In any enforcement action, the State and/or Regional Water Boards will consider the appropriate factors under the duly adopted State Water Board Enforcement Policy. And, consistent with the Enforcement Policy, the State and/or Regional Water Boards must consider the Enrollee's efforts to contain, control, and mitigate SSOs when considering the California Water Code Section 13327 factors. In assessing these factors, the State and/or Regional Water Boards will also consider whether:
- (i) The Enrollee has complied with the requirements of this Order, including requirements for reporting and developing and implementing a SSMP;
 - (ii) The Enrollee can identify the cause or likely cause of the discharge event;
 - (iii) There were no feasible alternatives to the discharge, such as temporary storage or retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, collecting and hauling of untreated wastewater to a treatment facility, or an increase in the capacity of the system as necessary to contain the design storm event identified in the SSMP. It is inappropriate to consider the lack of feasible alternatives, if the Enrollee does not implement a periodic or continuing process to identify and correct problems.
 - (iv) The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of the Enrollee;
 - (v) The discharge could have been prevented by the exercise of reasonable control described in a certified SSMP for:
 - Proper management, operation and maintenance (O&M);
 - Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent SSOs (e.g., adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow (I/I), etc.);
 - Preventive maintenance (including cleaning and fats, oils, and grease (FOG) control);
 - Installation of adequate backup equipment; and
 - Inflow and Infiltration prevention and control to the extent practicable.
 - (vi) The sanitary sewer system design capacity is appropriate to reasonably prevent SSOs.
 - (vii) The Enrollee took all reasonable steps to stop and mitigate the impact of the discharge as soon as possible.
7. When a SSO occurs, the Enrollee shall take all feasible steps and necessary remedial actions to 1) control or limit the volume of untreated or partially treated wastewater discharged, 2) terminate the discharge, and 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water.

The Enrollee shall implement all remedial actions to the extent they may be applicable to the discharge and not inconsistent with an emergency response plan, including the following:

- (i) Interception and rerouting of untreated or partially treated wastewater flows around the wastewater line failure;
- (ii) Vacuum truck recovery of SSOs and wash down water;
- (iii) Cleanup of debris at the overflow site;
- (iv) System modifications to prevent another SSO at the same location;

-
- (v) Adequate sampling to determine the nature and impact of the release; and
 - (vi) Adequate public notification to protect the public from exposure to the SSO.
8. The Enrollee shall properly, manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the Enrollee, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities.
 9. The Enrollee shall allocate adequate resources for the operation, maintenance, and repair of its sanitary sewer system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures. These procedures must be in compliance with applicable laws and regulations and comply with generally acceptable accounting practices.
 10. The Enrollee shall provide adequate capacity to convey base flows and peak flows, including flows related to wet weather events. Capacity shall meet or exceed the design criteria as defined in the Enrollee's System Evaluation and Capacity Assurance Plan for all parts of the sanitary sewer system owned or operated by the Enrollee.
 11. The Enrollee shall develop and implement a written SSMP and make it available to the State and/or RWQCB upon request. A copy of this document must be publicly available at the Enrollee's office and/or available on the Internet. This SSMP must be approved by the Enrollee's governing board at a public meeting.
 12. In accordance with the California Business and Professions Code sections 6735, 7835, and 7835.1, all engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. Specific elements of the SSMP that require professional evaluation and judgments shall be prepared by or under the direction of appropriately qualified professionals, and shall bear the professional(s)' signature and stamp.
 13. The mandatory elements of the SSMP are specified below. However, if the Enrollee believes that any element of this section is not appropriate or applicable to the Enrollee's sanitary sewer system, the SSMP program does not need to address that element. The Enrollee must justify why that element is not applicable.

Note: The mandatory elements and associated WDR section and due dates in Table 0-2 below are applicable to the City of Roseville.

Table 0-2. Sewer System Management Plan Time Schedule	
Mandatory Elements and Associated WDR Section	Due Date
Application for Permit Coverage Section C (this is complete)	November 1, 2006
Reporting Program Section G	September 1, 2007
SSMP Development Plan and Schedule No specific section (this is complete)	August 1, 2007
Goals and Organizational Structure Section D 13 (i) and (ii)	November 1, 2007
Overflow Emergency Response Program Section D 13 (vi)	November 1, 2008
Legal Authority Section D 13 (iii)	November 1, 2008
Operations and Maintenance Program Section D 13 (iv)	November 1, 2008
FOG Control Program Section D 13 (vii)	November 1, 2008
Monitoring, Measurement and Program Modification Section D 13 (ix)	May 1, 2009
SSMP Audits Section D 13 (x)	May 1, 2009
Communication Program Section D 13 (xi)	May 1, 2009
Final SSMP	May 1, 2009

SEWER SYSTEM MANAGEMENT PLAN

1. GOALS

1.1 WDR/SSMP Goal Requirement

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

1.2 Roseville Goals

The City's WWC Division has established seven goals to guide the development, 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 General Waste Discharge Requirement (GWDR) 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. Minimize the frequency of SSOs.
5. Mitigate the impacts that are associated with all SSOs that may occur.
6. Comply with all applicable regulatory notification and reporting requirements.
7. Maintain high design and construction standards for new and rehabilitated infrastructure.

1.3 Appendix A – Development Plan and Schedule

Appendix A includes the following:

A-1 Roseville's SSMP Development Plan and Implementation Schedule

SEWER SYSTEM MANAGEMENT PLAN

2. ORGANIZATION

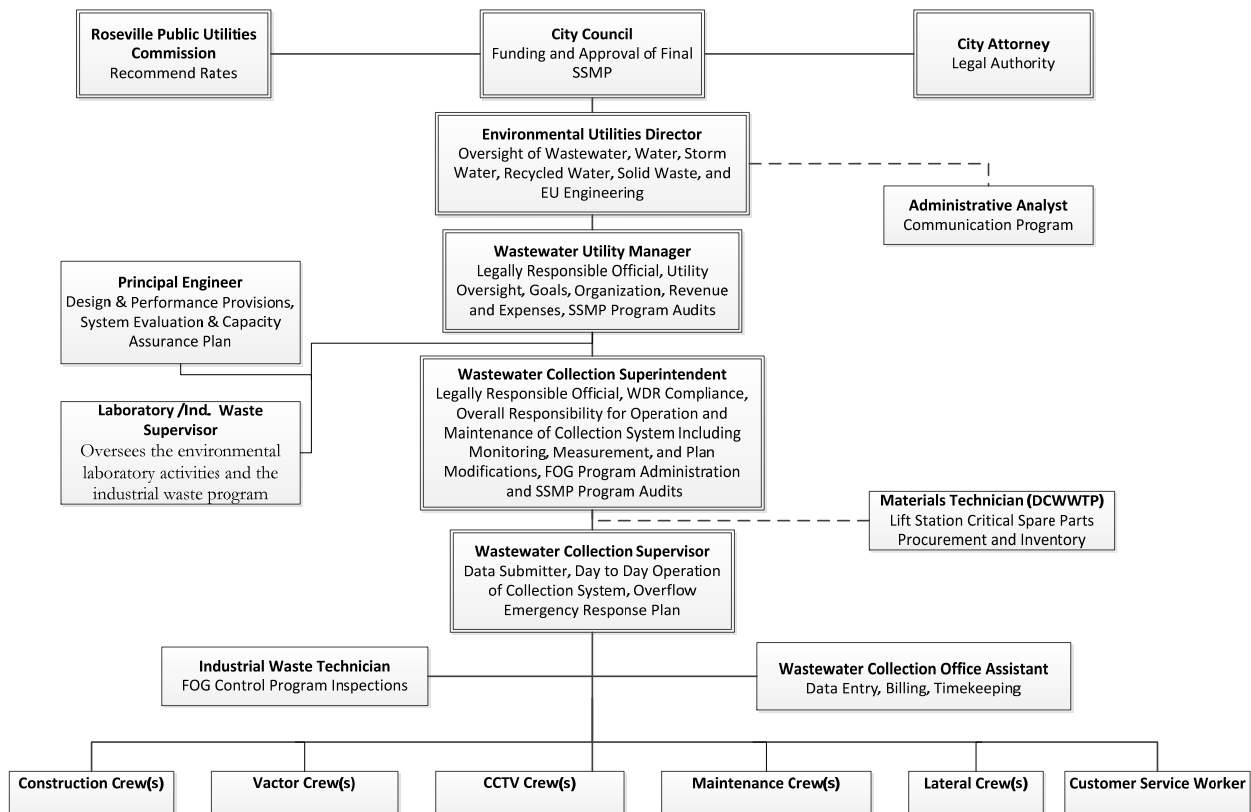
2.1 WDR/SSMP Organization Requirement

The WDR/SSMP organization requirement specifies that each SSMP identify the following:

- The name of the agency’s responsible or authorized representative.
- The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and
- The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services [OES]).

