



McCloud Community Services District

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SPECIAL MEETING OF THE POLICY REVIEW COMMITTEE

Scout Hall – 405 E. Colombero Drive

Tuesday, October 16, 2018 – 5:00 p.m.

- 1) **Discussion of** Policy 3401 - Sanitary Sewer System Management Plan (SSMP).
- 2) **Discussion of** future agenda items.
- 3) Adjourn

MCS D Mission Statement

McCloud Community Services District will strive to provide the full range of municipal services, at a reasonable cost applied consistently to all customers, while maintaining a healthy infrastructure and environmental integrity.

McCLOUD COMMUNITY SERVICES DISTRICT
Policy and Procedure Manual

Policy Title: Sanitary Sewer System Management Plan (SSMP)
Policy Number: 3401
Adopted: May 23, 2011
Reviewed: September 12, 2018
Amended: February 14, 2014

**McCloud Community
Services District
(MCSD)**

**Policy 3401
Sewer System Management Plan**

Document Version Control

Revisions to this document require approval by the MCSD Board of Directors. Minor changes such as names, phone numbers etc. may be made without Board approval. These changes will be noted by strikethrough of the existing information and addition of the new information in a red font. When a major change is made, all existing minor changes will be incorporated into the document.

SSMP Change History	Summary of Changes	Date
SSMP Adopted by the MCSD Board	To provide a consistent, statewide regulatory approach to address SSOs, the State Water Resources Control Board (State Water Board) adopted Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems, Water Quality Order No. 2006-0003 (Sanitary Sewer Systems WDR) on May 2, 2006. The Sanitary Sewer Systems WDR requires public agencies that own or operate sanitary sewer systems to develop and implement sewer system management plans and report all SSOs to the State Water Board's online SSO database.	
Revision A		

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Introduction

Background

This Sewer System Management Plan (SSMP) has been prepared in compliance with the State Water Resources Control Board (SWRCB) Order 2006-0003, Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems, as adopted by the SWRCB on May 2, 2006. The WDRs prohibit sanitary sewer overflows (SSOs) and requires the reporting of SSOs using the statewide electronic reporting system.

System Description

McCloud is an unincorporated area of Siskiyou County along highway 89, 10 miles east of the City of Mt. Shasta. The town has a population of approximately 1300 which is served by the McCloud Community Services District (MCSD). The district service area encompasses 1425 acres providing water, sewer, roads, park, library, street lights, and trash services.

Historically the community and infrastructure was owned and built by the McCloud Lumber Company. The sewer infrastructure was built from the 1930s to the 1950s using whatever materials were at hand. MCSD has owned and operated the waste water collection system for the town since 1966. In 2000, the town undertook a project to rebuild the system at a cost of 11 million dollars.

The waste water collection system is gravity fed (no lift stations). The system rebuild was completed in January 2006 and consists of the following elements

1. 10.91 miles (57,600 linear feet) of 6 to 14 inch mains
2. 711 laterals (the Schreder Project consists of an additional 84 laterals and the Hurley project which is off the MCSD main consists of 9 laterals)
3. 140 manholes

Today the collection system complies with California Standards for waste water collection. This document provides a management program for operating and maintaining this system.

ELEMENT 1. Goals

Requirement: Each wastewater collection system agency shall, at a minimum, develop goals for the Sewer System Management Plan as follows:

- To properly manage, operate, and maintain all parts of the wastewater collection system
- To provide adequate capacity to convey peak flows
- To minimize the frequency of SSOs
- To mitigate the impact of SSOs

This section is applicable to all wastewater collection systems.

1.1. Introduction

This element of the SSMP identifies goals the District has set for the management, operation and maintenance of the McCloud Community Services Waste water collection system.

1.2. The District's SSMP Goals

1. To properly manage, operate, and maintain all parts of the District's sanitary sewer system to provide reliable and uninterrupted service 99% of the time.
2. Provide adequate service for the District, to convey peak flows and reduce annual inflow and infiltration in the collection system
3. Minimize the frequency of SSOs to less than twelve per year
4. Mitigate the impacts associated with any SSO that may occur.
5. To meet all applicable regulatory notification and reporting requirements.

ELEMENT 2 Organization

Requirement: Each wastewater collection agency shall, at a minimum, provide information regarding organization:

- Identify agency staff responsible for implementing, managing, and updating the SSMP
- Identify chain of communication for responding to SSOs
- Identify chain of communication for reporting SSOs

This section is applicable to all wastewater collection systems.

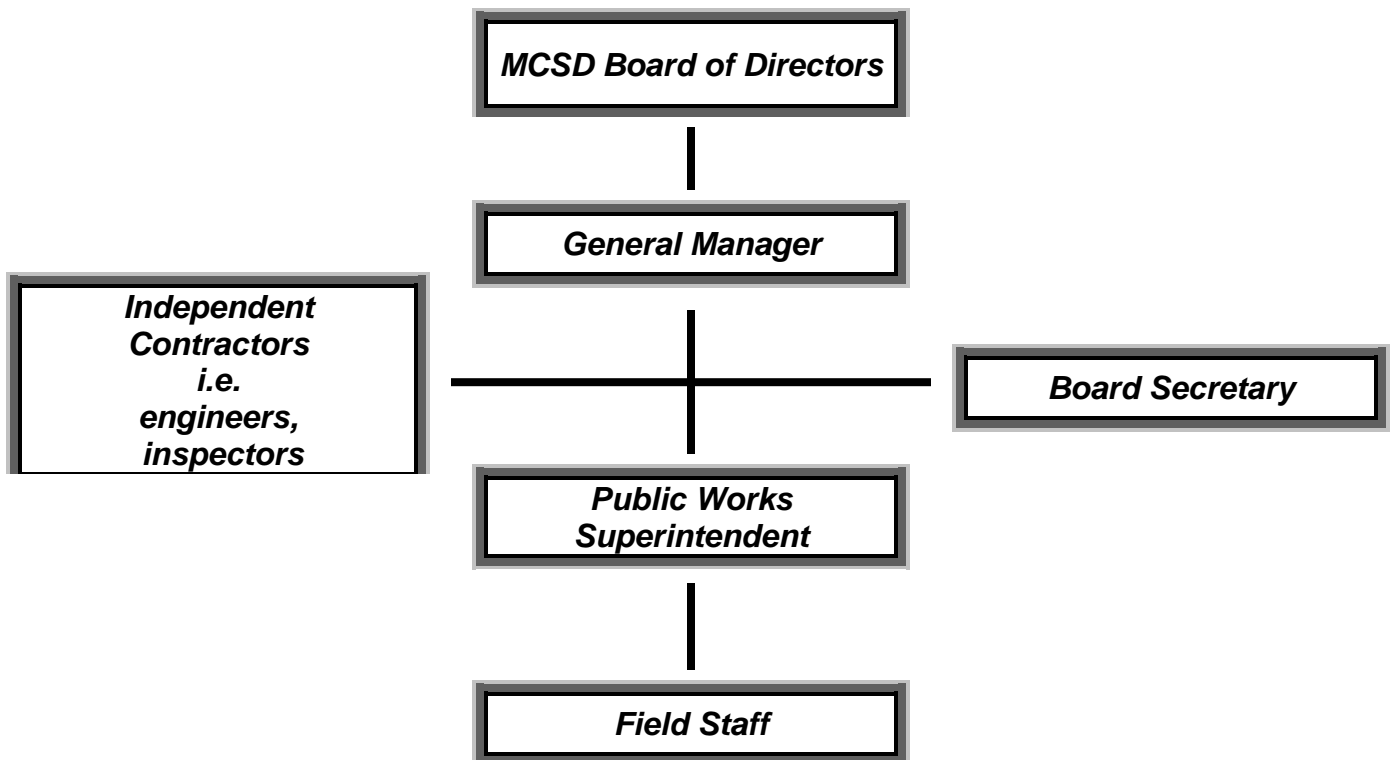
2.1. Introduction

This element of the SSMP identifies District staff responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements.

