



CITY OF COLUSA

**SEWER SYSTEM
MANAGEMENT PLAN**

MAY 2, 2010

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Sewer System Management Plan Overview

I. Introduction

The purpose of the City of Colusa's Sewer System Management Plan (SSMP) is to document activities that the City utilizes to manage its wastewater collection system effectively. Effective management of a collection system includes:

- - Minimizing the number and impact of sanitary sewer overflows (SSOs)
 - Providing adequate sewer capacity to convey peak flows.
 - Maintaining and/or improving the collection system infrastructure in a reliable condition now and as the system grows.

II. Document Organization

This SSMP has been prepared for the City of Colusa Department of Public Works by City Staff in compliance with requirements of the Central Valley Regional Water Quality Control Board (RWQCB) pursuant to section 13267 of the California Water Code.

The SSMP is intended to meet the requirements of both the RWQCB and the Statewide General Waste Discharge Requirements (WDR).

The SSMP includes eleven elements as listed below. Each of these elements forms a section of this document.

SSMP ELEMENTS

1. SSMP Goals
2. Organization
3. Legal Authority
4. Operations and Maintenance Program
5. Design and Performance Provisions
6. Overflow Emergency Response Plan
7. FOG Control Program
8. System Evaluation and Capacity Assurance Plan
9. Monitoring, Measurement and Program Modifications
10. SSMP Program Audits
11. Communication Program

III. Location and Description Wastewater Collections System

The City of Colusa is located in Colusa County and near the geographic center of the Sacramento Valley approximately 60 miles north of Sacramento. The City is situated adjacent to the west

side of the Sacramento River with relatively flat terrain with an approximately 10 foot elevation difference from the river to the wastewater treatment plant 2.5 miles distant.

The City was incorporated in 1868¹ and as such the wastewater collection system is assumed to have been initially constructed around that time. The system has expanded with the population and development to over 26 miles of sewer gravity and force main, and 6 pump stations that feed a 0.7 million gallon per day wastewater treatment plant.

The wastewater collection system and waste water treatment plant are entirely owned and operated by the City of Colusa. Daily maintenance is managed and performed by City employees under the Public Works Department with the exception of larger projects requiring equipment and labor not available to the sewer maintenance crews.

IV. Terms and Definitions

Nuisance – California Water Code section 13050, subdivision (m), defines nuisance as anything which meets all of the following requirements:

- (a) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property.
- (b) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
- (c) Occurs during, or as a result of, the treatment or disposal of wastes.

Sanitary Sewer Overflow (SSO) – Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include

Category

- (i) Overflows or releases of untreated or partially treated wastewater that reaches waters of the United States;
- (ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
- (iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

SSO Reporting System – Online spill reporting system that is hosted, controlled, and maintained by the State Water Board. The Web address for this site is <http://ciwqs.waterboards.ca.gov>. This online database is maintained on a secure site and is controlled by unique usernames and passwords.

Untreated or partially treated wastewater – Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plan headworks.

¹ City of Colusa General Plan, City of Colusa, October 2007

Wastewater Collection System or Sanitary Sewer System – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

1. SSMP Goals

The Department of Public Works and more specifically the Water & Sewer Division utilize preventative maintenance practices in their efforts to properly maintain and operate the sanitary sewer collection system. Sewer Maintenance works in tandem with the Contract City Engineer in efforts to improve the condition of and extend the life of collection system assets. The Department of Public Works has developed this SSMP to achieve the following collection system management goals and objectives listed below. These goals and objectives have been adopted into the budget.

- Proper maintenance, operations and management of all parts of the wastewater collection system.
- Provision for adequate capacity in the collection system to convey peak flows.
- Minimize the frequency of sanitary sewer overflows (SSOs).
- Mitigate the impact of SSOs.

The SSMP objectives are outlined, implemented, evaluated Sewer Maintenance and Preventative Maintenance Program include:

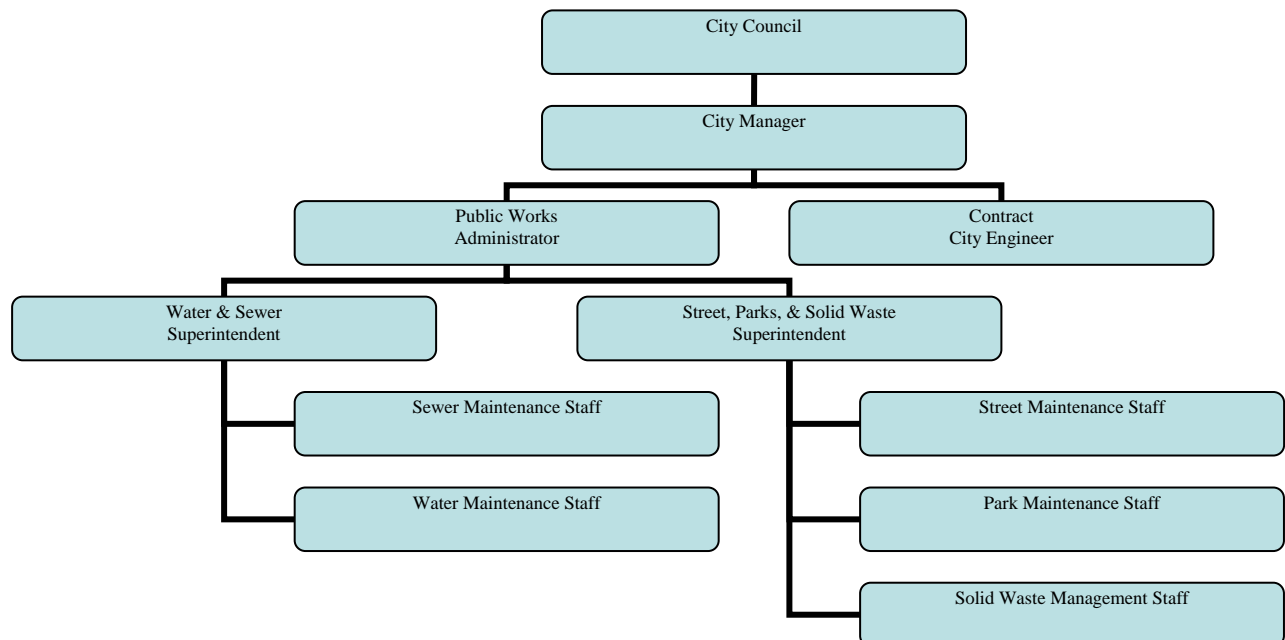
1. Increase Preventative Maintenance on the collection system to decrease SSOs.
 - a. Clean all City sewer mains within the identified required maintenance period.
 - b. Continue with monthly, quarterly, bi-annual and annual preventative maintenance hydro-cleaning and power-rod cleaning of identified sewer mainline target (problem) areas.
 - c. Conduct a video condition assessment of each sewer mainline every five years and continuously identify areas requiring root control.
 - d. Refer sewer mains with repeat non-scheduled maintenance to Contract City Engineer for evaluation.
 - e. Conduct appropriate analysis/evaluation of SSOs utilizing historical maintenance and activity data and records and provide recommendations to reduce future risk.
2. Identify collection system blockages due to fats, oil and grease (FOG) and develop strategies to decrease backups.
3. Operate all pump stations at peak efficiency and perform preventative maintenance on equipment at all sanitary sewer pump stations.
4. Maintain records of the sanitary sewer system and respond to inquiries.
5. Assist with the development of a capital improvement program directed at maintaining the current sewer assets, improving system reliability and providing adequate future capacity.

2. Organization

2.1. Department of Public Works (DPW)

Public Works through the Public Works Administrator is responsible for oversight of the SSMP, SSO, and other related regulatory procedures. Public Works consists of Water and Sewer Maintenance, Storm Drainage Maintenance, Street/Traffic Control Maintenance, Park Maintenance, and Solid Waste Management. As related to this Sewer System Management Plan, the communication and level of responsibility is illustrated in the following chart.

2.2. Organization Chart



2.3. SSMP & SSO responsibility & communication

SSMP Implementation & Maintenance – Public Works Administrator (PWA)

The PWA shall prepare and maintain this SSMP and provide document updates to the Regional Water Quality Control Board as required. The PWA shall notify and inform the City Manager and City Council of document updates to the extent and in the manner directed by City Council.

SSO Management & Reporting – Water & Sewer Superintendent (WSS)

The WSS shall report all sanitary sewer overflow (SSO) incidents to the Public Works Administrator. The WSS shall be responsible for managing the SSO response, investigating the cause, and reporting the SSO to the appropriate parties.

SSO Response

The On Call Staff sewer staff member shall be the highest level sewer staff member on duty at the time of spill discovery and reporting. The On Call Staff shall be responsible for immediately notifying the WSS and the PWA of SSOs. On Call Staff shall take any means necessary to safely contain and redirect overflows to minimize negative impacts. All actions taken by On Call Staff shall be in accordance with prior spill response training, instruction, and individual assessment of the situation. The person acting as On Call Staff may transition to another sewer staff member during an emergency as directed by the WSS or PWA.

2.4. Chain of Communication for SSO Report

To facilitate consistent reporting procedures for the public, the Department of Public Works has implemented a one-stop call center. Emergency sewer calls, including SSOs are directly dispatched to the sewer maintenance crew during regular business hours. Off-hours, the emergency calls are dispatched to the On Call Staff thru the City Fire Department personnel.