2.2 SSMP Responsibility Organization Chart

The SSMP Responsibility Organization Chart for Roseville is illustrated in Figure 2-1.



SSMP Responsibility Organization Chart

Figure 2-1. SSMP Responsibility Organization Chart

General Position Description - SSMP Responsibilities:

- **City Council:** The City Council is the elected governing board of the City. Members are elected “at-large” through regular elections. The city, a municipal corporation and charter city, consists of all the territory within the boundaries thereof, and all territory outside the boundaries thereof over which it has jurisdiction or control by virtue of any constitutional or statutory provision.
- **Roseville Public Utility Commission:** The commission is appointed by the City Council which studies and advises the City Council on all utility issues related to city-owned utilities (electric, water, sewer, and solid waste). Issues include planning, rates, public information, complaints about rates or operations, and activities of utility joint powers agencies.
- **City Attorney:** Receives policy direction from the City Council and acts as legal advisor and counsel to the City Council, City Boards and Commissions, City Manager, and City departments and represents the City in litigation against the City.
- **Environmental Utilities Director:** The Environmental Utilities Department (EUD) Director is responsible to plan, organize, direct, and review the activities and operations of the EU Department. This includes the following 5 utilities: Wastewater, Water, Recycled Water, Solid Waste, and Storm Water along with the Business Services Division and Environmental Utilities (EU) Engineering.
- **Wastewater (WW) Utility Manager:** Is the legally Responsible Official(LRO) in the WDR. Has overall responsibility for the management and oversight of the entire WW Utility. Oversees revenue and expenses, along with operation and maintenance of the WW Treatment Plants and WWC system for the City.
- **Principal EU Engineer:** Is responsible to oversee the EUD’s rehabilitation program and capacity assurance of the wastewater collection system.
- **Lab/Industrial Waste Supervisor:** Oversees the environmental laboratory activities and the industrial waste program, and prepares regulatory compliance reports.
- **WWC Superintendent:** Is the Legally Responsible Official (LRO) in the WDR. Overall responsibility for the operation and maintenance of the WWC system in the City boundary. Oversees the WWC budget to ensure expenses are within plan along with overseeing the content and management of the Computerized Maintenance Management System (CMMS) used by the City for the WWC System. Implements and oversees Fats Oils and Grease (FOG) Control Program
- **WWC Supervisor:** Data submitter. Is responsible for the day-to-day operation of the wastewater collection system, supervision of the WW Utility Maintenance Workers in the areas of Construction, Closed-Circuit Television (CCTV) and system cleaning with our Vactor crews. Ensures that Work Orders are produced, completed, and closed-out, and ensures the integrity of the CMMS data.
- **Industrial Waste Technician:** Performs outreach, inspection, data management and monitoring for FOG compliance at the City’s food service establishments
- **Administrative Analyst:** Is responsible for the EU Department’s outreach to the community, rate payers, and stakeholders. Prepares materials, manages outside consultants and interfaces with City’s Communication Manager.
- **WWC Office Assistant:** Answers and dispatches customer calls, generates and closes out customer service requests and work orders. Acts as a receptionist to interact with the general public, maintains statistical records and tabulates data; receives two-way radio calls; secures and records information and uses radio to dispatch necessary city services.
- **Customer Service Representative:** Responds to customer calls and mitigates any main line/service line blockages that could possibly result in a SSO and does Underground Service Alerts (USA) work, locating and marking underground utilities. The customer service response time goal is 20 minutes. .

- Senior WW Utility Maintenance Worker: Responsible to ensure that the crews carry out the work assigned to them by the WWC Supervisor. Each of the following crews is assigned to a Senior WW Utility Maintenance Worker: Construction, Maintenance, and Annual Rehabilitation Projects.
- WW Utility Maintenance Worker I and Maintenance Worker II -: Responsible to carry out tasks and duties assigned by the WWC Supervisor and Senior WW Utility Maintenance Worker. Performs the CCTV inspections, sewer cleaning and testing, and sewer lift stations and pump station maintenance.

2.3 Chain of Communication Reporting Chart

Figure 2-2 illustrates WWC Divisions overflow emergency response plan chain of communication.

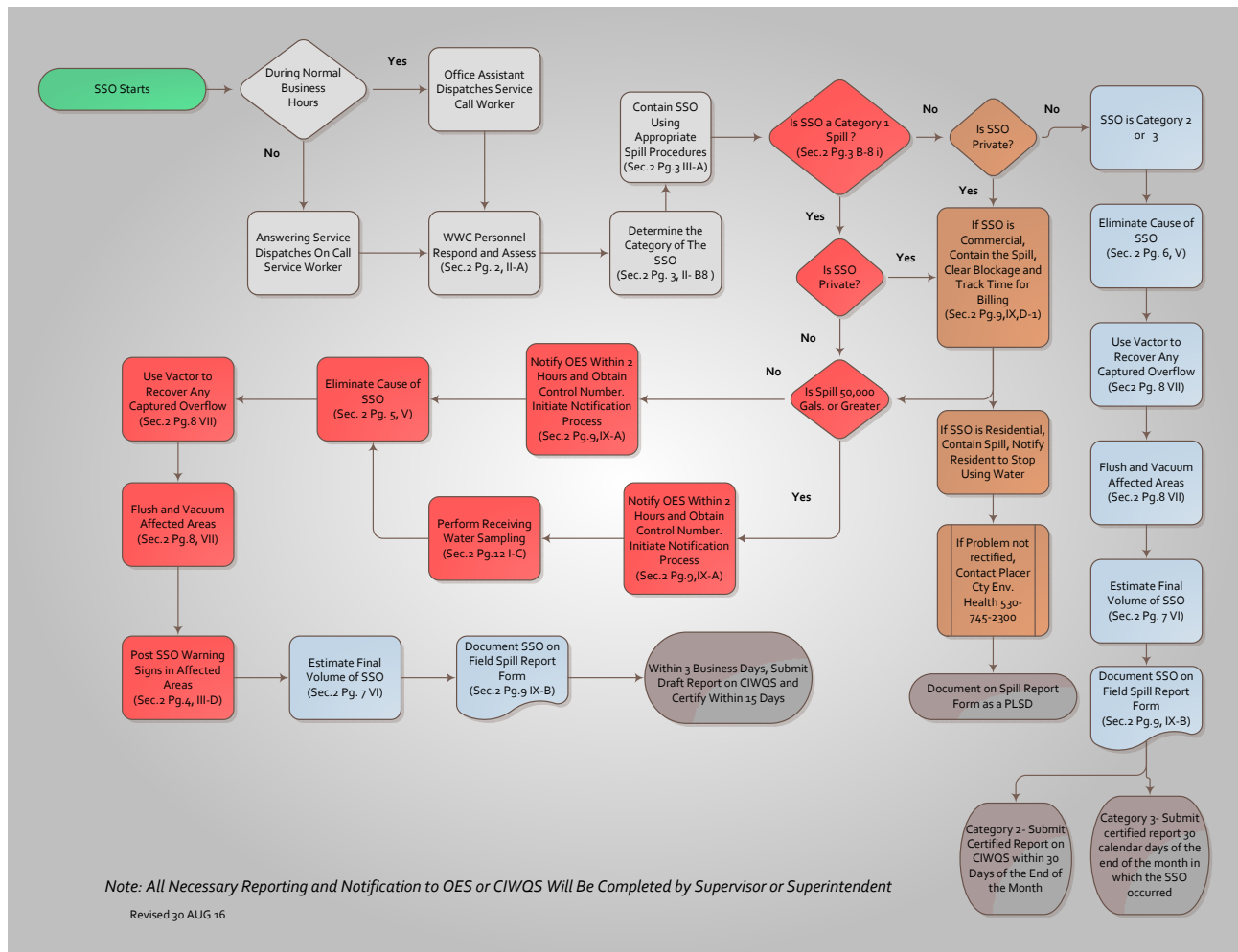


Figure 2-2. OERP Plan Chain of Communication

2.4 Appendix B – Organization Documents

Appendix B includes the following:

- B-1 Contact List – Personnel Responsible for SSMP Elements
- B-2 Contact List – Personnel Responsible for SSO Reporting
- B-3 Contact List – Personnel Responsible for Responding to SSOs Weekly Standby

SEWER SYSTEM MANAGEMENT PLAN

3. LEGAL AUTHORITY

3.1 WDR/SSMP Legal Authority Requirement

The WDR/SSMP Legal Authority requirement specifies that each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

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

3.2 Industrial Pretreatment Program

The following is an overview the Industrial Pretreatment program:

The 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 (IWD) of the EUD administers the ERP. 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.

