

Executive Summary

The State Water Resources Control Board (State Water Board) has, by Order No. 2006-0003, required public agencies that own or operate sanitary sewer systems to develop and implement a Sewer System Management Plan (SSMP) aimed at reducing sanitary sewer overflows (SSOs). It has also required agencies to report electronically all SSOs to the Board.

The SSMP must describe how the City of Modesto constructs, manages, operates and maintains its sanitary sewer system by addressing each of the 11 elements of the plan. These elements are summarized below:

- Goals of the SSMP
- Organization and Chain of Communication for SSMP's
- Legal Authority to Operate & Maintain Sewage Collection Systems
- Sewer Collection System Operation and Maintenance Program
- Sewer Collections System Design and Performance Program
- Sewer Overflow Emergency Response Plan
- Fats, Oil and Grease Control Program
- Collection System Evaluation and Capacity Assurance Plan
- Operation and Maintenance Monitoring, Management and Plan Modifications
- SSMP Program Audits
- Communication Program with Public and Stake Holders

Following is a summary of the City of Modesto's SSMP:

Goals

The goals of the SSMP are to enable the City to achieve the following:

- Eliminate/minimize both dry and wet weather sanitary sewer overflows.
- Mitigate the impact of sanitary sewer overflows that do occur.
- Properly manage, operate and maintain all parts of the wastewater collections system.
- Provide adequate capacity to convey peak flows.

Organization

The names and positions of staff responsible for developing and implementing the SSMP are as follows:

- Interim Director of Public Works: Dennis Turner
- Deputy Director: Gary DeJesus
- Wastewater Collections Manger: Vacant
- Wastewater Collections Supervisor: Jack Cooke
- Environmental Regulatory Compliance Administrator: Thomas Sinclair

Legal Authority

The City has the legal authority to construct, maintain and operate its sanitary sewers as well as implement and enforce the requirements of the SSMP. The following principal documents are located on line at modestogov.com and provide the City with its authority:

- The City's Standard Specification and Standard plans provide the required design and construction standards for new and rehabilitation sewers and sewer connections. (Appendix C)
- Modesto Municipal Code Title 1 General Provisions Chapters 2 and 3 (Appendix A)
- Modesto Municipal Code Title 5 Sanitation & Health Chapters 1, 6 and 10

Operations and Maintenance Program

The sanitary sewer system collection system consists of approximately 641 miles of sewer pipes, 12,571 manholes, 39 lift stations and other related infrastructure. The City operates and maintains the sanitary sewer system through a balanced sanitary sewer maintenance program that includes the following elements.

System Inventory and Mapping – The City's sanitary sewer collection system assets are fully inventoried in a GIS database system that is able to provide full mapping capabilities and asset attribute descriptions. The City of Modesto currently has an Intern in our Information Technology Dept. updating the GIS database. A full time position has been approved for FY11 to keep this database updated..

Preventative Operation and Maintenance – The City consistently monitors sanitary sewer blockages and other conditions that indicate the need for regular cleaning and maintenance. Routine cleaning cycles are established and performed on based on a rotational basis or more frequently if assessments warrant. Routine cleaning cycles range from 3- to 5-years and accelerated cleaning cycles range from monthly to bi-annually. Regular scheduled maintenance is also performed on all lift stations.

Rehabilitation and Replacement – The City has a 20-year Sanitary Sewer Capital Improvement program designed to adequately manage system capacity and rehabilitation and replace infrastructure. The City’s current 2008-2028 sewer CIP is approximately \$177 million dollars.

Training – City staff responsible for maintaining the sewer system are thoroughly trained and experienced in performing the duties required to safely and effectively operate and maintain the sewer system. Employees are trained to follow standard operating procedures for all sewer cleaning, repairs, emergency response and other maintenance functions. Employees are trained to be competent in the safe operations of vehicles and equipment necessary to clean and maintain our sanitary sewer system. Employees are also rotated among different crews and sections to learn new skills and maintain existing skills.

Contingency Equipment & Replacement Inventories – The Fleet Services Division works closely with the Operations and Maintenance staff to ensure vehicles are functioning properly and safely. Replacement equipment needs are evaluated annually and considered during the budget process.

Condition Assessment – The City is currently performing physical condition assessments on a daily basis during routine and accelerated maintenance efforts. The assessment is critical in identifying future system rehabilitation and replacement priorities and funding needs.

Design and Performance Provisions

The City utilizes industry standards, as well as its own design, construction, and performance provisions, for the installation of new sanitary sewer systems and the rehabilitation or repair of existing systems. These standards and provisions include, design procedures, construction standards and material specifications that are necessary to have an effective sewer system. The following are the documents where these standards and provisions are found:

- The City of Modesto Standard Specifications and Standard Details for Construction
- The City of Modesto Design Guidelines for Sanitary Sewers
- The City of Modesto General Provisions for Sanitary Sewers
- The National Public Works Standards (Green Book)

Overflow Emergency Response Plan

The City responds to sanitary sewer overflows and other sewer emergencies according to a well established emergency response plan. This plan covers the necessary procedures and timeframes for properly handling an incident and mitigating its impacts including:

- Incident assessment
- Personnel contact and deployment
- Maintenance actions
- Environmental impact mitigation measures
- Public notification
- Internal communications and reporting
- On-going incident and system monitoring

FOG Control Program

Fats, oils and grease (FOG) are the primary reason for majority of our sanitary sewer blockages. FOG is introduced into the sewer system from various sources, including residences, industrial businesses and restaurants. The City has hired Holmes International to assist in the development and implementation of a FOG Control and Prevention Program. Currently, the City's FOG program provides a balanced approach to address the problem as summarized below:

Building Design and Construction Standards -- The City requires that grease removal devices be installed in certain applications, such as restaurants. Procedures are in place to ensure this occurs during the plan review, permit issuance and inspection processes.

Standard Restaurant Inspections – Currently the City inspects Restaurants and other food service facilities only when other indicators indicate or other situations arise.

Sewer Pipe Investigations – Inspectors will investigate areas of concern where there is an indication that excess grease is accumulating to determine the source of FOG. If identified, appropriate actions are taken to eliminate the source.

Outreach – The City performs a number of outreach efforts to inform the public about the problems caused by FOG and how to reduce or eliminate them. This includes informational inserts with utility bills which are sent to residential and business rate payers and occasionally local media pieces.

System Evaluation and Capacity Assurance Program

In 2007, the City of Modesto adopted its Wastewater Collection System Master Plan. This plan takes advantage of new computer technologies and graphical data along with flow monitoring, rainfall data and any rainfall infiltration and inflow analysis to develop proper hydraulic models and capacity needs. This information is combined with various planning scenarios to identify sewer system deficiencies and drive the Sanitary Sewer Capital Improvement Program Plan.

Monitoring, Measurement, and Plan Modifications

Monitoring, managing and modifying the SSMP are necessary to ensure its effectiveness. The City currently maintains and evaluates a number of performance indicators used to monitor and manage the SSMP, as well as the sanitary sewer Maintenance program. Some of these indicators are listed below:

- Number of SSOs per year
- % of SSOs by know cause
- Miles of sanitary sewer cleaned
- Miles of sanitary sewer lines inspected (CCTV)

SSMP Program Audits

Currently the City plans to annually evaluate the effectiveness of each element of the SSMP and will continue to work with other agencies and groups to identify and implement the best management practices through the SSMP.

Communication Program

The City has performed effective communications and outreach to the public, stakeholders and satellite agencies on the development, implementation and performance of the SSMP.

Benchmarking

The Water Quality Control Division performs benchmarking every April to review their ability to meet the Performance Goals.