2.2. Organization

The organization chart for the management, operation, and maintenance of the District’s sanitary sewer system is shown on Figure 2-1.

Figure 2-1 Organization Chart



General Manager– Establishes policy, plans strategy, leads staff, allocates resources, delegates responsibility, authorizes outside contractors to perform services, and serves as public information officer.

Independent Contractors – Contracts are awarded as needed for the preparation, planning, documentation, coordination, and inspection and implementation of new and rehabilitated assets.

Public Works Superintendent–Manages field operations and maintenance activities, provides relevant information to agency management, prepares and implements contingency plans, leads emergency response, investigates and reports SSOs, and trains field crews.

Field Crew – Staff preventive maintenance activities mobilize and respond to notification of stoppages and SSOs (mobilize sewer cleaning equipment, by-pass pumping equipment, and portable generators).

Board Secretary – Provides information updates to Board or District Council. Arranges for emergency meetings as needed. Works as needed on applicable permits, laws, and regulations; provides support to all parts of operation.

ELEMENT 3 Overflow Emergency Response Plan

Requirement: Each wastewater collection system agency shall develop an overflow emergency response plan with the following elements:

- Notification – Provide SSO notification procedures.
- Response – Develop and implement a plan to respond to SSOs.
- Reporting – Develop procedures to report and notify SSOs per SSO Monitoring and Reporting Program.
- Impact Mitigation – Develop steps to contain wastewater, to prevent overflows from reaching surface waters, and to minimize or correct any adverse impact from SSOs.

This section is applicable to all wastewater collection systems..

3.1. Introduction

The purpose of this Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to SSOs.

3.2. Goals

The District's goals with respect to responding to SSOs are:

- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO;
- Meet the regulatory reporting requirements; and
- Notify the public when a threat to public health exists.

3.3. SSO Detection

The processes that are employed to notify the District of the occurrence of an SSO include: observation by the public, receipt of an alarm, or observation by District staff during the normal course of their work.

3.3.1. Public Observation

Public observation is the most common way that the District is notified of blockages and spills. Contact information for reporting sewer spills and backups are in the phone book and on the District's website:

<http://www.ci.mcloudcsd.ca.us>. The working hours telephone number for reporting sewer problems is (530) 964-2017. The after hours telephone number is (530) 859-0379 (On-Call).

3.3.1.1. During Normal Work Hours

The District's regular working hours for the sewer crew is Monday through Friday from 7:00 a.m. to 4:00 p.m. except holidays. When a report of a sewer spill or backup is made, District Staff receives the call, takes the information from the

caller, fills out the first section of the Sewer Report Form, and communicates it to the Field Crew who responds to the site.

3.3.1.2. Outside Normal Work Hours

Contact the District On-Call Person at-(530) 859-1904 See Appendix – A for additional contacts.

3.3.2. Receipt of Alarm

The District maintains a SCADA system at the sewer ponds.

3.3.3. District Staff Observation

District Staff conduct periodic inspections of the sewer system facilities as part of their routine activities. Any problems noted with the sewer system facilities are reported to appropriate District personnel who, in turn, respond to emergency situations.

3.4. SSO Response Procedures

Sewer service calls are considered high priority events that demand a prompt response. Emergency contact information is included in Appendix 3-A.

3.4.1. First Responder's Role

- To protect public health, environment and property from sewage spill events and restore area back to normal as soon as possible.
- To establish perimeters and control zones with traffic cones, barricades, vehicles or terrain.
- To promptly identify major SSO events and/or the need for additional resources (e.g. people, equipment, etc.).
- To contain and control the sewage discharged to the maximum extent possible.

Every effort must be made to prevent the discharge of sewage into waterways above and below ground.

3.4.2. First Responder Priorities

- Follow safe work practices.
- Respond promptly with the appropriate equipment.
- Contain the spill whenever feasible.
- Restore the flow as soon as practicable.
- Minimize public access to and/or contact with the spilled sewage.
- Promptly notify the Public Works Superintendent in event of major SSO.
- Return the spilled sewage to the sewer system.
- Restore the area to its original condition (or as close as possible).

3.4.3. Safety

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer system work.

There may be times when District Staff responding to a sewer system event are not familiar with potential safety hazards peculiar to sewer system work. In such cases it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before starting the job.

3.4.4. Initial Response

All sewer system calls require a response to the reported location of the event in an attempt to minimize or eliminate an overflow. The first responder must respond to the reporting party, or site of the problem immediately and visually check for potential sewer stoppages or overflows.

The first responder should:

- Get a brief description of the nature of the problem from the caller. Determine appropriate response measures based on the circumstances and information provided by the caller (e.g. weather and traffic conditions, small back up vs. sewage flowing on the ground, etc.).
- If the situation requires, call the Superintendent (working hours) or the On-call Person (after hours) to call other Public Works employees to assist in the SSO response..
- Note arrival time, document conditions with photographs, contact caller if time permits.
- Verify the existence of a sewer system spill or backup.
- Regardless of whether the spill/backup is caused by a private lateral or other agency sewer system, the responding crew should always contain/mitigate the spilled sewage to the extent feasible and standby until representatives of the responsible party arrive and are fully operational.

3.4.5. Restore Flow

Relieve the stoppage as soon as possible by use of the appropriate equipment.

If addressing a stoppage, set up downstream of the blockage and hydro clean or rod upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not recur downstream.

If the blockage cannot be cleared within a reasonable time (15 minutes), or the sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact the Public Works Superintendent (working hours) or the On-call Person (after hours) or call other employees directly.

3.4.6. Initiate Spill Containment Measures

The first responder should attempt to contain as much of the spilled sewage as possible using the following steps:

- When a spill, leak, and/or overflow occurs, keep sewage from entering the storm drain system to the maximum extent practicable by covering or blocking storm drain inlets and catch basins, or by containing and diverting the sewage away from open channels and other storm drain facilities (using sandbags, inflatable dams, plastic mats, etc.).

- Determine the immediate destination of the overflowing sewage.
- Review sewer maps for possible temporary upstream flow diversion bypassing.
- Pump around the blockage/pipe failure.
- Dike/dam (or sandbag) the spill by building a temporary berm to collect the spilled sewage.
- If overflowing sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Modify these methods as needed to accommodate wet weather conditions where the feasibility of containment may be impacted by the quantity of storm water runoff.