3.3 Municipal Code and Design and Construction Standards

The municipal code section 14.12.040 provides the following authority to establish building sewers and connection requirements:

14.12.040 Building Sewers and Connections.

The City of Roseville's municipal code states that the connection of the building sewer into the public sewer shall conform to the requirements of the building and plumbing code or other applicable rules and regulations of the City. All connections shall be made gas-tight and water-tight. A cleanout shall be installed at the point of connection with the public sewer. The cleanout shall be in an approved box and shall be easily accessible. The building sewer and cleanout shall be maintained by the owner.

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.

3.4 Municipal Code – Sewer Access Authority

The Charter in the municipal code provides the following authority to access City owned and operated sewers and related facilities:

Charter - Article X. Municipally-Owned Utilities
Sec. 10.01. General Powers Respecting Utilities

The City shall possess all the powers granted to cities by state law to construct, condemn and purchase, 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; and also to sell and deliver any of the utility services above mentioned outside its corporate limits, to the extent permitted by state law. 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. (Amended by general municipal election on November 7, 2000.)

3.5 Municipal Code – FOG

The municipal code section 14.12.050 provides the following authority to require grease interceptors:

14.12.050 Use of Public Sewers

The City of Roseville's municipal code section 14.12.050 use of public sewers, Subsection F, states that Grease, oil and grit interceptors shall be provided when, in the opinion of the director, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, grit or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the director and shall be located as to be readily and easily accessible for cleaning and inspection.

14.14 Discharges of Fats, Oils and Grease From Food Service Establishments

Roseville's City Council adopted a new FOG ordinance on September 8, 2008. (See appendix G2)

3.6 Municipal Code – Enforcement Authority

The municipal code section 14.12.060 provides the following authority to penalize violators of the City's code requirements:

14.12.060 Violation – Penalty

- A. Violation of the provisions of this chapter may be charged as either an infraction or a misdemeanor, in the discretion of the city attorney.

- B. Any person violating any of the provisions of this chapter shall be liable to the city for any expense, loss or damage occasioned the city by reason of such violation.

(Ord. 2324 § 1, 1990: Ord. 1298 § 1, 1975: prior code § 20.35.)

3.7 Inter-Agency Agreements and Satellite Systems

The following agreements to address regional and satellite systems are currently in effect:

▪ **Joint Exercise of Powers Agreement for the South Placer Wastewater Authority**

The purpose of this agreement is to provide for planning, financing, acquisition, ownership, construction and operation of Regional Wastewater Facilities.

▪ **Agreement Regarding the Operation and use of the South Placer Regional Wastewater Facilities**

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.

• **Wastewater Service by Contract and Operating Agreement between SRCSD, SASD and City of Roseville**

The intent of the agreement is to meet regulatory requirements and to provide a consistent manner in which the operation, maintenance, financial and ownership responsibilities are defined

3.8 Appendix C – Legal Authority Documents

Appendix C includes the following:

- C-1 Pretreatment Program Enforcement Response Plan - TOC
- C-2 Municipal Code Title 14 Public Utilities Chapter 14.12 and 14.16 <http://qcode.us/codes/roseville/>
- C-3 Sanitary Sewer Design - Section 9 – TOC
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2382>
- C-4 Sanitary Sewer System Construction - Section 91 – TOC
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2405>
- C-5 Joint Exercise of Powers Agreement for the South Placer Wastewater Authority
- C-6 Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities
- C-7 Wastewater Service Agreement by Contract and Operating Agreement between SASD, SRCSD and City of Roseville

SEWER SYSTEM MANAGEMENT PLAN

4. OPERATION AND MAINTENANCE ACTIVITIES

4.1 WDR/SSMP Operation and Maintenance Program Requirement

The WDR/SSMP Operation and Maintenance Program requirement specifies that each SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:

- (a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;
- (b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;
- (c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and television inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;
- (d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and
- (e) Provide equipment and replacement part inventories, including identification of critical replacement parts.

4.2 Roseville Collection System Maps

The WWC Division maps are maintained and managed in the following manor:

- The WWC Division maintains electronic and hard copy up-to-date maps of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities. The grid map in Appendix D-1 encompasses all sewer shed basins within the City of Roseville's jurisdictional boundaries.
- Electronic copies of the system maps are accessible in the City's GIS and hard copies are located in the various Utility department offices and field crew trucks.
- Maps are updated as new sub-divisions are accepted; internal staff makes repairs, rehabilitates or replaces components of the system that require updating of the maps. An SOP has been developed to address procedures that ensure mapping is correct and completed in GIS.

4.3 Roseville Preventive Operations & Maintenance Activities

Overview – Collection System and Responsibility

- The City's WWC Division is a division of EUD. The overall responsibility of the WWC Division is the management, O&M of the City's sanitary sewer collection system, which includes inspecting, cleaning, repairing and monitoring the gravity sewer lines, force mains and lift stations.
- The City's Street Department operates and maintains the storm drain system, which consists mainly of road drainage receivers, pipes and ditches.
- The City's service area is approximately 43.09 square miles. The wastewater collection division provides service to approximately 134,073 customers in its service area. There are approximately 505 miles of sewer mains, 256 miles of sewer laterals, 42,000 services, and 15 neighborhood lift stations. The City maintains the portion of the service laterals from property line to the mainline in the street.
- The City operates and maintains two Regional Wastewater Treatment plants. Sanitary sewerage is conveyed through its collection system by shed basins from the east boundaries of the City to the Dry Creek Wastewater Treatment Plant and the north and west boundaries to the Pleasant Grove Wastewater treatment plant. Sewer Maintenance operations include cleaning, televising, repairing, replacing, and monitoring the sanitary sewer system. The WWC division, including office staff, employs 30 full time employees. The WWC division is broken down by crews and work responsibilities.

Cleaning Program

- The WWC Division has maintenance and cleaning programs to keep the sanitary sewer system operating efficiently and to minimize the number of main line stoppages and calls for service. Sewer cleaning using hydraulic or mechanical methods performed on a routine basis helps to remove accumulated debris in the pipe such as sand, silt, grease, roots, and rocks.
- The WWC Division has dedicated three full time cleaning crews. The Collection division has an up-to-date map of the collection system. The map is broken into grids. Each grid is set up for scheduled maintenance into a CMMS based on past history. As the grids come up for scheduled maintenance or cleaning, each crew is assigned to one of the grids in the city. A cleaning crew typically consists of a WW Utility Maintenance Worker 2 and a WW Utility Maintenance Worker 1, Supervised by the WWC Supervisor. Crews use combination high-pressure and vacuum sewer jet trucks and a trailer mounted mechanical Eel.

Sewer Inspection

- The WWC Division has two dedicated full time inspection crews. A CCTV inspection crew typically consists of one WW Utility Maintenance Worker 2 and a Wastewater Utility Maintenance Worker 1, Supervised by the WWC Supervisor. The inspection data is gathered electronically and is up-loaded into the CMMS. Preventative maintenance is set up from the data gathered.
- Inspections of the sanitary sewer system are a routine and essential duty for the WWC Division crews. Regular inspections can help troubleshoot and minimize problems with the collection system. Connections to the system and unwanted sources of inflow are identified through sewer inspections. CCTV inspection crews also inspect new infrastructure as it is accepted into the City, as well as time of warranty acceptance. As part of the sewer cleaning process, crews inspect and report on any problems or deficiencies within the sanitary sewer system. Such items included in the inspection are:

1. Visual Inspections

Visual inspections are performed on the sewer system manholes at a higher frequency than CCTV inspections because of the relative ease of performance. This type of inspection can give a good indication as to the condition and proper functioning of the collection system and generally includes:

A. Manhole Inspection

- Frame and cover
- Grade adjustments
- Flow surcharging
- Manhole bottom channels
- Structural integrity/manhole degradation
- I/I into manhole
- Other miscellaneous problems

B. Sewer Inspection

- Dirt and stone brought back while cleaning
- Abnormal amount of debris in line
- Excessive amounts of grease in line
- Blockage or obstruction in line
- Excessive flow (relative to upstream flows)
- Any miscellaneous problems

Any of the above items would result in further study of the sewer and include CCTV inspection, sewer repair, or manhole repair. Field crews have the authority to write up anything they deem to be a problem or potential problem to the sewer system.