The DPW has a process for receiving, responding to and reporting SSOs. The On Call Staff member is responsible for directing crew through the entire SSO event from response, to mitigation, cause removal and clean-up. The On Call Staff member is also responsible for ensuring photographs are taken and all necessary paperwork is completed in full. After the event, the On Call Staff member is responsible for communicating the details of the event to the WSS or the PWA.

The Public Works Superintendent is responsible for timely reporting of the incident to the appropriate agencies, as well developing a plan to increase or change preventative maintenance activities to prevent future spills.

- The DPW customer service phone line (530 458-4941 ext 101) is staffed Monday through Friday 8am to 5pm excepting holidays to receive all incoming calls. After normal business hours, all emergency calls are forwarded thru the City Fire Dept. who then notifies On Call Staff of emergency.
- Once a report of an SSO is received (or internal staff witness an SSO), the On Call Staff member is contacted immediately via pager and/or cell phone. If the spill is a Category (i) SSO (see terms and definitions), the On Call Staff contacts the Water & Sewer Superintendent and Public Works Administrator immediately.
- On Call Staff will dispatch additional personnel and/or pump equipment contractor if necessary for assistance with mitigation, blockage clearing and clean-up. Colusa County Environmental Health Dept. is notified as necessary for water samples.
- On Call Staff takes photographs and completes SSO reporting forms.
- Water & Sewer Superintendent then contacts appropriate agencies, completes appropriate forms, submits online reports, and compiles all information and photos into SSO logs.

- On Call Staff reviews information with the Water & Sewer Superintendent and Public Works Administrator and a plan is developed for preventative maintenance activities at the spill location as necessary.
- Copies of SSO logs are shared with office staff for input and training.

3. Legal Authority

3.1. General

The City of Colusa has a comprehensive sewer use and fee ordinance identified as Chapter 15 of the City of Colusa Municipal Code (CCMC). The Chapter is available at the Public Works Customer Service counter at City Hall.

Chapter 15 consists of the following sections

Section	Title
15-1	Definitions.
15-2	Sewer service and connection charges generally.
15-3	Collection of sewer service charges.
15-4	Disconnection of sewer service for failure to pay service charges.
15-5	Requirements for sewage disposal into sewage system; prohibited materials and substances.
15-6	Discharge of cooling system water into sanitary sewer systems.
15-7	Connection of air conditioning, refrigeration, etc., units to sewer system.
15-8	<i>(Repealed)</i>
15-9	Grease, oil and sand interceptors.
15-10	Control manholes for building sewers carrying industrial wastes.
15-11	Inspections.

3.2. Preventing illegal discharges

Section 15-5 of the Municipal Code defines illegal discharges into the sewer system. These materials include but are not limited to high temperature (150°F) liquids or vapors, fat or oil or grease (FOG) materials, gasoline and other hazardous materials, non-sink disposal materials, corrosive and reactive materials, non-sewage water such as stormwater or well water or garden water, chemicals for breaking down grease in grease traps, and any other substance deemed harmful to the sewer collection system or at the waste water treatment plant.

3.3. Requirement for proper design & construction

Standards for design and construction of sewer systems and private lateral connections are controlled by the City's latest Public Works Improvement Standards. The latest Standards were adopted by City Council Resolution 07-38 on November 20, 2007. Subdivision and Improvement Standards enforcement is defined in Chapter 17 Section 26 of the CCMC.

3.4. Ensuring access for maintenance, inspection and repair of city owned or maintained laterals

The City does not maintain private lateral sewer lines. Property owners are responsible for proper installation, operation and maintenance of both upper and lower laterals, including laterals on the City-owned easement. Property owners are required to obtain permits from the

Department of Public Works for work on private properties and for work in the public right-of-way.

Chapter 15 Section 11 of the CCMC provides authority for the City to enter private property to inspect, observe, measure, sample and test sewer laterals and sewage in all systems connecting to a City sewer main.

3.5. Limiting discharge of fats, oils, and grease and other debris that may cause blockages

Chapter 15 Section 9 allows the sewer superintendent to require FOG interceptors in any connection except private living quarters or dwelling units. The sewer superintendent makes final decision on the type and size of interceptor used and must require that the interceptor is easily accessible for cleaning and inspection. The owner is required to maintain the interceptor for continuous, efficient operation.

3.6. Enforcing violations of the sewer ordinance

The sewer ordinance is enforced through California State Government Code Section 36900.