3.5. Recovery and Clean Up

The recovery and clean up phase begins when the flow has been restored and the spilled sewage has been contained to the extent possible. The SSO recovery and clean up procedures are:

3.5.1. Water Quality Sampling and Testing

Water quality sampling and testing is required whenever 1,000 gallons or more of spilled sewage enters a surface water to determine the extent and impact of the SSO. The water quality sampling procedures are:

- The Utility Worker should collect samples. Samples should be collected as soon as possible after the discovery of the SSO event.
- For discharges into flowing water (e.g. rivers, creeks), the water quality samples should be collected from 100 feet upstream of the spill, from the spill area, and for 1,000 feet downstream of the spill at 100-foot intervals.
- For discharges into stationary water (e.g. lakes, ponds), the water quality samples should be collected from the spill area, and for 1,000 feet on either side of the spill at 100-foot intervals.
- A laboratory will analyze the results to determine the nature and impact of the discharge. Additional samples will be taken to determine when posting of warning signs can be discontinued. The basic analyses should include total coli form, fecal coli form, biochemical oxygen demand (BOD), dissolved oxygen, and ammonia nitrogen.

3.5.2. Public Notification

The public that may be at risk should be warned to avoid contact with sewage or sewage-contaminated water from an SSO may cause illness. The notification methods are described below.

Local agencies and individuals may need to be contacted as soon as possible, depending on the situation, including:

- Sheriff's Department to control traffic.
- Service District to close the areas such as parks and to mitigate impact on surface waters.
- Local residents who may be impacted by the sewage spill.

3.5.2.1. Sign Posting and Barricading

Post warning signs and block the contaminated areas with “Yellow Caution Tape” and barricades to keep vehicles and pedestrians away from contact with spilled sewage. Do not remove these until results of the lab tests show that the area is safe for human contact. A sample warning sign is included as Appendix 7-I.

Property, creeks, rivers, or beaches that have been contaminated as a result of an SSO should be posted at visible access locations until the risk of contamination has subsided to background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place.

3.5.2.2. Notification of Media

Major spills may warrant broader public notice. The General Manager of the MCSD will contact local media when significant areas may have been contaminated by sewage. The General Manager will maintain contact information for local media.

3.5.3. Estimate the Volume of Spilled Sewage

Use the methods outlined in Appendix 3-G to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos of the SSO site before and during the recovery operation.

3.5.4. Recovery of Spilled Sewage

Vacuum up or pump the spilled sewage and discharge it back into the sanitary sewer system.

3.5.5. Clean up and Disinfection

When disinfecting a sewage-contaminated area, take every effort to ensure that the disinfectant or sewage treated with the disinfectant is not discharged to the storm drain system or surface waters. Methods may include blocking storm drain inlets, containing and diverting disinfectant and sewage away from open channels and other storm drain fixtures, and removing the material with vacuum equipment.

Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Where clean up is beyond the capabilities of District staff, a cleanup contractor will be used.

3.5.5.1. Hard Surface Areas

- Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes, brooms or shovels.
- Wash down the affected area with clean water until the water runs clear.
- Take reasonable steps to contain and vacuum up the wastewater.
- Disinfect all areas that were contaminated from the overflow using the disinfectant solution of household bleach diluted 10:1 with water. Apply minimal amounts of the disinfectant solution using a hand sprayer.
- Document the volume and application method of disinfectant that was employed.

- Allow the area to dry. Repeat the process if additional cleaning is required.
- Do not apply disinfectant solution during wet weather conditions.

3.5.5.2. Landscaped and Unimproved Natural Vegetation

- Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes, brooms, and shovels.
- Wash down the affected area with clean water until the water runs clear. The flushing volume should be approximately three times the estimated volume of the spill.
- Either contain or vacuum up the wash water so that none is released.
- Allow the area to dry. Repeat the process if additional cleaning is required.
- Do not apply disinfectant solution to landscaped areas or unimproved natural vegetation.

3.5.5.3. Natural Waterways

The Department of Fish and Game should be notified in the event an SSO impacts any natural waterways. Fish and Game will provide the professional guidance needed to effectively clean up spills that occur in these sensitive environments.

Clean up should proceed quickly in order to minimize negative impact. Any water that is used in the cleanup process should be de-chlorinated prior to use.

3.5.5.4. Wet Weather Modifications

Omit flushing during heavy storm events with heavy runoff where flushing is not required.

3.5.6. Follow-Up Activities

If sewage has reached the storm drain system, the Combination Cleaning Unit should be used to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage.

In the event that an overflow occurs at night, the location should be re-inspected first thing the following day. The operator should look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

3.6. Failure Analysis Investigation

The objective of a failure analysis investigation is to determine the “root cause” of the SSO and to identify corrective action(s) needed that will reduce or eliminate future potential for the SSO to recur.

The investigation should include reviewing all relevant data to determine appropriate corrective action(s). The investigation should include:

- Reviewing and completing the Sewer Report Form.
- Reviewing past maintenance records.
- Reviewing available photographs.
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs.
- Interviewing staff who responded to the spill.

The product of the failure analysis investigation should be the determination of the root cause and the identification of the corrective actions. The Collection System SSO Analysis Form (Appendix 3-C) should be used to document the investigation.

3.7. SSO Categories

The SWRCB has established guidelines for classifying and reporting SSOs.

Reporting and documentation requirements vary based on the type of SSO.

There are three categories of SSOs as defined by the SWRCB:

- Category 1 - All discharges of sewage that:
 - (a) Have a volume of 1,000 gallons or more; or
 - (b) Result in a discharge to a drainage channel and/or surface water; or
 - (c) Discharge to a storm drain pipe that was not fully captured and returned to the sanitary sewer system.
- Category 2 - All other discharges of sewage
- Private Lateral Sewage Discharges - Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

3.8. SSO Documentation and Reporting

All SSOs should be thoroughly investigated and documented for use in managing the sewer system and meeting established reporting requirements. The procedures for investigating and documenting SSOs are:

3.8.1. Internal SSO Reporting Procedures

3.8.1.1. Category 1 SSOs

The first responder will immediately notify the Public Works Superintendent (working hours) or On-call Person (after hours) who will notify the General Manager.

The Public Works Superintendent or his/her designee will meet with field crew(s) at the site of the SSO event to assess the situation and to document the conditions with photos.

The first responder will fill out the Sewer Report Form and turn it in to the Public Superintendent Manager. The Public Works Superintendent will review the form for completeness and accuracy and will forward it in to the Legally Responsible Official (LRO).

In the event of a large overflow or an overflow in a sensitive area, Public Works Superintendent will notify the General Manager and the Board of Directors.

3.8.1.2. Category 2 SSOs

The first responder will fill out the Sewer Report Form and turn it in to the Public

Works Superintendent. The Public Works Superintendent will review the form for completeness and accuracy and will forward it in to the LRO.

3.8.2. External SSO Reporting Procedures

The California Integrated Water Quality System (CIWQS) electronic reporting system will be used for reporting SSO information to the SWRCB whenever possible.

3.8.2.1. Category 1 SSOs that reach Waters of the State

If a Category 1 SSO results in a discharge to waters of the State (a drainage channel or surface water, if not fully recovered), the following reporting requirements apply:

- **Within two hours** of being notified of the spill event, the Public Works Superintendent or his/her designee will:
 - Notify OES (and obtain spill number for use in other reports),
 - Notify the Siskiyou County Department of Health (County Health), and
 - Notify the RWQCB.
- **Within 24 hours** of being notified of the spill event, the Public Works Superintendent or his/her designee will certify to the RWQCB that OES and County Health were notified of the SSO event.
- **Within 3 business days** of being notified of the spill event, the LRO or his/her designee will certify the initial report using CIWQS.
- **Within 15 calendar days** of the conclusion of SSO response and remediation, the LRO or his/her designee will certify the final report using CIWQS.
- The LRO or his/her designee will update the certified report as new or changed information becomes available. The updates can be submitted at any time and must be certified.