2. CCTV Inspection

- Requested by cleaning crew because of a suspected problem
- In connection with I/I investigation work
- Condition assessment for justifying sewer rehabilitation work
- Routine check on the effectiveness of sewer cleaning
- Sewer inspection prior to street overlay projects
- Inspection of sewer stubs for further development
- Inspection and acceptance of new infrastructure

Maintenance

- The WWC Division has maintenance programs and schedules to minimize the number of service line stoppages, lift station failures, and calls for service.
- There are full time employees dedicated to maintenance of services lines, minor manhole repairs, and neighborhood lift station. There are typically two crews. Crews typically consist of one WW Utility Maintenance Worker 2 and a WW Utility Maintenance Worker 1 supervised by a Senior WW Utility Maintenance Worker. These crews perform the following duties:
 - Routine maintenance and inspection of lift stations
 - Rehabilitation of service lines using trenchless technology (CIPP Lining)
 - Mechanically cleaning and CCTV inspection of services

- Mechanically cleaning mains
- Manhole repair and coating
- Coating of Ductile Iron pieces and repairs
- Prep D.I. transition pieces
- Traffic control setup on an as needed basis
- Confined space entry on an as needed basis
- Application of chemical root control
- Installing cleanouts

Construction/Repair

- The WWC Division construction crew performs routine and emergency repairs on the City's sewer infrastructure.
- Repair work includes sanitary sewer replacements, spot repairs, lateral, and service tap replacements, manhole repairs and manhole replacements. Construction crews replace main line sections from manhole to manhole when the condition assessment dictates the need. Since the inception of the SSMP, the WWC Division has made great strides in getting the sewer system structurally secure and is currently concentrating on a condition assessment and replacement of the aging infrastructure.

Rehabilitation Projects

- In addition to our normal repair work, the Utilities division is committed to doing one or two sanitary sewer rehabilitation projects each year. These rehabilitation projects are generated off of historical data contained in the CMMS related to the condition of the sewers, as well as feedback from our CCTV inspection and Hydro crews, the subject matter experts in the field.
- The objective of all rehabilitation work is to improve the structural integrity, restore the hydraulic capacity of pipes, and the reduction of I/I into the sanitary sewer system.

Customer Service

The WWC Division has one full time employee dedicated to customer service. This position is generally staffed by a WW Utility Maintenance Worker 2. The primary job is to respond to customer calls and is the first responder to mitigate any main line or service line blockages that could possibly result in a SSO and perform USA duties. The customer service response time goal is 40 minutes during business hours and after hour's service calls.

Staff Support

- The WWC Division field operation is supported by a full time Office Assistant I/II. The duties of this position include answering and dispatching customer calls; generating and closing out customer service request and work orders. Acts as a receptionist to interact with the general public, maintains statistical records and tabulates data; receives two-way radio calls; secures and records information and uses radio to dispatch necessary city services.

Industrial Waste Technician

- Maintain, inspect and enforce the City's Fats Oils and Grease program as it relates to Food Service Establishments.

4.4 Rehabilitation and Replacement Plan

The WWC Division has created the following rehabilitation and replacement plan:

The WWC Division's Condition Assessment and Capital Improvement Plan divides the City's collection system manholes and pipes into 24 "groups" that will be inspected over a period of time. In 2006, the first group of pipes and manholes was inspected and included in the Rehabilitation and Replacement plan. The plan includes identification of defects utilizing standardized manhole and pipe inspection logs. The NASSCO rating system is utilized for rating of defects. Once each pipe/manhole is inspected, it is assigned a rating score that includes factors for the probability of failure and the criticality of the asset (risk assessment). Pipes/manholes with high scores are included in the rehabilitation/replacement plan which evaluates the appropriate action needed, the anticipated cost and a schedule for implementation.

4.5 Training

The WWC Division has established the following training requirements:

- The WWC Division requires that all collection system personnel except entrance level WW Utility Maintenance Worker (trainee) have a California Water Environment Association (CWEA) Collection System Operator certification at a level appropriate to their job responsibilities and to maintain that certification they must complete 12 hours of continuing training every two years. The test for the required CWEA certification ensures that employee that hold these certification do possess the knowledge, skills and abilities to skillfully perform the collection system operator duties. See CWEA website http://www.cwea.org/pdf/tcp/hb_csm.pdf for most current requirements.
- The WWC Division has SOPs for SSO response and mitigation, backhoe operation, sewer cleaning equipment, and locating and marking USA.
- Employee safety
 - Hold weekly safety meetings and maintain sign-in log.
 - Hold daily tailgate safety meetings.
 - Present safe practice reminder at all meetings, including learning opportunities
 - Hold monthly wastewater safety committee meetings.
 - Maintain compliance of OSHA safety rules.
 - All vehicles are stocked with a gas detector.
 - Annual training on all SOPs
 - Review Safety Data sheets (SDS) for new chemicals used.
- Employee certifications and training
 - Annual training and testing on Sanitary Sewer Overflow Emergency Response Plan
 - Employees to receive and renew job specific certifications for DMV, CPR, and First Aid, as required.
 - Employees shall be knowledgeable of and annually trained in the Confined Space Policy including hands on Non-Entry Rescue..

- Employees annually trained in trench shoring and excavation, as well as trench permit documentation.
- Employees shall be knowledgeable of and re-trained in the Gas Detector Use Policy, annually.

4.6 Equipment and Critical Replacement Parts

The WWC Division's equipment and critical replacement parts inventory lists are located in Appendix D. Critical spare parts inventory and re-order levels are maintained by Materials Technician at Dry Creek WWTP

4.7 Appendix D – Operation and Maintenance Program Documents

Appendix D includes the following:

- D-1 City of Roseville Sewer Map Grid System
- D-2 Maintenance Cleaning Schedule
- D-3 CCTV Video Report
- D-4 SOP
- D-5 CWEA Certification Handbook, http://www.cwea.org/pdf/tcp/hb_csm.pdf
- D-6 Equipment Inventory List
- D-7 Critical Replace Parts List
- D-8 Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan (Element IVC)
- D-9 Mapping Update Policy

SEWER SYSTEM MANAGEMENT PLAN

5. DESIGN AND PERFORMANCE PROVISIONS

5.1 WDR/SSMP - Design and Performance Provisions Requirement

The WDR/SSMP Design and Performance Provision requirement specifies that each Enrollee have the following:

- (a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and
- (b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

5.2 Sanitary Sewer Design and Specifications

The City's sewer design and specification are located on the internet and the following is an overview of those requirements:

The City's Design standards Section 9 Sanitary Sewer design and Construction Standards Section 91 Sanitary Sewer System Construction were reviewed by Brown and Caldwell and determined to meet the full intent of the WDR/SSMP requirements. Both the Design and Construction Standards are available on the City's website.

The purpose of the City Design Standards is to provide direction in the application of improvements which are to be dedicated to the public and accepted by the City for maintenance or operation, and to provide for coordinated development of those facilities to be used by and for the protection of the public. This includes certain private works, as well as improvements to be installed within existing City rights-of-way and easements. Whereas it is the intent of these Standards to govern all new construction, City staff shall interpret and apply the Standards in a manner which 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 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 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 in order 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.

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 Standard Specifications.

5.3 Sanitary Sewer System Construction and Performance Provisions

The City's construction standards are located on the City's internet and the following is an overview of those requirements:

Section 91-12 of the City's Sanitary Sewer Construction Standards defines the criteria for testing of installed sewer improvements. It states that sewer pipe and fittings shall be installed in accordance with Roseville's Construction Standards and as recommended by the manufacturer. The Construction Standards and manufacturer's guidelines shall be present at the construction site at all times.