4. Operations and Maintenance Program

4.1. Collection System Maps And Information

The Department of Public Works maintain electronic records of sewer assets through a combination of methods including ESRI's ArcGIS, Autocad's Map 3D, as well as paper maps. Currently, paper maps and maintenance log records are the primary method for recording maintenance, repairs, and upgrades to those assets. System maps are available at the Water & Sewer Division office at the City's Wastewater Treatment Plant and the City Hall in the Public Works Department.

4.2. Preventative Operations And Maintenance

The Public Works Sewer & Water Operations and Maintenance Division (Sewer Maintenance) has developed several maintenance approaches for the sewer collection system. Citywide mainline cleanings, ongoing preventative maintenance of problem areas, use of closed circuit camera inspections (CCTV) of mainlines, along with coordination with the Building Department to ensure that FOG nuisance facilities incorporate the appropriate capture devices.

The Water & Sewer Division of Public Works is responsible for these collection system management goals:

- Proper maintenance, operations and management of all parts of the wastewater collection system.
- Provision of adequate capacity in the collection system to convey peak flows.
- Minimize the frequency of sanitary sewer overflows (SSOs).
- Mitigate the impact of SSOs.

Objectives of Water & Sewer Department's Preventative Maintenance Program include:

1. Increase Preventative Maintenance on the collection system as necessary to decrease and ideally eliminate SSOs.
 - a. Clean all sewer mains within the identified required maintenance period.
 - b. Continue with monthly, quarterly, bi-annual and annual preventative maintenance hydro-cleaning and power-rod cleaning of identified sewer mainline target (problem) areas.
 - c. Conduct a video condition assessment of each sewer main every ten years and continuously identify areas requiring root control.
 - d. Refer mains with repeat non-scheduled maintenance to the City Engineering Department for possible Programming in the Capital Improvement budget to replace or repair such sections of the system.
 - e. Conduct appropriate analysis/evaluation of SSOs utilizing historical maintenance and activity data and records and provide recommendations to reduce future risk.
2. Identify collection system blockages due to fats, oil and grease (FOG) and develop strategies to decrease backups.
3. Operate all pump stations at peak efficiency and perform scheduled preventative maintenance on equipment.

4. Maintain records of the sanitary sewer system and respond to inquiries in a timely manner but no later than two days.
5. Assist with the development of a capital improvement program directed at maintaining the current sewer assets, improving system reliability and providing adequate future capacity.

4.3. Rehabilitation and Replacement Plan

Public Works developed a Wastewater Collection System Master Plan in 2009 that, along with identifying future facility needs, identified existing system deficiencies. This Master Plan, along with the Preventative Operations and Maintenance Program, are used to maintain a comprehensive list of sewer facilities that require rehabilitation and/or replacement.

The City dedicates approximately 2% of the valuation of the collection system for annual rehabilitation and repair. This funding is in addition to any major line replacement or pump station upgrades identified in the five year capital improvement programs. The funding has been established to make prioritized line repairs identified in the annual and five year CCTV condition assessment of the collection system. This program prioritizes the repair of structural defects to ensure the system can consistently provide service and also prioritizes repair of defects such as protruding taps and roots that can or may cause SSOs.

4.4. Staff Training

The Water and Sewer Division staff is required to complete various types of training as listed below. Division staff responsible for maintenance is encouraged to study, prepare for and take CWEA Certification testing.

Sewer Related Training Courses

CORE	SSMP Customer Service Sexual Harassment Cultural Diversity
EQUIPMENT	Sewer Main Cleaning (Powerrodder, Hydrojet, HydroSaw, Flail) Commercial Drivers License Chainsaw Backhoe/Loader
OPERATIONS	Confined Space Gas Detection CWEA Certifications Shoring Traffic Control USA Locating SSO Prevention STOPPP
PUMP CREW	Electrical training Pump Repairs
EMERGENCY	Hazmat

MEDICAL TRAINING Emergency Evacuation Plan
 Blood Borne Pathogen
 Dehydration / Heat Stroke
 First Aid Training
 CPR

4.5. *Equipment and Replacement Part Inventories*

The Water & Sewer Division staff is responsible for keeping an inventory of critical replacement parts for repairing pump stations, mains, manholes, and critical emergency response equipment. The following is a list of critical replacement parts that are to be kept and maintained at City facilities.

Critical Parts List

Manhole Lids & Frames
Pipe (6" – 10")
Repair Couplings
Emergency Response Kits
Sand, Gravel & Asphalt
1x 2" Pump
2x 3" Pumps
1x 6" Pump
2x Backup Generators
Electrical Connector Kits

4.6. *Operations & Maintenance Program Goals May 2010 – May 2013*

- Compliance with Preventative Maintenance Targets
- Upgrade root removal equipment and improve maintenance program
- Survey remaining City maintained mains and laterals and incorporate into mapping system and preventative maintenance program
- Identify manholes that have a history of overflowing, or are in locations that cannot be monitored, and install remote sensing devices.
- Further develop contingency equipment and replacement part inventory
- Maintain training and CWEA certification requirements for collection system maintenance workers.