3.8.2.2. Category 2 SSOs

Within 30 calendar days after the end of the calendar month in which the SSO occurs, the Public Works Operations Manager or his/her designee will submit an electronic report using CIWQS and the LRO will certify the report. The report will include the information to meet the GWDR requirements.

3.8.2.3. Private Lateral Sewage Discharges

The Public Works Operations Manager or his/her designee may report private lateral SSOs using CIWQS, specifying that the sewage discharge occurred and was caused by a private lateral and identifying the responsible party (other than the District), if known.

3.8.2.4. No Spill Certification (Monthly)

If there are no SSOs during the calendar month, the Public Works Superintendent or his/her designee will submit an electronic report and the LRO will certify the report that the District did not have any SSOs within 30 calendar days after the end of each calendar month.

3.8.2.5. CIWQS Not Available

In the event that CIWQS is not available, the Public Works Superintendent or his/her designee will fax all required information to the RWQCB office in accordance with the time schedules identified above. In such event, the District will submit the appropriate reports using CIWQS as soon as practical. The RWQCB fax number for Region 5R is (530) 224-4857. A sample form with required information is included as Appendix 3-D.

3.8.3. Internal SSO Documentation

3.8.3.1. Category 1 and 2 SSOs

The first responder will complete a work order and the Sewer Report Form (Appendix 3-B) and provide copies to the Public Works Operations Manager. The Public Works Operations Manager will prepare a file for each individual SSO.

The file should include the following information:

- Initial service call information
- Sewer Report Form
- Copies of the CIWQS report forms
- Volume estimate
- Failure analysis investigation results

The following are optional for Category 2 SSOs:

- Appropriate maps showing the spill location
- Photographs of spill location
- Water quality sampling and test results, if applicable

3.8.4. External SSO Record Keeping Requirements

The GWDR requires that individual SSO records be maintained by the District for a minimum of five years from the date of the SSO. This period may be extended when requested by the RWQCB Executive Officer. All records shall be made available for review upon SWRCB or RWQCB staff's request. Records shall be retained for all SSOs, including but not limited to the following when applicable:

- Copy of Certified CIWQS report;
- All original recordings for continuous monitoring instrumentation;
- Service call records and complaint logs of calls received by the District;
- SSO records;
- Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps;
- Work orders, work completed, and any other maintenance records from the previous five years which are associated with responses and investigations of system problems related to SSOs;
- A list and description of complaints from customers or others from the previous five years; and
- Documentation of performance and implementation measures for the previous five years.

If water quality monitoring is conducted by the District or its agent(s), as a result of any SSO, records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed;
- The individual(s) who performed the analyses;
- The analytical technique or method used; and
- The results of such analyses.

3.9. Post SSO Event Debriefing

Every SSO event is an opportunity to evaluate the response and reporting procedures. Each overflow event is unique, with its own elements and challenges including volume, cause, location, terrain, and other parameters.

As soon as possible after major SSO events, all of the participants, from the person who received the call to the last person to leave the site, should meet to review the procedures used and to discuss what worked and where improvements could be made in responding to and mitigating future SSO events. The results of the debriefing should be recorded and tracked to ensure the action items are completed.

3.10. Equipment

This section provides a list of specialized equipment that is required to support this Overflow Emergency Response Plan.

Closed Circuit Television (CCTV) Inspection Unit – A CCTV Inspection Unit is used to determine the root cause for all SSOs from gravity sewers.

Camera – A digital or disposable camera is used to record the conditions upon arrival, during clean up, and upon departure.

Emergency Response Truck – A utility body pickup truck is used to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools should include containment and clean up materials.

GPS Unit (Global Positioning System) – A hand held GPS unit is used to determine the coordinates of spills for use in meeting SWRCB SSO reporting requirements.

Combination Sewer Cleaning Trailer– A combination high velocity District sewer cleaning trailer with 500 gallon vacuum tank is used to clear blockages in gravity sewers, vacuum spilled sewage, and wash-down the impacted area following an SSO event.

Portable Generators, Portable Pumps, Piping, and Hoses – The list of portable equipment that is used to support this plan is included as Appendix 3-I.

3.11. SSO Response Training

This section provides information on the training that is required to support this Overflow Emergency Response Plan.

3.11.1. Initial and Annual Refresher Training

All District personnel who may have a role in responding to, reporting, and/or mitigating a sewer system overflow should receive training on the contents of this OERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

3.11.2. SSO Training Record Keeping

Records should be kept of all training that is provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event should include date, time, place, content, name of trainer(s), and names of attendees.

3.12. Contractors Working on District Sewer Facilities

Requirement: Each wastewater collection system agency shall provide contingency equipment to handle emergencies, and spare/replacement parts intended to minimize equipment/ facility downtime.

This section can be waived for collection systems serving a population of 10,000 or less.

This requirement is waived

Appendix 3-A: After Hours/Emergency Contact Info

Name	Role/Title	Phone Number
On-Call	After Hours On -Call Notification	530-859-1904
Wayne Grigsby	General Manager	530-964-2017 530-859-1569
Rick Dean	Siskiyou County Health Dept	530-598-1531 530-841-2213
Louis Mero	Siskiyou County Sheriff	530-598-2971
Rick Dexter	Fire Chief	530-261-2495
Chuck Gray	County Road Department	530-926-4524 530-598-0831

Appendix 3-B: Sewer Report Form

INITIAL INFORMATION

DATE: _____ CALL RECEIVED: _____
_____ AM/PM

RECEIVED BY: _____ CALLER'S NAME: _____

CALLER'S PHONE #: _____ CALLER'S ADDRESS: _____

LOCATION OF OVERFLOW: _____ CROSS STREET: _____

TIME AND NAMES OF CREW MEMBERS CONTACTED: _____

DESCRIPTION OF COMPLAINT: _____

FIELD REPORT: FOR RESPONSE CREW'S USE

TIME ARRIVED AT SITE: _____ AM/PM CREW NAMES: _____

ASSET #: _____ U/S ASSET#: _____ D/S

ASSET#: _____

SIZE OF LINE: _____ LENGTH OF LINE: _____ EASEMENT: YES _ NO

GPS COORDINATES: LATITUDE: 34. _____ LONGITUDE: -
118. _____

COMMENTS: _____

COMPLETE REMAINDER OF FORM IF AN OVERFLOW HAS OCCURRED

TIME SSO STARTED: _____ TIME SSO STOPPED: _____ DURATION OF SSO: _____
(DAYS/HOURS)

EST. TOTAL VOLUME: _____ (GALLONS) RETURNED TO SEWER SYSTEM: _____
(GALLONS)

DID SSO REACH SURFACE WATERS? YES _ NO _

VOLUME TO WATERS (INCLUDING STORM DRAIN) THAT WAS NOT RECOVERED: _____
(GALLONS)