All sewer mains, services, manholes and appurtenances are tested; Sewer mains and services are air tested and CCTV inspected by EUD after installation of the joint trench utility crossings and sub-grade elevations have been met. CCTV inspections are performed by the EUD, Wastewater Division. Costs for inspections are borne by the Contractor. Preliminary inspections may be performed by outside contractors, but are not accepted by EUD as an official record.

The sewer system shall be completely cleaned by an approved method prior to CCTV inspection. Sewer manholes are vacuum tested. After the sewer manholes have been raised and finished to grade, the sewer system shall be final ball-and-flushed in the presence of a EUD Inspector.

When all improvements are substantially complete, the contractor shall provide a written request for a punch-list inspection of the improvements. Sewer mains, services, manholes and appurtenances shall be repaired per these Construction Standards. 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 the Construction Standards.

5.4 Appendix E – Design and Performance Provisions Documents

Appendix E includes the following:

- E-1 Table of Contents – Section 9 – Sanitary Sewer Design
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2382>
- E-2 Table of Contents - Section 91 – Sanitary Sewer System construction
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2405>
- E-3 Technical Memorandum, SSMP Preparedness Audit Design and Performance Provisions Element V

6. OVERFLOW EMERGENCY RESPONSE PLAN

6.1 WDR/SSMP Overflow Emergency Response Plan Requirement

The WDR/SSMP Overflow Emergency Response Plan requirement specifies that each Enrollee shall develop and implement an Overflow Emergency Response Plan (OERP) that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

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

6.2 Notification Procedures

The WWC Division SSO notification procedures are as follows: SSO notification procedures are contained in the WWC Division's sanitary sewer overflow procedures manual, and a copy is located in the on call vehicle. The procedures are in a three ring binder and are available to all WWC personnel responsible for responding to SSOs, mitigating SSOs and reporting SSOs. The organizational response plan and chain of communication chart are located in Section 2 and the complete written response plan including names and contact information is located in Appendix F-1. Whenever SSO procedure updates are necessary they are made and a revised date is placed on each page of the procedure. This helps to ensure timely SSO response, migration and reporting. Figure 6-2 illustrates WWC Division's SSO notification procedures.

IF SSO	AND...	NOTIFY...
<p>discharges of a 1,000 gallons or greater to surface water or spilled in a location where it will probably be discharged to a surface water, shall, as soon as possible, but no later than two (2) hours after becoming aware of the discharge</p>	<p>ONE CALL (OES) →</p>	<p>(All numbers use area code 916 unless otherwise noted)</p> <p>WWC Supervisor – Dan Pruden (Wk) 746-1891, (Cell) 580-5600 WWC Superintendent- Chris Bracco (Wk) 746-1892, (Cell) 223-7771</p> <p>The individual(s) notified above is/are responsible for notifying the following:</p> <ul style="list-style-type: none"> Wastewater Utility Manager- Ken Glotzbach (Wk) 774-5754, or 300-8714 OES - 1-800-852-7550 Obtain control number, complete field spill report form <p><u>Additional Numbers for Reference</u> Placer County Environmental Health 1-530-745-2300 Regional Water Quality Control Board :</p> <ul style="list-style-type: none"> Kari Holmes – (Wk) 916-464-4623 : Kari.Holmes@waterboards.ca.gov Mohammed Farhad – (Wk) 916-464-1181: MFarhad@waterboards.ca.gov <p>California Department of Fish and Wildlife – 445-0045 Option #2</p>
	<p>Will affect American River →</p>	<p>Notify:</p> <ul style="list-style-type: none"> Fairbain Water Treatment Plant 916-808-3120
	<p>Will affect Sacramento River →</p>	<p>Notify:</p> <ul style="list-style-type: none"> Sacramento River Water Treatment Plant 916-808-4961 or City Operator 916-264-5011
	<p>Enters structure and requires clean-up</p>	<p>Notify:</p> <ul style="list-style-type: none"> Normal Business Hours- Contact Risk Management 774-5202 After Hours, Weekends or Holidays- Dave Rawe- Risk Manager @ 209-613-9448

Figure 6-1. Regulatory Agency Notification

6.3 Response Program

The WWC Division has established and implemented the following SSO response plan:

The WWC Division has developed procedures for responding to SSOs. The purpose of these procedures is to ensure that all SSO responses are handled efficiently and effectively and that all regulatory requirements are met. Collection Systems Division staff is required to know and follow these procedures. These procedures are summarized in Figure 6-2 below.

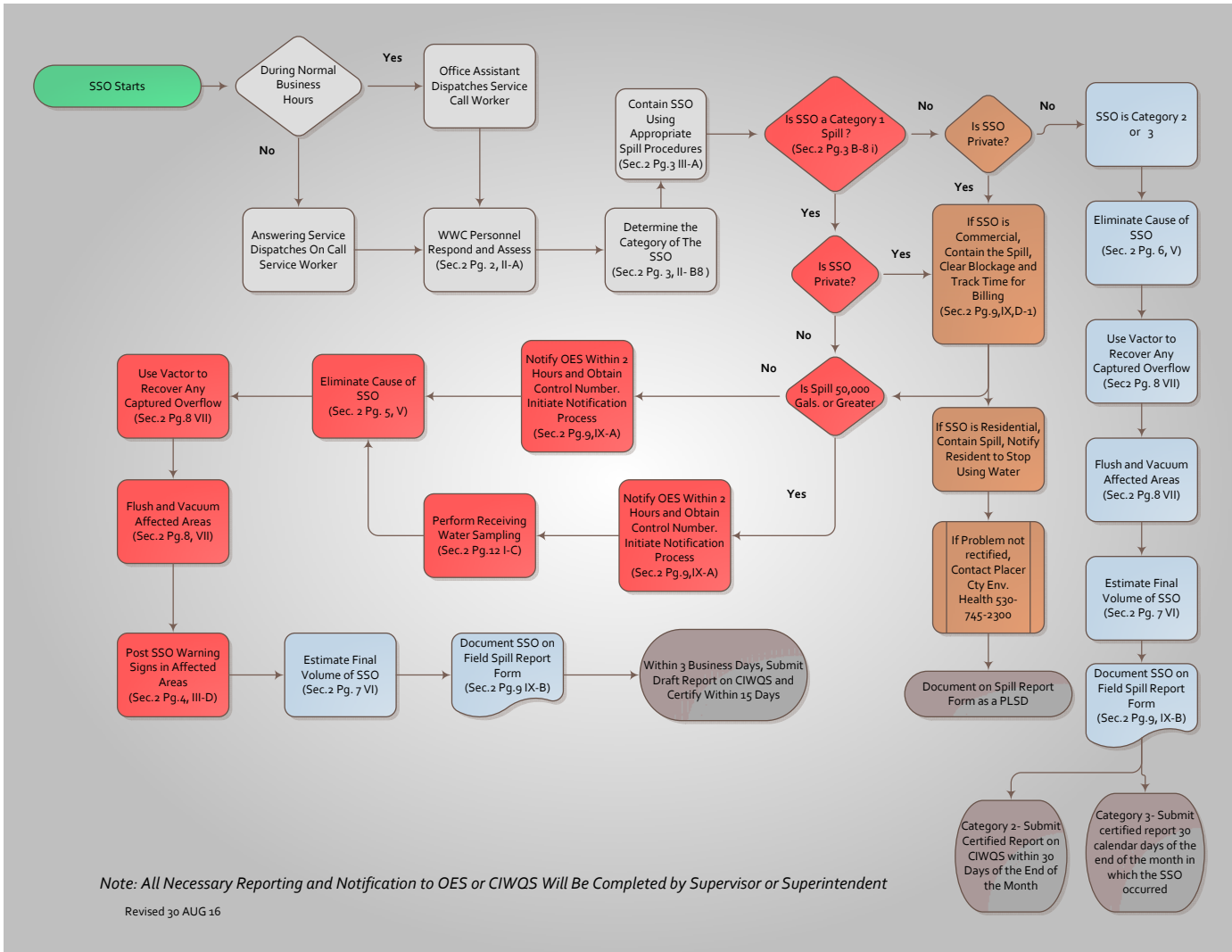


Figure 6-2. SSO Procedures Flow Chart

6.4 Regulatory Notification Procedure

The WWC Division has established and implemented the following notification procedures:

The WWC Division Superintendent and Utility Manager are the legally responsible officials (LRO) to certify SSO reports that have been submitted to SWRCB data base. Both the WWC Superintendent and the WWC

Supervisor are responsible for reporting SSO to the SWRCB, RWQCB, OES and Placer Environmental Health Department as necessary.