5. Design and Performance Provisions

5.1. Design and Construction Standards and Specifications

The City of Colusa maintains “Improvement Standards” and “Construction Specification” adopted by City Council in November 2007. The standards are the primary documents used for installation of new or upgrading of existing sewer systems including mains, laterals, manholes, pump stations, etc. Both the Improvement Standards and Construction Specifications were adapted from the County of Sacramento’s documents. County of Sacramento 2004 Technical Provisions 11 through 50 were adopted as a whole with some minor terminology corrections identified at the end of the Colusa Construction Specification.

The Improvement Standards and Construction Specifications are available to download on the City’s website (<http://www.cityofcolusa.com/>) and for inspection at Public Work Department at City Hall.

5.2. Standards for Inspection & Testing of New, Rehabilitated, and Replaced Facilities

The City of Colusa maintains “Improvement Standards” and “Construction Specification” is described in the previous section 5.1. As such, all new, rehabilitated and replaced sewer facilities require inspection involving pressure testing, mandrelling, water exfiltration and/or post construction closed circuit television inspection overseen by a City construction inspector prior to acceptance work.

6. Overflow and Emergency Response Program

6.1. General

The purpose of the Sanitary Sewer Overflow and Emergency Response Program is to ensure that the City personnel follow established guidelines in responding to, stopping, containing, cleaning and decontaminating sanitary sewer spills and follow proper reporting procedures

The City of Colusa has developed a comprehensive SSO response plan as a separate document from this SSMP. The SSO plan is provided to all sewer maintenance and operation staff and regular training is conducted to limit the response time between a reported spill and containment/management of the spill. The SSO plan is available at Colusa City Hall.

The Sanitary Sewer Overflow & Backup Response Plan contains eight key sections as listed below.

1. Purpose & Definitions & Claims Handling
2. Customer Relations Practices
3. Process/Procedure for Receiving a Sewage Overflow/Backup Report
4. Process/Procedure for Responding to a Sanitary Sewer Backup
5. Process/Procedure for Responding to a Sanitary Sewer Mainline Overflow
6. Process/Procedures for Using the City's Powerrodder to Clear a Line Blockage
7. Emergency Contact Information (Vendors, Equipment, & Personnel)
8. Postings (Warning Signs and Public Notifications)

6.2. Role of Responders

Responders to SSOs are required to take the appropriate action to secure the wastewater overflow area, relieve the cause of the overflow and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and to protect the environment. All responder should be familiar with and carry a copy of the City's SSO response plan. **Every effort must be made to prevent sewage from reaching state waters.**

6.3. Legal Requirements

The City must report all SSOs to the Office of Emergency Services (OES) in accordance with CA Water Code Section 13271. OES will notify other state agencies of the spill, including CA Department of Fish and Game, CA Highway Patrol, CA Department of Health Services, CalTrans, US Environmental Protection Agency and US Fish and Wildlife Service. City must report SSO to County Health offices in accordance with CA Health and Safety Code Section 5410 et seq.

1. The penalty for failure to report an SSO to OES is up to \$20,000 or 1 year in prison. The individual responding will be responsible for taking the proper steps; otherwise he/she will be subject to fines or jail time.
2. Sewage spills over 1,000 gallons or that occur in environmentally sensitive area or areas with substantial public health risk must be reported to the Waterboard as soon as possible. The RWQCB may seek Judicial Liability fines of up to \$20.00 per gallon.

3. Sewage spills that enter or may enter the waters of the State must be reported to the local health officer immediately. The penalty for failure to report is \$500 to \$1,000 and/or 1 year in prison. The local health officer must order abatement of the contamination. In the event that contamination occurs in waters used for body-contact sports, the dischargers must reimburse the cost to mitigate the contamination.
4. Regional Water Quality Control Board can seek an injunction against dischargers requiring abatement of the contamination. Individuals responsible are guilty of a misdemeanor.
5. Materials that are harmful to fish, plants or birds are prohibited from being discharged to waters of the State. The civil penalty for violation, which can be assessed by the Department of Fish and Game, is not more than \$25,000 per violation.

6.4. Incident Notification

The SSO Plan identifies specific procedures, agencies, and contact number to be notified in the case of an overflow. The following is of City personnel, external agencies, and vendors that are included in the SSO plan.