SURFACE/RECEIVING WATER LOCATION: _____

DESCRIBE HOW OVERFLOW QUANTITY WAS CALCULATED: EYEBALL ESTIMATE _
DURATION/FLOWRATE _
MEASURED VOLUME _ OTHER _____

WEATHER: SUNNY _ CLOUDY _ RAINY _ RAIN FOR SEVERAL DAYS _____

PRIMARY CAUSE: ROOTS _ GREASE _ DEBRIS _ VANDALISM _ CONSTRUCTION DAMAGE _ PIPE
FAILURE _

PUMP STATION FAILURE _ POWER FAILURE _ CAPADISTRICT (HEAVY RAIN) _ OTHER _____

SOURCE OF SSO: MANHOLE _ GRAVITY MAIN _ FORCE MAIN _ CLEAN OUT _ PRIVATE LATERAL _____

PUMP STATION _ _____ (NAME) OTHER _____

FINAL SSO DESTINATION: STORM DRAIN _ CAPTURED FROM STORM DRAIN (100%) _ BUILDING _
YARD/LAND _ SURFACE WATERS _ NO SURFACE WATERS INVOLVED _ OTHER _____

ADDITIONAL INFORMATION: _____

Appendix 3-C: Sample Collection System Failure Analysis Form

COLLECTION SYSTEM FAILURE ANALYSIS FORM

Incident Report # _____ Prepared by: _____

Address Location of SSO _____

Total SSO Volume ____ # Gallons Total SSO Volume Recovered ____ # Gallons

Cause: Roots , Debris , Vandalism Construction Damage ,
Pipe Failure , Capacity (heavy rain) , Other , _____

Summary of Historical SSOs, Backups, Service Calls, Other Problems

Records Reviewed by: _____ Record Review Date _____

Event Date	Cause/Problem	Date Previously Cleaned	Staff Responding to Call
_____	_____	_____	_____
_____	_____	_____	_____

Summary of CCTV Information

CCTV Inspection Date: _____ Tape Name/Number: _____

CCTV Observations: _____

Recommendations

- No changes or repairs required
- Maintenance Equipment
- Maintenance Frequency
- Repair Location and Type
- Add to Capital Equipment Rehabilitation/Replacement List

Additional Information: _____

Public Works Superintendent Signature

Date

Appendix 3-D: Sample Fax Form for SSO Reporting

FAX FORM FOR SSO REPORTING	
THIS FORM IS BEING SUBMITTED TO REPORT AN SSO TO SATISFY THE CALIFORNIA SWRCB 2-HOUR/24-HOUR REPORTING REQUIREMENT OR BECAUSE THE CIWQS WEBSITE IS UNAVAILABLE.	
To: RWQCB, REGION 5R – CENTRAL VALLEY-REDDING	FAX NUMBER: (530) 224-4857
REPORTING AGENCY: CITY OF OROVILLE	WDID: 5SSO10799
COUNTY WHERE SSO OCCURRED: BUTTE	ONGOING INVESTIGATION: YES <input type="checkbox"/> NO / COMPLETE <input type="checkbox"/>
FAX SENT AT: ___/___/___ AT ___:___ (24-HOUR)	VOICE MESSAGE: ___/___/___ AT ___:___
OES CONTROL NUMBER: _____	COUNTY HEALTH CALLED: ___/___/___ AT ___:___
OVERFLOW LOCATION: LATITUDE: 34. _____	LONGITUDE: -118. _____
STREET ADDRESS: _____	
CROSS STREET: _____	
CITY: _____	ZIPCODE: _____
DATE/TIME CITY WAS NOTIFIED OF SSO: ___/___/___ AT ___:___	
CITY STAFF ARRIVED: ___/___/___ AT ___:___ SSO ENDED: ___/___/___ AT ___:___	
WAS A PRIVATE LATERAL THE CAUSE OF THE SSO?	YES <input type="checkbox"/> NO <input type="checkbox"/>
DID SSO ENTER DRAINAGE CHANNEL OR SURFACE WATERS?	YES <input type="checkbox"/> NO <input type="checkbox"/>
WAS 100% OF THE SSO RECOVERED AND RETURNED TO SEWER?	YES <input type="checkbox"/> NO <input type="checkbox"/>
WERE BEACHES IMPACTED?	YES <input type="checkbox"/> NO <input type="checkbox"/>
WAS SSO POSTED?	YES <input type="checkbox"/> NO <input type="checkbox"/>
ESTIMATED SSO VOLUME TOTAL: _____(GALLONS)	VOLUME RECOVERED: _____(GALLONS)
ESTIMATED SPILLED SEWAGE VOLUME THAT REACHED SURFACE WATERS: _____(GALLONS)	
SSO SOURCE: MANHOLE <input type="checkbox"/> GRAVITY MAIN <input type="checkbox"/> FORCE MAIN <input type="checkbox"/> CLEAN OUT <input type="checkbox"/> PRIVATE LATERAL <input type="checkbox"/> PUMP STATION <input type="checkbox"/> OTHER _____	
SSO DESTINATION: STORM DRAIN <input type="checkbox"/> CAPTURED FROM STORM DRAIN (100%) <input type="checkbox"/> BUILDING <input type="checkbox"/> YARD/LAND <input type="checkbox"/> SURFACE WATERS <input type="checkbox"/> NO SURFACE WATERS INVOLVED <input type="checkbox"/> OTHER _____	
SSO CAUSE: ROOTS <input type="checkbox"/> GREASE <input type="checkbox"/> DEBRIS <input type="checkbox"/> VANDALISM <input type="checkbox"/> CONSTRUCTION DAMAGE <input type="checkbox"/> PIPE FAILURE <input type="checkbox"/> PUMP STATION FAILURE <input type="checkbox"/> POWER FAILURE <input type="checkbox"/> CAPACITY (HEAVY RAIN) <input type="checkbox"/> OTHER _____	
DESCRIBE RESPONSE AND CORRECTIVE ACTION TAKEN: _____ _____	
WERE SAMPLES TAKEN? NO <input type="checkbox"/> YES: _____ (AGENCY/LABORATORY)	
IF YES, TESTING FOR: TOTAL COLIFORM <input type="checkbox"/> FECAL COLIFORM <input type="checkbox"/> BOD <input type="checkbox"/> DISSOLVED OXYGEN <input type="checkbox"/> AMMONIA <input type="checkbox"/>	
REPORTING PERSON NAME: _____	PHONE NUMBER: _____
LRO'S NAME: _____	LRO'S PHONE NUMBER: _____

Revised September 2008

STOP! EMERGENCY!

**No flush or water use at home
until further notice.**

**This is due to a sewer main
emergency.**

**You will be notified as soon as
the repair is completed.**

Thank you for your cooperation.

MCSD

(530) 964-2017

(530) 859-1569

Appendix 3-E: Private Property Damage Procedures

Customer Relations Guidelines

It is important for employees to communicate effectively with the District's customers, especially in a sewage backup situation. How we communicate – on the phone, in writing, or in person – is how we are perceived. Good communication with the homeowner results in greater confidence in our ability to address the problem satisfactorily, less time to resolve the claim, and less damage done to the property.

As a representative of the District, you will occasionally have to deal with an irate homeowner. A backup is a stressful event and even a reasonable homeowner can become irate should he/she perceive us as being indifferent, uncaring, unresponsive, or incompetent.

Although sometimes difficult, effective management of a sewage backup situation is critical. If it is not managed well, the situation can end up in a costly, prolonged process with the homeowner. We want the homeowner to feel assured that we are responsive and the homeowner's best interest is a top priority.