6.5 Staff and Contractors Training

The WWC Division has established and implemented the following SSO response training:

WWC Division employees are required to complete SSO response procedures training and periodically throughout the year, spill response is covered in the weekly safety tailgate meetings. In addition, all SOPs are reviewed and trained on throughout the year. Changes to the SOPs are completed during this time if needed.

Contractors are provided with the City's wastewater collection system policies and procedures and per contract are required to train all of their employees on the City's wastewater collection system policies and procedures prior to performing work on the City's wastewater collection and conveyance system.

6.6 Emergency Response Coordination

The WWC Division has established and implemented the following emergency response coordination training:

WWC Division 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.

6.7 Spill Mitigation and Containment Procedure

The WWC Division has written an OERP and has created a SOP for spill mitigation and containment plan that is described in Figure 6-2 SSO Procedures Flow Chart.

6.8 Appendix F - Overflow Emergency Response Plan Documents

Appendix F includes the following:

- F-1 Sanitary Sewer Overflow Response Procedures
- F-2 WWC Division Required Training
- F-3 WWC Division Recommended Training -Tail Gate Meeting
- F-4 Standard Operating Procedures (SOP) for Spill Mitigation and Containment

SEWER SYSTEM MANAGEMENT PLAN

7. FOG CONTROL PROGRAM

7.1 WDR/SSMP – FOG Control Program Requirement

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

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

7.2 Public Education Plan

The WWC Division has established the following public education outreach plan:

The WWC Division is initiating a comprehensive FOG outreach program to residents, restaurants and the plumbing community on the proper disposal of FOG. This program will include TV spots, flyers direct mail and site visits to food service establishments.

Objective: 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, and FOG Control Program adopted in May 2006.

Strategy: Conduct a multi-media public awareness and marketing campaign to meet objective by utilizing the following tactics (attached). Target audience is Roseville residents and restaurants.

The residential campaign uses a main message that is present on all ad and collateral pieces. Depending upon topic and audience segment, sub-messages will be tailored to fit with main message. All material will contain a web link reference www.livesewersmart.com to direct audience members to more information.

The restaurant campaign will incorporate more technical and specific information needed to comply with WDR. The messages in this campaign will be distributed directly (direct targeted mailing and/or site visits) as this audience segment is less voluntary than the residential segment (i.e. restaurants are obligated to comply and enforcement is easier in cases of non-compliance, whereas the residential audience is harder to reach and we are relying on them to incorporate behavioral changes to help comply with WDR).

7.3 FOG Disposal Plan

The Wastewater Collection Division has created the following FOG disposal plan as part of the Waste Discharge Permit 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.

7.4 Record Keeping Requirements

The Wastewater Collection Division has created the following record keeping requirements:

The Permittee shall, upon request, make the manifests, receipts and invoices available to any City representative, or inspector. The minimum records requirements are 1, 2, and 3 below and may include 4, 5, and 6:

1. A logbook of grease interceptor, grease trap or grease control device cleaning and maintenance practices.
2. Copies of records and manifests of waste hauling interceptor contents.
3. Records of sampling data and sludge height monitoring for FOG and solids accumulation in the grease interceptor.
4. A record of Best Management Practices being implemented including employee training.
5. Records of any spills and/or cleaning of the lateral or sewer system.
6. Any other information deemed appropriate by the EU Director to ensure compliance with these regulations.

7.5 Legal Authority to Prohibit SSOs and Blockages Caused by FOG Discharges

The municipal code section 14.12.050 provides the following authority to establish grease interceptor requirements:

14.12.050 Use of Public Sewers

The City of Roseville's municipal code section 14.12.050 use of public sewers, Subsection F, states that Grease, oil and grit interceptors shall be provided when, in the opinion of the director, they are

necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, grit or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the director and shall be located as to be readily and easily accessible for cleaning and inspection.

(Ord. 1298 § 1, 1975: prior code § 20.34.)

The Wastewater Collection Division has written a FOG ordinance and was added to Roseville's Municipal Code. It was passed and adopted by the council of the City of Roseville on September 3, 2008: Section 14.14 Discharge of FOG from Food Service Establishments (FSE). The Purpose and Policy of the FOG ordinance includes;

- A. The purpose of these regulations is 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 FOG to the sewer facilities, and to specify appropriate FOG discharge requirements for FSE.
- B. This Ordinance shall be interpreted in accordance with the definitions set forth in Section 1.2. The provisions of this Ordinance shall apply to the direct or indirect discharge of all wastewater or waste containing FOG carried to the sewer facilities of the City.
- C. To comply with Federal, State, and local policies and to allow the City to meet applicable standards, provisions are made in this Ordinance for the regulations of wastewater or waste containing FOG discharges to the sewer facilities.
- D. This Ordinance establishes quantity and quality standards on all wastewater and/or waste discharges containing FOG, which may alone or collectively cause or contribute to FOG accumulation in the sewer facilities causing or potentially causing or contributing to the occurrence of SSOs.

7.6 BMP, Grease Removal Devices, Recordkeeping, and Reporting Requirements

The Wastewater Collection Division has included the following FOG BMPs, removal device, record keeping, and reporting requirements in the proposed addendum:

Requirements for BMPs:

- A. All FSEs shall implement BMPs in accordance with the requirements and guidelines established by the City under its FOG Control Program in an effort to minimize the discharge of FOG to the sewer system.
- B. All FSEs shall be required, at a minimum, to comply with the BMPs set forth in the terms and conditions of the FOG WDP.

Grease Interceptor Requirements:

- A. All FSEs shall provide wastewater acceptable to the City, under the requirements and standards established herein before discharging to any public sewer. Any FSE required providing FOG pretreatment shall install, operate, and maintain an approved type and adequately sized grease interceptor necessary to maintain compliance with the objectives of this Ordinance.
- B. Grease interceptor sizing and installation shall conform to the current edition of the Uniform Plumbing Code. Grease interceptors shall be constructed in accordance with the design approved by

the EU Director and shall have a minimum of two compartments with fittings designed for grease retention.

- C. The grease interceptor shall be installed at a location where it shall be at all times easily accessible for inspection, cleaning, and removal of accumulated grease.
- D. Access manholes, with a minimum diameter of 24 inches, shall be provided over each grease interceptor chamber and sanitary tee. The access manholes shall extend at least to finished grade and be designed and maintained to prevent water I/I. The manholes shall also have readily removable covers to facilitate inspection, grease removal, and wastewater sampling activities.
- E. Specific record keeping requirements are specified in 7.6 record keeping and reporting requirements.

7.7 Inspection and Enforcement Authority – FOG Producers

The Wastewater Collection Division has included the following criteria in the proposed addendum:

- All FSEs proposing to discharge or currently discharging wastewater containing FOG into the City's sewer system shall obtain a FOG WDP from the City.
- FOG WDPs shall be expressly subject to all provisions of this Ordinance and all other regulations, charges for use, and fees established by the City. The conditions of FOG WDPs shall be enforced by the City in accordance with this Ordinance and applicable State and Federal Regulations.
- A blank inspection form is attached as Appendix G-4

7.8 FOG Characterization Assessment and Hot Spot Cleaning Schedule

The WWC Division has completed a FOG characterization assessment and has established the following hot spot cleaning schedule:

The WWC Division identified all of the commercial and industrial FOG dischargers within their jurisdictional boundaries during the SSMP preparedness review/audit and listed them in the data collection form. FOG data is form Appendix G.

FOG hot spot location data is maintained in the WWC Division's CMMS and quarterly work orders are issued and completed to ensure that hot spot lines do not have grease blockages/SSOs between cleaning schedules. Mainline segments get added to the Hot Spot list based off of conditions noted during CCTV inspection, and current frequency of cleaning. CCTV and maintenance crews are relied on heavily for information coming from the field.

7.9 FOG Control Program Measures

The Wastewater Collection Division has established the following FOG Waste Discharge Permit (WDP) Conditions in the proposed addendum:

The issuance of a FOG WDP may contain any of the following conditions or limits:

- (a) Limits on discharge of FOG and other priority pollutants.
- (b) Requirements for proper O&M of grease interceptors and other grease control devices.
- (c) Grease interceptor maintenance frequency and schedule.