City Agents

One-Stop Call (Fire Dept): **530 458-7721**/ 24 hours per day, 7 days per week

Public Works Customer Service: **530 458-4941 x 101** during regular business hours

Public Works Director: 530-458-5622 x107 during regular business hours

External Agencies

Office of Emergency Services: 800-852-7550

Colusa Environment Health Services: 530-458-0395

Central Valley RWQCB (5S): 916-464-3291

7. Fats, Oils and Grease (FOG) Control Program

The Water & Sewer Division evaluated its cleaning program and impact of FOG on City operations. Historical records and experience indicated the FOG related issues are minimal to non-existent. However, the Division is planning on implementing basic source inspection schedule and procedures. The following is an outline of the existing FOG program and future expansion on that program.

7.1. Public Education and Outreach

The Water & Sewer Division, starting in 2010, will inspect businesses and agencies that are sources of FOG releases. During those visits, division personnel will talk with the business owners and their workers about the impact of FOGs to the collection system and the wastewater treatment plant. They will provide the business with literature that clearly explains the responsibility of the business, the affect of FOG, the legal liability of releasing FOG, and method of control and disposal.

7.2. Disposal

The City is not capable of collecting or disposing of FOG. The following is a list of known agencies and facilities that can and will accept FOGs outside of the City

FOG Collection: North State Rendering 530-343-6076

7.3. Legal Authority

There are two primary sections of the City Municipal Code that provides the City of Colusa the legal authority to inspect, enforce, and punish violators of FOG releases. Section 15-5(b) forbids release of any FOG materials. Section 15-9 provides the City with the authority to require businesses to install FOG prevention devices. Section 15-11 provides the City the authority to inspect all businesses and residences for all sewer related concerns.

7.4. FOG Device Management

Records of fat, oil, and grease source management devices are maintained by the Water and Sewer Division. Records are kept for all businesses that are required to install and maintain FOG devices by their City operating permit. All businesses are required to maintain records of FOG device maintenance including disposal logs that track the date FOG waste was removed, quantity removed, disposal company, and disposal location. All FOG releases into the collection system must be reported within 24 hours of the release.

7.5. Inspection and Enforcement

FOG interceptor and maintenance logs will be inspected annually at a minimum by Public Works Staff, Code Enforcement, or a designated agent. Any establishment that is found to be in violation of FOG ordinances will be subject to more frequent inspection at the discretion of the City.

All business that require FOG interceptors will receive education and outreach as described in section 7.1 during the annual inspections for more frequently.

7.6. FOG Hot Spots

There are no known locations within the City collection system that is subject to blockage from fats, oils or greases. If a hot spot is identified then it the location and frequency of cleaning will be updated in this section.

7.7. Source Control Measures

The City provides education and outreach through methods described here in Section 7.1. If additional measures are established then this section will be updated.

8. System Evaluation and Capacity Assurance Plan (SECAP)

The City of Colusa completed, in March 2009, a Wastewater Collection System Master Plan (WCMP). This entire SECAP section will refer to the WCMP when providing pertinent information for the following reporting information. The WCMP is available at City Hall or on the City's website, <http://www.cityofcolusa.com>.

8.1. Evaluation

The City of Colusa has not experienced a Sanitary Sewer Overflow (SSO) within the past ten years. There are no records of any SSO experienced beyond that time frame and none are believed to have occurred.

The WCMP has identified realistic conditions in which an SSO could occur in the existing system. A detailed model of the collection system during peak wet weather conditions of a 10-year 6-hour storm event, revealed that three of the City's sewer pump stations are undersized. During this storm scenario, wastewater backs up in the system and potentially overflow from discrete manholes. An illustration of the overflow scenario is provided in Figure 3-1 of the WCMP. Capital Improvement projects have been identified that release all of these conditions.

Furthermore, as the City grows to the year 2025 as provided for in its General Plan Update², further expansion of the wastewater collection system is required. The growth scenarios and corresponding upgrades/expansions of the system are analyzed and describe in the WCMP.

8.2. Design Criteria

The WCMP, along with the City's Improvement Standards, establish design criteria for any reconstruction or expansion of the wastewater collection system. All design criteria meet the necessary requirements to provide adequate operation of the existing and future collection system.

8.3. Capacity Enhancement Measures

Identification of capacity enhancements necessary to resolve capacity deficiencies is provided in the WCMP. The WCMP identifies short-term and long-term hydraulic deficiencies, analyzes alternatives, and provides costs for each alternative. The costs identify potential User Assessment Fee increases to resolve existing deficiencies and Impact Fees to be assess to new development.

The City began the process of collecting the necessary funding to upgrade the deficient sewer pump station in 2009. Through Resolution 09-36, the City raised sewer user rates. A portion of the rate increase is for upgrading the sewer lift station as identified in the WCMP. A formal schedule for the improvement has not been developed but the intension is to begin design of at least one sewer lift station by the end of 2010.