Communication Tips

- Give the homeowner ample time to explain the situation or to vent. Show interest in what the homeowner has to say, no matter how many times you have heard it before, or how well you understand the problem.
- As soon as possible, let the customer know that you will determine if the source of the sewer backup is in the sewer main and, if it is, will have it corrected as quickly as you can.
- Acknowledge the homeowner's concerns. For example, if the homeowner seems angry or worried about property damage, say something like, "I understand you're concerned about the possible damage to your property, but a professional cleanup crew can restore the area, and if it is determined that the District is at fault, the property owner has the right to file a claim for any reasonable repairs or losses resulting from this incident".
- Express regret for any inconveniences caused by the incident, but do not admit fault.
- As much as possible, keep the homeowner informed on what is being done and will be done to correct the problem.
- Keep focused on getting the job done in a very professional manner. Don't wander from the problem with too much unnecessary small talk with the homeowner.
- Don't find fault or lay blame on anyone.
- Make sure someone follows up with a telephone call to ensure everything is being handled as it should be.

Before you leave, make sure the homeowner has the name and telephone number of someone at the District to call if he/she has questions or wants

information. The customer information letter contains this information and you should take the time to review this with the homeowner.

Appendix 3-F: Methods for Estimating Spill Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available.

Method 1 Eyeball Estimate

The volume of small spills can be estimated using an “eyeball estimate”. To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

Method 2 Measured Volume

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

Steps for calculating volume

Step 1 Sketch the shape of the contained sewage (see figure above).

Step 2 Measure or pace off the dimensions.

Step 3 Measure the depth at several locations and select an average.

Step 4 Convert the dimensions, including depth, to feet.

Step 5 Calculate the area in square feet using the following formulas:

Rectangle: Area = length (feet) x width (feet)

Circle: Area = diameter (feet) x diameter (feet) x 0.785

Triangle: Area = base (feet) x height (feet) x 0.5

Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.

Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons.

Method 3 Duration and Flowrate

Calculating the volume of larger spills, where it is difficult or impossible to measure the area and depth, requires a different approach. In this method, separate estimates are made of the duration of the spill and the flowrate. The methods of estimating duration and flowrate are:

Duration: The duration is the elapsed time from the time the spill started to the time that the flow was restored.

Start time: The start time is sometimes difficult to establish. Here are some approaches:

- Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on

longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.

- Changes in flow on a downstream flowmeter can be used to establish the start time. Typically the daily flow peaks are “cut off” or flattened by the loss of flow. This can be identified by comparing hourly flow data during the spill event with flow data from prior days.
- Conditions at the spill site change over time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. After a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process.
- It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues).

End time: The end time is usually much easier to establish. Field crews on-site observe the “blow down” that occurs when the blockage has been removed. The “blow down” can also be observed in downstream flowmeters.

Flow Rate: The flowrate is the average flow that left the sewer system during the time of the spill.

There are three common ways to estimate the flowrate:

- The San Diego Manhole Flowrate Chart: This chart, included as Appendix 7-H, shows sewage flowing from manhole covers at a variety of flowrates. The observations of the field crew can be used to select the appropriate flowrate from the chart. If possible, photographs are useful in documenting basis for the flowrate estimate.
- Flowmeter: Changes in flows in downstream flowmeters can be used to estimate the flowrate during the spill.
- Counting Connections: Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of connections by 200 to 250 gallons per day per connection or 8 to 10 gallons per hour per connection.
- For example: 22 upstream connections x 9 gallons per hour per connection
= 198 gallons per hour / 60 minutes per hour
= 3.3 gallons per minute

Spill Volume: Once duration and flowrate have been estimated, the volume of the spill is the product of the duration in hours or days and the flowrate in gallons per hour or gallons per day.

For example:

Spill start time = 11:00
Spill end time = 14:00
Spill duration = 3 hours
3.3 gallons per minute x 3 hours x 60 minutes/hour = 594 gallons

Appendix 3-G: Manhole Overflow Flow rate Guide



City of San Diego
Metropolitan Wastewater Department



Reference Sheet for Estimating Sewer Spills
from Overflowing Sewer Manholes
All estimates are calculated in gallons per minute (gpm)



City of San Diego
Metropolitan Wastewater Department



rev. 4/99

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

Appendix 3-H: Sample Warning Sign

DANGER!
CONTAMINATED WATER
KEEP OUT



AGUA CONTAMINADA
ALEJESE
PELIGRO!

McCloud Community Services District
(530) 964-2017

Appendix 3-I: Emergency Response Equipment

Items	No.	Quantity	Comments
Delineating Devices			
1. Cones		50	
2. Tubular markers		25	28" tall
3. "Men working" signs		3	
4. "Road Closed" signs		2	
Straw		10 bales	
5-yard Dump truck		1	
Backhoe		1	
Loader		1	
Sand bags		300	
Fischer's Septic/Mt. Shasta/Response	(530) 235-1972		1500 Gal. Vac Truck
Calibrated gas detector	1		
500 gallon vacuum trailer w/4000 psi jet hose	1		

ELEMENT 4 Fat Oil and Grease (FOG) Control Program

Requirement: Each wastewater collection system agency shall evaluate its service area to determine whether a FOG control program is needed. If so, a FOG control program shall be developed as part of the SSMP. If an agency determines that a FOG program is not needed, the agency must provide justification for why it is not needed.

This section is applicable to all wastewater collection systems.

4.1. Introduction

This section of the SSMP presents the District's approach to preventing FOG-related SSOs.

4.2. Nature and Extent of FOG Problem

The District has identified commercial and non-commercial FOG dischargers including the local car wash, McCloud River Lodge, Mercantile, Hotel, etc.

The District has not experienced any FOG related SSOs since the inception of its reporting in 2007.

The District does not have a FOG source Control program. However, the District has provisions in Paragraph 3 of District Ordinance 15 that allow for the inspection, reporting and monitoring of any person discharging or proposing to discharge wastewater into the community sewer system.

4.3. FOG Source Control Program

The District will continue to require new and remodeled commercial FOG sources to install grease removal equipment. It will also collect data during routine maintenance and cleaning to determine if "hot spots" are developing within the collection system. Depending upon results, the District will implement new program protocols as needed to mitigate these issues

ELEMENT 5 Legal Authority

Requirement: Each wastewater collection system agency shall, at a minimum, describe its legal authority, through sewer use ordinances, services agreements, or other legally binding procedures to:

- Control infiltration/inflow (I/I) from satellite wastewater collection systems and laterals
 - Require proper design and construction of new and rehabilitated sewers and connections
 - Require proper installation, testing, and inspection of new and rehabilitated sewers
- This section can be waived for collection systems that serve a population of 10,000 or less.*

5.1. Introduction

This section of the SSMP presents the District’s legal authority to comply with the SSMP requirements, as provided in its Local Ordinance and agreements with other agencies.

5.2. District Ordinance

California Government Code Section 61600(b) authorizes the District to collect, treat or dispose of sewage. The District’s Ordinance 15, Rules and Regulations Related to Sewers and Sewer Disposal, identifies and addresses authorizations, requirements, procedures and enforcement issues. This ordinance was revised in 2002 during the phased process of full collection system infrastructure replacement in order to ensure implementation and enforcement of appropriate protections.