- (d) Requirements for implementation of BMPs.
- (e) Requirements for maintaining and reporting status of BMPs.
- (f) Requirements for maintaining and submitting logs and records, including waste-hauling records and waste manifests.
- (g) Requirements to self-monitor.
- (h) Requirements for the FSE to construct, operate and maintain, at its own expense, FOG control device, and sampling facilities.
- (i) Additional requirements as otherwise determined to be reasonably appropriate by the EU Director to protect the City's system or as specified by other Regulatory Agencies.
- (j) Other terms and conditions, which may be reasonably applicable to ensure compliance with this ordinance.

7.10 Appendix G – FOG Control Program Documents

Appendix G includes the following:

G-1 Fats, Oils, and Grease (FOG) Characterization Data Form

G-2 Roseville Municipal Code - Section 14.14 Discharges of Fats, Oils, and Grease from Food Service Establishments (FSEs)

G-3 Hot Spot Cleaning Schedule

G-4 Food Service Establishment Inspection Form

8. SYSTEM EVALUATION, CAPACITY, AND ASSURANCE PLAN

8.1 WDR/SSMP - System Evaluation and Capacity Assurance Plan Requirement

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

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

8.2 Evaluation Process – Capacity Enhancement Projects

The WWC Division has performed the following capacity enhancement projects:

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). The Roseville model included pipes and pump station in the City's WWC system. The SPWA model primarily included trunk sewers 15 inches and greater in diameter. The Roseville model project consisted of developing and calibrating a model for the WWC Division use in evaluating the system. The SPWA Wastewater Systems Evaluation Project included a model and a hydraulic capacity evaluation. The hydraulic capacity evaluation identified hydraulic deficiencies and recommended improvements

8.3 Design Criteria

The WWC Division has established and implemented the following design criteria:

The WWC Division established a 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.

8.4 Capacity Enhancement Measures

The WWC Division has established the following capacity enhancement measures:

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.

The Roseville Model Project did not identify any capacity deficiencies. Therefore, there are no capacity CIPs needed.

8.5 Capital Improvement Program Schedule

The WWC Division has established and implemented the following CIP schedule:

The WWC Division Condition Assessment CIP divides the collection system manholes and pipes into 24 “groups” that are being inspected over a period of time. The plan includes identification of defects utilizing standardized manhole and pipe inspection logs. The NASSCO rating system was used for rating of defects.

Rehabilitation and repair costs are based largely on the unit costs for recently executed projects utilizing applicable rehabilitation techniques and from the Survey of Bid Prices for Trenchless Rehabilitation and Replacement of Pipelines and Manholes Report published by the Trenchless Technology Center (TTC). And Construction and Rehabilitation Costs for Buried Pipe with a Focus on Trenchless Technology published by the National Research Council (NRC), and prices obtained from individual licensees and installers.

The goal of the CIP is to develop annual project bundles of approximately \$1.5 million. Using the prioritization based on pipe segment rating as a basis, the CIP prioritization includes one additional factor, street repairs. In order to minimize disruption to newly paved streets, those streets that the City anticipates to repair during the 2007/2008 fiscal year were given highest priority.

The WWC Division has scheduled repair, rehabilitation and replacement project starting 2006/2007 through 2011/2012 with an estimated cost of \$11,498,309. Subsequent condition assessments will be performed and the CIP will be adjusted after each assessment as follows:

- Emergency repairs will be done immediately and will not be included in the CIP.
- Priority will be given to those assets which lie in a street to be paved such that the repair is done prior to 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 2006 assessment would be given priority over a 4 from the 2005 assessment.

8.6 Appendix H - System Evaluation and Capacity Assurance Plan Documents

Appendix H includes the following:

- H-1 Technical Memorandum-SSMP Audit System Evaluation and Capacity Assurance Plan (Element VIII)
- H-2 Technical Memorandum-Wet Weather Flow Projection for the Ultimate SPWA Service Area (including Urban Growth Areas) -- Draft (TM No. 2c)
- H-3 Technical Memorandum-Trunk Sewer Hydraulic Analysis - Final (TM No. 3b)
- H-4 Wastewater Condition Assessment April 6, 2006 – Powerpoint Presentation
- H-5 Capital Improvement Plan (CIP) Roseville Wastewater Collection System Condition Assessment

SEWERY SYSTEM MANAGEMENT PLAN

9. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATION

9.1 WDR/SSMP – Monitoring, Measurement, and Program Modification Requirement

The WDR/SSMP Monitoring, Measurement, and Program Modification requirement specifies that each Enrollee shall do the following:

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

9.2 Utility Metrics to Prioritize SSMP Activities

The WWC Division has established the following Utility metrics:

The WWC Division has established four categories of metrics to monitor and measure the effectiveness of the various elements of this SSMP and its success in terms of meeting its goals. Those metrics include the following categories of metric information:

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

9.3 Metrics to Monitor Effectiveness of SSMP

The WWC Division has established the following SSMP implementation schedule:

The WWC Division's SSMP implementation schedule assigns individual staff responsibility for each SSMP element and defines the frequency that each element must be monitored and updated to ensure that the goals of this SSMP are achieved. This schedule is included in Appendix I-1

9.4 Metrics to Assess Preventative Maintenance Program

The WWC Division has established the following preventative maintenance sewer metrics:

The WWC Division uses sewer maintenance metrics to monitor and measure and adjust maintenance program activities. These metrics are maintained in the CMMS and monitored on a monthly, quarterly, semi-annual, and annual basis. The goal of the WWC Division is to reduce the number and volume of SSOs identified in Table 1 of the Historical Summary of Sanitary Sewer Overflows in Appendix I-3. The sewer maintenance measures include the following metrics and the performance measures identified in 9.6 SSO Trends-Frequency, Location, and Volume.

Total miles cleaned per year	miles
Independent manhole inspections	How often
Number of laterals rehabilitated using CIPP	#
Total miles of mechanical root control	miles
Total miles CCTV inspected per year	miles
Total number of sewer maintenance field staff	#
Average cost of sewer mechanical cleaning	\$/ft Loaded rates
Average cost of CCTV	\$/ft
Number of cleanouts installed annually	

9.5 SSMP Performance Monitoring and Update Process

The WWC Division has established the following monitoring process:

The WWC Division's SSMP implementation schedule assigns individual staff responsibility for each SSMP element and defines the frequency that each element must be monitored and updated to ensure that the goals of this SSMP are achieved.

9.6 SSO Trends – Frequency, Location and Volume

The WWC Division has established the following performance monitoring process:

The WWC Division uses performance metrics to monitor and measure and adjust maintenance program activities. These metrics are maintained in the CMMS and monitored on a monthly, quarterly, semi-annual and annual basis. The Key Performance Indicator Metrics has been attached as Appendix I-4

9.7 Appendix I - Monitoring, Measurement, and Program Modifications Documents

Appendix I includes the following:

- I-1 WWC Division SSMP Implementation Schedule
- I-2 WWC Division Fiscal Year System Information, Financial Information, Sewer Maintenance and Performance Measures
- I-3 Historical Summary of Sanitary Sewer System Overflows

- I-4 KPI Benchmarking Metrics Sheet

SEWER SYSTEM MANAGEMENT PLAN

10. PROGRAM AUDIT AND ANNUAL REPORT

10.1 WDR/SSMP - SSMP Program Audits Requirement

The WDR/SSMP - SSMP Program Audits requirement specifies that each Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.

10.2 Audit Procedures, Roles and Responsibilities

The WWC Division has established the following audit procedure:

The WW Utility Manager will perform periodic internal audits to determine the effectiveness of each element of the SSMP.

The WWC Superintendent will generate the following information and system metrics on a monthly, quarterly, semi-annually, and annually for the purpose of tracking, monitoring and adjusting the performance of the SSMP activities.

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

A primary focus in the evaluation of WWC Division information and system metrics will be the elimination of preventable SSO and reduction of the impact of those SSOs that do occur.

The WWC Division audit schedule is as follows:

- Annually for the first two years following the adoption and approval of this SSMP.
- Every two years thereafter the adoption and approval of this SSMP.
- This SSMP will be updated every five years from the date of adoption and approval and will include all significant program changes that have occurred following the last City Council certification/approval.