The specific projects and cost estimate are list in the following table:

² City of Colusa General Plan Update October 2006

Project Title	Description	Cost Estimate
Indian Oaks	SCADA improvements & emergency generator	\$181,250
Primary	Upsize pumps; SCADA improvements & emergency generator	\$746,750
Ross	Convert to submersible; SCADA improvements & emergency generator	\$529,250
South Wescott	Upsize pumps; SCADA improvements & emergency generator	\$928,000
Supply Yard/Screens	Upsize pumps; SCADA improvements & emergency generator	\$746,750
Wye	SCADA improvements & emergency generator	\$181,250
At Wastewater Treatment Plan	SCADA antenna	\$58,000

8.4. Schedule

A formal schedule to implement the Capacity Enhancement Measures has not been developed since the City is in the process of seeking grants and loans to finance the project.

9. Monitoring, Measurement, and Program Modifications

The Public Works Department (PWD) strives toward proper maintenance, operations and management of the sanitary sewer collection system. Efforts focus on reducing SSO frequency and impacts, improving collection system reliability, and ensuring there is enough capacity in the system to convey peak flows. The following information refers to what data is collected on a daily basis and how that data is used to analyze sewer collection system performance, structural and maintenance related problems, crew productivity and overall success of maintenance and capital improvement programs.

9.1. Data Collection

PWD utilizes SEMS Wastewater and Asset Management software to schedule and record all collection system maintenance activities, to maintain an inventory and parts list of all critical components of the pump stations, and as a backup of all procedure and emergency contact documentation. A GIS database of the system is maintained by the City Engineer and updated system maps are produced regularly for maintenance personnel.

9.2. SSMP Implementation & Effectiveness Measurements

The PWA and City Engineer review the implementation and effectiveness of the SSMP on an annual basis. This review is based upon the eleven elements this SSMP. The next table lists each component and how SSMP implementation and effectiveness is measured. A report is prepared annually responding to each measurement for records and for action. If the answer to any of these measurements/questions is NO then the report will identify the problem, propose resolution options, make recommendations, and provide a resolution completion dates.

SSMP Component	Standard Measurements (Section Reference)
Goals (Element 1)	Are all of the goals (1) identified in the SSMP appropriate and accurate?
Organization (Element 2)	Is organization chart (2.2) and SSMP & SSO responsibility (2.3) appropriate and current?
	Is the chain of communication (2.4) for report and responding to SSO appropriate, accurate, and current?
Legal Authority (Element 3)	Does the SSMP contain excerpts from the current Colusa Municipal Code documenting the City's legal authority to:
	Prevent illicit discharges? (3.2)
	Require proper design and construction of sewers and connections? (3.3)
	Ensure access for maintenance, inspection, or repairs for portions of the laterals owned or maintained by the City? (3.4)
	Limit discharges of fats, oils and grease? (3.5)
	Enforce any violation of its ordinance? (3.6)
	Were there any difficulties enforcing sewer issues that did or could result in SSOs? Such issues could include FOG, laterals, sewer connections, assessment fee collection. Explain how the legal authority of the City was or will be enhanced.

Operations & Maintenance (Element 4) O&M (4.2)	Are the wastewater collection system maps complete, current, and sufficiently detailed? (4.1)	
	Were there any SSOs that were preventable with proper O&M	
	Was the O&M schedule followed as written?	
	Does the SSMP describe current preventative maintenance activities, list all hot spots for prioritizing the cleaning of sewer lines?	
	Based upon the SSO information in CIWQS, are the City's preventative maintenance activities sufficient and effective in minimizing SSO and blockages?	
Rehabilitation and Replacement Plan (4.3)	Were there any SSOs there were preventable due to incomplete CIP scheduled projects?	
	Was the CIP followed and if not then should the CIP be revised?	
SSMP Training (4.4)	Are all sewer staff members and emergency response personnel aware of and familiar with the SSMP?	
	Has sewer staff receive the appropriate training for their position?	
	Are the training records complete and current?	
Equipment & Replacement Parts (4.5)	Does the SSMP list the major equipment and parts needed for daily O&M and for emergency collection system repairs, response including during pump station failure?	
Design & Performance Standards (Element 5)	Does the SSMP contain current design and improvement standards for the installation of new sanitary sewer systems, lifts stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer system?	
Overflow and Emergency Response Plan (Element 6)	Are the spill response procedure up to date?	
	Are all sewer staff members and emergency response personnel and contractors trained on SSO response procedures?	
	Is the SSO external reporting requirements and contact information current?	
	Are the one-stop and other emergency contact information complete and current?	
	Did responders to SSOs during the past year respond according to procedure and do the procedures need improvement?	
	FOG Control Program (Element 7)	Were their any FOG related spills or near spills and if so is any additional enforcement, education, or preventative measures required?
		Were all sources of FOG inspected during the year?
Is the current FOG Control Program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system?		
System Evaluation and Capacity Assurance Plan (Element 8)	Is there evidence that system capacity at any location is deficient due to system demand? (for example, were their any SSOs or near SSO that could not be explained by blockages or failures of the pipes or pump stations?)	
	Does the City's capital improvement program (CIP) account for all known major deficiencies that can not be correct with the O&M budget?	