Requirement	Ordinance 15 Reference	Meets GWDR Requirements?
General		
<ul style="list-style-type: none"> • Prevent illicit discharges into the sanitary sewer system 	Section 2.01 to 2.08	Yes
<ul style="list-style-type: none"> • Limit the discharge of fats, oils, and grease and other debris that may cause blockages 	Section 2.08.4	Yes
<ul style="list-style-type: none"> • Require that sewers and connections be properly designed and constructed 	Section 3.03	Yes
<ul style="list-style-type: none"> • Require proper installation, testing, and inspection of new and rehabilitated sewers 	Section 3.08	Yes
Laterals		
<ul style="list-style-type: none"> • Clearly define District responsibility 	Section 1.01	Yes
<ul style="list-style-type: none"> • Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the District 	Section 2.09.05	Yes
<ul style="list-style-type: none"> • Control infiltration and inflow (I/I) from private service laterals 	Section 2.10	Yes
FOG Source Control		
<ul style="list-style-type: none"> • Requirements to install grease removal devices (such as traps or interceptors), design, standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements 	Section 2.04	Yes
<ul style="list-style-type: none"> • Authority to inspect grease producing facilities 	Section 3.08	Yes
Enforcement		

• Enforce any violation of its sewer ordinances	Section 6.01.1	Yes
---	----------------	-----

ELEMENT 6 Measures and Activities

Requirement: Each wastewater collection system agency shall maintain up-to-date maps of its wastewater collection system facilities.

This section is applicable to all wastewater collection systems.

6.1. Introduction

This section of the SSMP provides an overview of the District's operations and maintenance program.

6.2. Collection System Maps

The sewer collection system was replaced in 2006. The replacement project included engineering drawings of pipes, manholes etc. and their respective locations. New projects and repairs are documented in accordance with MCSD Ordinance 15 – Rules and Regulations relating to Sewers and Sewage Disposal.

6.3 Resources and Budget

Requirement: Each wastewater collection system agency shall allocate adequate resources for the operation, maintenance, and repair of its collection system.

This section is applicable to all wastewater collection systems.

The District develops an annual budget for the operation, maintenance and future repair and replacement of the sewer system

6.4. Prioritized and Preventive Maintenance Program

Since the replacement of the system, the District has maintained a minimal observation and cleaning of the system. The District has procured a vac-pressure cleaner suitable for the correct maintenance of the system. All aspects of sewer maintenance required by the GWDR are in place this year and include a 3 year cleaning and inspection cycle for the collection system

6.4.1. Gravity Sewers

The District proactively cleans all sewers 15 inches in diameter and smaller every three years, and it preventively cleans sewers with a history of problems every 1, 3, or 6 months. One part-time sewer cleaning crew is assigned to these activities. The District's standard operating procedure for sewer cleaning is included as Appendix 6-A.

Gravity sewer cleaning is currently scheduled using paper work orders. The District intends to transition to a computer-based maintenance management system to initiate work orders, record completed work, and compile a maintenance history for each individual sewer system asset. The District intends to complete the implementation by August 16, 2011.

The District will visually inspect the condition of its larger sewers every three years and provide cleaning if needed. The District uses CCTV to determine the cause of its gravity sewer blockages and SSOs.

The District completes repairs using its field crews and it uses underground contractors to complete the more difficult repairs. Repairs are completed in priority order. The District intends to complete the first round of inspection using CCTV by December 31, 2012 and it intends to continue inspecting its gravity sewers thereafter on a three-year cycle. One part-time CCTV inspection crew is assigned to this activity. The inspection data is reviewed by the Public Works Superintendent to determine whether repairs or rehabilitation/replacement are warranted.

A list of known structural problems is maintained for use in providing input to the Capital Improvement Program.

6.4.2. Non-Routine Maintenance

Non-routine maintenance activities include investigation and response to any complaints regarding a manhole overflow, missing or shifted manhole covers, manhole covers that are excessively noisy, residential plumbing troubles, unexpected sewer odor, etc. Sewer complaints are investigated and appropriate actions are taken to resolve the source of the problem.

6.5. Scheduled Inspections and Condition Assessment

Requirement: Each wastewater collection system agency shall prioritize its preventive maintenance activities.

This section is applicable to all wastewater collection systems.

The District has a program to inspect and assess the condition of the collection system. Collection system assets will be replaced as conditions warrant.

6.6. Contingency Equipment and Replacement Inventories

Requirement: Each wastewater collection system agency shall provide contingency equipment to handle emergencies, and spare/replacement parts intended to minimize equipment/ facility downtime.

This section can be waived for collection systems serving a population of 10,000 or less.

This requirement is waived.

6.7. Training Program

Requirement: Each wastewater collection system agency shall provide training on a regular basis for its staff in collection system operations, maintenance, and monitoring.

The District currently uses a combination of on-the-job training and conferences, seminars, and other opportunities to train its collection system staff. A partial list of available training resources is shown on Table 6-1.

The District's contract language requires contractors working in the collection system to provide training for their employees in collection system operations and response to collection system blockages/overflows

Table 6-1: Training Resources

Sponsor	Event	Timeframe	References
California Water Environment Association	State Conference	April	www.cwea.org
	Northern Regional Training Conf	September	
	Northern Regional Safety Conference	May	
	Northern Sacramento Valley Section	Periodic	
	Sacramento Area Section Collection Systems Committee	Quarterly	
Central Valley Clean Water Association	Collection System Committee	Periodic	http://www.cvcwa.org
Tri-State Conference	Annual Conference	September	www.tristateseminar.com
California State University, Sacramento	Videos, manuals, home study courses	Continuous	www.owp.csus.edu
USEPA	On-line courses	Continuous	www.epacampus.com

6.8. Outreach to Plumbers and Building Contractors

Requirement: Implement an outreach program to educate commercial entities involved in sewer construction or maintenance about the proper practices for preventing blockages in private laterals. This requirement can be met by participating in a region-wide outreach program.

This section can be waived for collection systems serving a population of 10,000 or less.

This section is waived

Appendix 6-A: Standard Operating Procedure for Sewer Cleaning

Purpose

The purpose of this Standard Operating Procedure is to ensure that sewer cleaning is performed in a manner that will produce a high quality work product. Quality is important because it ensures that the sanitary sewers will not experience problems prior to their next scheduled cleaning.

Goal

The goal of cleaning a gravity sewer is to restore the flow area to 95% of the original flow area of the pipe.

Required Equipment and Tools

1. Personal protective equipment (hardhat, steel toe boots, gloves, eye/face protection, hearing protection)
2. Calibrated gas detector
3. Proper safety cones, barricades, flagging, signs or other traffic control devices
4. Confined space equipment (tripod, harness, and ventilation blower)
5. Sanitary sewer system map book
6. Combo sewer cleaner
7. Warthog sewer cleaning nozzle
8. Six-wire skid ("proofer") in sizes that will be encountered during the day
9. Root saw
10. Debris traps in the sizes that will be encountered during the day
11. Manhole hook or pick-axe
12. Measuring wheel
13. Disinfectant

Procedures for Sewer Cleaning Crew

Prior to Leaving the Yard

1. Plan the work so that it starts in the upstream portion of the area and moves downstream.
2. Wherever possible, plan to clean sewers from the downstream manhole.
3. Inspect the sewer cleaning nozzles for wear. Replace nozzles that are excessively worn.
4. If this is the first day that this cleaning unit is being used this week, inspect the first 200 feet of hose and couplings for damage or wear.

At the Jobsite

1. Wear proper personnel protective equipment (PPE).
2. Fill the water tank at or near the first jobsite.
3. Determine and confirm location of upstream and downstream manholes (use street addresses, if possible).
4. Look for any overhead utilities that may come into contact with the vacuum boom during the cleaning operation.