10.3 SSMP Program Modification/Update Process

The WWC Division has established the following program modification and update process:

The WWC Division will monitor and review sewer performance metrics on a monthly basis and the status of each element of the SSMP on an annual basis for the first two years following the adoption of this SSMP. Formal SSMP audits will be conducted every two years following the adoption of this SSMP. The Wastewater Utility Manager will initiate/direct corrective action to be taken when and if SSMP deficiencies are identified between/during periodic internal audits.

When significant changes are made to the SSMP that require re-certification, the WWC Superintendent will enter the data in the online SSO database and mail the form to the State Water Board.

10.4 Appendix J - SSMP Program Audit Documents

Appendix J includes the following:

- J-1 Procedures for Audit Form
- J-2 Audit Form
- J-3 SSMP Internal Audit FY 10-11
- J-4 SSMP Audit FY 11/12 – FY 12/13
- J-5 SSMP Audit FY 13/14 – FY 14/15

SEWER SYSTEM MANAGEMENT PLAN

11. COMMUNICATION PROGRAM

11.1 WDR/SSMP - Communication Program Requirement

The WDR/SSMP Communication Program requirement specifies that each Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

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

This element requires that the City/Agency establish a program to communicate with the public and tributary/satellite systems on the development, implementation and performance of this SSMP. The program must provide a means for public input and feedback regarding the status of the City/Agency's SSMP. As part of the communication program the final SSMP must be approved by the City/Agency's City Council at a public meeting.

11.2 Internal Communication – Staff, Utility Commission, and City Council

The WWC Division has created the following power point presentations to educate the City Council, Public Utility Commission, and Staff:

The WWC Division has created two power point presentations to introduce the SWRCB WDR/SSMP requirements and the City of Roseville's responsibility to comply with the Statewide WDR order No. 2006-0003. The WWC Division WDR awareness program is an overview for staff and the Sanitary Sewer Systems Regulations/WDR presentation is used to educate the Public Utilities Commission and the City Council.

11.3 Stakeholder Communication – Residential, Commercial and Industrial

The WWC Division has created the following SSMP educational material for public outreach:

The EUD publishes a newsletter every two months called "EU Today" to communicate with customers and stakeholders about water, storm, electric, and sewer utilities. EU Today is distributed in the utility bills and posted on the City's website. The WWC Division is expanding use of the City's web-site to present WDR/SSMP requirements and program status to residential, commercial, industrial and public stakeholders. Sample "EU Today" newsletters are included in Appendix K.

The WWC Division is initiating a comprehensive FOG outreach program to residents, restaurants and the plumbing community on the proper disposal of FOG. This program will include television spots, flyers direct mail and site visits to food service establishments.

11.4 Tributary/Satellite Communication

The WWC Division has created and implemented the following agreement to ensure adequate communication with tributary/Satellite agencies:

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 that include the following:

- The Joint exercise of powers agreement for the SPWA – Appendix C.
- The agreement regarding the operation of and use of the South Placer Regional Wastewater Facilities – Appendix C.
- The funding agreement relating to the South Placer Regional Wastewater Facilities – Appendix K.

11.5 Appendix K - Communication Program Documents

Appendix K includes the following:

- K-1 WWC Division WDR Awareness Program Powerpoint Presentation
- K-2 Sanitary Sewer Systems Regulations/Waste Discharge Requirement Powerpoint Presentation (PUC/City Council)
- K-3 Two “EU Today” Newsletters Preventing FOG in the Pipes and Not Flushing Medications Down the Sewer
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=4223>
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=5058>
- K-4 FOG Outreach Program - Marketing Objective and Strategy
- K-5 Funding Agreement Relating to the South Placer Regional Wastewater Facilities

SEWER SYSTEM MANAGEMENT PLAN

12. LIMITATIONS

Report Limitations

This document was prepared solely for the City of Roseville in accordance with professional standards at the time the services were performed and in accordance with the contract between the City of Roseville and Brown and Caldwell dated July 19, 2006. This document is governed by the specific scope of work authorized by the City of Roseville; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by the City of Roseville and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

APPENDIX A

SSMP Development Plan and Schedule

Appendix A includes the following:

A-1 Roseville's SSMP Development Plan and Implementation Schedule

APPENDIX B

Organization Documents

Appendix B includes the following:

- B-1 Contact List -Personnel Responsible for SSMP Elements
- B-2 Contact List - Personnel Responsible for SSO Reporting
- B-3 Contact List –Personnel Responsible for Responding to SSOs Weekly Standby

APPENDIX C

Legal Authority Documents

Appendix C includes the following:

- C-1 Pretreatment Program Enforcement Response Plan - TOC
- C-2 Municipal Code Title 14 Public Utilities Chapter 14.12 and 14.16 <http://qcode.us/codes/roseville/>
- C-3 Sanitary Sewer Design - Section 9 – TOC
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2382>
- C-4 Sanitary Sewer System Construction - Section 91 – TOC
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2405>
- C-5 Joint Exercise of Powers Agreement for the South Placer Wastewater Authority
- C-6 Agreement Regarding the Operation and Use of the South Placer Regional Wastewater Facilities

APPENDIX D

Operation and Maintenance Program Documents

Appendix D includes the following:

- D-1 City of Roseville Sewer Map Grid System
- D-2 Maintenance Cleaning Schedule
- D-3 Closed Circuit Television Video Report
- D-4 Standard Operating Procedure (SOP)
- D-5 CWEA Certification Handbook, http://www.cwea.org/pdf/tcp/hb_csm.pdf
- D-6 Equipment Inventory List
- D-7 Critical Replace Parts List (to be included at a later date)
- D-8 Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan (Element IVC)

APPENDIX E

Design and Performance Provisions Documents

Appendix E includes the following:

- E-1 Table of Contents – Section 9 – Sanitary Sewer Design
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2382>
- E-2 Table of Contents - Section 91 – Sanitary Sewer System construction
<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=2405>
- E-3 Technical Memorandum, SSMP Preparedness Audit Design and Performance Provisions Element V

APPENDIX F

Overflow Emergency Response Documents

Appendix F includes the following:

- F-1 Sanitary Sewer Overflow Response Procedures
- F-2 WWC Division Required Training (\gis\euadm\safety\injury_and_illness_prevention_plan)
- F-3 WWC Division Recommended Training -Tail Gate Meeting
- F-4 Standard Operating Procedures (SOP) for Spill Mitigation and Containment

APPENDIX G

FOG Control Program Documents

Appendix G includes the following:

- G-1 Fats, Oils, and Grease (FOG) Characterization Data Form
- G-2 Addendum to Roseville Municipal Code - Section 14.12.xxx Discharges of Fats, Oils, and Grease from Food Service Establishments (FSEs)
- G-3 Hot Spot Cleaning Schedule

APPENDIX H

System Evaluation and Capacity Assurance Plan Documents

Appendix H includes the following:

- H-1 Technical Memorandum-SSMP Audit System Evaluation and Capacity Assurance Plan (Element VIII)
- H-2 Technical Memorandum-Wet Weather Flow Projection for the Ultimate SPWA Service Area (including Urban Growth Areas) -- Draft (TM No. 2c)
- H-3 Technical Memorandum-Trunk Sewer Hydraulic Analysis -- Final (TM No. 3b)
- H-4 Wastewater Condition Assessment April 6, 2006 – Powerpoint Presentation
- H-5 Capital Improvement Plan (CIP) Roseville Wastewater Collection System Condition Assessment

APPENDIX I

Monitoring, Measurement, and Program Modifications Documents

Appendix I includes the following:

- I-1 WWC Division SSMP Implementation Schedule
- I-2 WWC Division Fiscal Year System Information, Financial Information, Sewer Maintenance, and Performance Measures
- I-3 Historical Summary of Sanitary Sewer System Overflows

APPENDIX J

SSMP Program Audit Documents

Appendix J includes the following:

- J-1 Procedure for Audit Form
- J-2 Audit Form

APPENDIX K

Communication Program Documents

Appendix K includes the following:

- K-1 WWC Division WDR Awareness Program Powerpoint Presentation
- K-2 Sanitary Sewer Systems Regulations/Waste Discharge Requirement Powerpoint Presentation (PUC/City Council)
- K-3 Two “EU Today” Newsletters Preventing FOG in the Pipes and Not Flushing Medications Down the Sewer
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<http://www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=5058>
- K-4 FOG Outreach Program - Marketing Objective and Strategy
- K-5 Funding Agreement Relating to the South Placer Regional Wastewater Facilities