	Are all CIP project on schedule for budgeting and construction?
Monitoring, Measurement and Capacity Assurance Plan (Element 9)	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?
	Is the City able to sufficiently evaluate the effectiveness of SSMP elements based on relevant information?
	Do the implementation and effectiveness measurement questions in this list need to be added to or enhanced?
SSMP Program Audits (Element 10)	Were the results of prior SSMP Audits recorded in a written report?
	Were the actions recommended in the SSMP Audit reports(s) implemented?
Communication Program (Element 11)	Does the City effectively communicate with the public and other agencies about the development and implementation of the SSMP and continue to address any feedback
	Is the City's website updated with the most recent communications as required by the program?

9.3. Measuring Preventative Maintenance Success

The report outlined in Section 9.2 is used to measure the success of the preventative maintenance program.

9.4. SSMP Element Updates

The SSMP will be formally reviewed and as necessary, updated at minimum every five year to reflect changes to how the City manages its wastewater collection system, perform SECAP analysis, and make other changes require by the State. The updated SSMP will be filed with the State every five years as required by the City's permit. The next required SSMP update and filing is August 2, 2015.

The report outlined in Section 9.2 is used to determine incremental updates to the SSMP.

9.5. SSO Reporting

In addition to the reporting requirement of Section 9.3, the PWD will prepare annually a report detailing every SSO incident and comparing the current year SSOs with the previous five years or more. A list of the past year's SSO incident shall include location, date, frequency, and volume.

The SSOs will be reports with the following structure:

NUMBER OF SSOs			
Size of SSO (gallon)	current year	previous year	...fifth year
Greater than or equal to 1,000			
From 100 to 999			
From 10 to 99			
Less than 10			

Total			
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TOTAL VOLUME (gal)

	Current year	previous year	...fifth year
Total volume contained and returned to sewer system			
Total volume reaching waters of the State			
Total volume contained but not reaching waters of the State (everything else)			
Total			

CAUSES OF SSOs (current year)

	# in Main	# in Lateral
Blockages		
Roots		
Grease		
Debris		
Debris from laterals		
Vandalism		
Animal Carcass		
Construction Debris		
Multiple Causes		
Subtotal from Blockages		
Infrastructure Failure		
Inflow & Infiltration		
Electrical Power Faulure		
Flow Capacity Deficiency		
Natural Disaster		
Bypass		
Cause Unknown		

The tables above do not include SSOs that occurred from private sewer service laterals within the City of Colusa jurisdiction that were caused by conditions in privately-owned laterals or on private property. The property owners are responsible for the condition and the operation of those sewer service laterals.

10. SSMP Program Audits

The City is required to conduct internal audits at least every two years. All audit reports must be kept on file. The audits must, at a minimum, evaluate the effectiveness of the SSMP and the City's compliance with its own SSMP. More specifically, the audit must identify any deficiencies in the collection system and document the actions taken to correct them.

The City will typically conduct the audits with City Staff. The City may choose to include representatives from other agencies and/or independent contractors to perform portions of or an entire audit. At a minimum, the Audits will be based up the SSMP Implementation and Effectiveness Measurements provided in Section 9.2.

11. Communication Program

The Public Works Department realizes the importance of clear and informative communication with our residential and commercial customers. The primary method of communication is through the City's website, the address of which is <http://www.cityofcolusa.com/>. The City communicates information about this SSMP and its preventative maintenance in the following manner and to the following groups.

FOG Program

As defined in Section 7, the City will communicate the FOG program to businesses and agencies that the City has determined are sources of FOG. The City will provide FOG related fliers and discuss the program to each business during annual FOG intercept inspections and more frequently as needed.

Sewer Lateral Maintenance

The City communicates to all its residents and businesses regarding their responsibility and ownership of the sewer laterals connected to the City's wastewater collection system by way of the City's website listed above. This information includes this SSMP, lateral ownership responsibility, who to contact during an emergency such as an SSO, latest design and connection requirements, and other sewer related subjects.

SSMP Performance

Following the internal audits of the SSMP as defined in Section 10, the City posted the audit report on its website listed above. Anyone wishing to provide input regarding the SSMP, the audit, or other related subject is welcome to attend the regularly schedule City Council meetings. The dates and times of these meeting are provided on the website.