5. Set up proper traffic control by placing traffic signs, flags, cones and other traffic control devices.
6. Move the cleaning unit into the traffic control so that the hose reel is positioned over the manhole.
7. Open the manhole and use the gas detector to determine if it is safe to proceed with the cleaning operation.
8. Install the Warthog nozzle on the hose.

Cleaning Operation

1. Insert the debris trap.
2. Start the auxiliary engine.
3. Lower the hose, with a guide or roller to protect the hose, into the manhole and direct it into the sewer to be cleaned.
4. Start the high pressure pump and set the engine speed to provide adequate pressure for the sewer cleaning operation.
5. Open the water valve and allow the hose to proceed up the sewer. The hose speed should not exceed 3 feet per minute.
6. Allow the hose to proceed 25% of the length of the sewer and pull the hose back.
7. Observe the nature and the quantity of debris pulled back to the manhole.
8. If there is little or no debris, allow the hose to proceed to the upstream manhole.
9. If there is moderate to heavy debris, clean the remaining portion of the sewer in steps not to exceed 25% of the length of the sewer.
10. Open the upstream manhole and verify that the nozzle is at or past the manhole.
11. The sewer has been adequately cleaned when successive passes with a cleaning nozzle do not produce any additional debris, and the sewer is able to pass a full size, six-wire skid (“proofer”) for its entire length.
12. Determine the nature and quantity of the debris removed during the cleaning operation. Use the codes in Table 6-1 to report the nature and quantity of debris.

Table 6-2: Criterion for Coding Debris Found During Cleaning

Type of Debris	Clear (no debris)	Light	Moderate	Heavy
Sand, grit, rock	CLR	DL	DM	DH
Grease	CLR	GL	GM	GH
Roots	CLR	RL	RM	RH
Other (specify)	CLR	OL	OM	OH

1. Remove the debris from the manhole using the vacuum unit.
2. Rewind the hose on the reel.
3. Remove the debris trap.
4. Clean the mating surface and close the manhole. Ensure that the manhole is properly seated.
5. Enter the results on the Work Order.

6. Move the cleaning unit, break down and stow the traffic controls.
7. Proceed to the next cleaning jobsite.

At the End of the Day

1. Inspect the equipment and tools for problems.
2. Report any problems with equipment, tools, or sewers that were cleaned during the day.
3. Turn in all completed Cleaning Work Orders at end of shift.

Figure 6-1: Excerpt from CWEA publication, “Best Practices Cleaning Results”

Standard Measures of Observed Results			
Next to cleaning the sewer line, effective observation of results is the most important work product of the crew. This information is the basis for defining future maintenance activities. Consistency is important. The standards for “results” for six- and eight-inch diameter sewers are:			
	Clear	Moderate	Heavy
Grit	No observable grit	Less than 5 gallons 15-20 minutes to clean 1-2 passes required Requires cleaning twice or less per year Only fine grit	More than 5 gallons More than 30 minutes to clean More than 4 passes required Requires cleaning four times per year
Grease	No observable grease	Small chunks/no “logs” 15-20 minutes to clean 1-2 passes required Requires cleaning twice or less per year	Big chunks/“logs” Operator concern for downstream Plugging More than 30 minutes to clean More than 4 passes required
Liquefied grease		Vacuuming not required	Vacuuming not required
Roots	No observable roots	Thin/stringy roots present no large clumps 15-20 minutes to clean 1-2 passes required	Thick roots present Large “clumps” More than 30 minutes to clean More than 4 passes
Other condition observations: - Pipe material fragments - Soil/dirt - Rock (pipe bedding) - Lost nozzle			

Appendix 6–B: Major Sewer System Equipment Inventory

Equipment Number	Major Equipment Type	Year Purchased
2	Gas detector - sewer	2008
1	Gen-Eye – 300` long pipe Inspection	2002
1	500 gallon vacuum trailer/sewer jet	2011

ELEMENT 7 Design and Construction Standards

7.1 Standards for Installation, Rehabilitation and Repair

Requirement: Each wastewater collection system agency shall identify minimum design and construction standards and specifications for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems.

This section is applicable to all wastewater collection systems.

The District's Ordinance 15, Rules and Regulations Related to Sewers and Sewer Disposal – provides the standards used to install, rehabilitate and repair the collection system. Additionally, the Siskiyou County standards also apply

7.2. Standards for Inspecting New and Rehabilitated Facilities

Requirement: Each wastewater collection system agency shall identify procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances; and for rehabilitation and repair projects.

This section is applicable to all wastewater collection systems.

The District's Ordinance 15, Rules and Regulations Related to Sewers and Sewer Disposal – provides the standards used to test and collection system.

ELEMENT 8. District Management

8.1. District Assessment

Requirement: Each wastewater collection system agency shall establish a process to assess the current and future capacity requirements for the collection system facilities.
This section can be waived for collection systems serving a population of 10,000 or less.

This section is waived.

8.2. System Evaluation and District Assurance Plan

Requirement: Each wastewater collection system agency shall prepare and implement a capital improvement plan to provide hydraulic capacity of key sewer system elements under peak flow conditions.
This section can be waived for collection systems that serve a population of 10,000 or less.

This section is waived

ELEMENT 9 Monitoring, Measurement and Program Modifications

Requirement: Each wastewater collection system agency shall monitor the effectiveness of each SSMP element and update and modify SSMP elements to keep them current, accurate, and available for audit as appropriate.

This section is applicable to all wastewater collection systems.

9.1. Introduction

This section presents the District's approach to Monitoring, Measurement, and Program Modifications.

9.2. Performance Measures

The indicators that the District uses to measure the performance of its sanitary sewer system and the effectiveness of its SSMP are:

- Total number of SSOs;
- Number of SSOs for each cause (roots, grease, debris, pipe failure, District, and other);
- Portion of sewage contained compared to total volume spilled;
- Volume of spilled sewage discharged to surface water; and
- Planned to actual performance for preventive maintenance.

9.3. Historical Performance Data

The District has limited historical performance data at this time. The District has been reporting SSOs through CIWQS since September 2, 2007.

9.4. Baseline Performance

Geospatial and trend analysis is not meaningful at this time due to the limited quantity of data available (less than one year). Further analysis will be conducted in future years as additional data becomes available.

9.5. Performance Monitoring and Program Changes

The District will evaluate the performance of its sanitary sewer system annually using the performance measures identified in Section 9.3, Performance Measures (above) using the baseline performance to determine the trends. The District may use other performance measures in its evaluation.

9.6. SSMP Updates

The District will update its SSMP at least every five years. The first update will be completed on or before November 1, 2014. The District will determine the need to update its SSMP more frequently based on the results of the semi-annual audit and the performance of its sanitary sewer system.

In the event that the District decides that an update is warranted, the process to complete the update will be identified at that time. The District will complete the update within one year following identification of the need for the update. District Staff will seek approval from the District Board for any significant changes to the SSMP.

ELEMENT 10. SSMP Audits

Requirement: Each wastewater collection system agency shall conduct an annual audit of their SSMP which includes any deficiencies and steps to correct them (if applicable), appropriate to the size of the system and the number of overflows, and submit a report of such audit.

This section can be waived for collection systems serving a population of 10,000 or less.

This section is waived.