



SEWER SYSTEM MANAGEMENT PLAN

Prepared for
City of Lodi, California



Holmes International

AUGUST 2009

SEWER SYSTEM MANAGEMENT PLAN

Prepared for
City of Lodi, California

By
Holmes International
In accordance with the contract
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LIST OF ACRONYMS

AB	Assembly Bill
BAT	Best Available Technology
BMP	Best Management Practice
CASA	California Association of Sanitation Agencies
CCTV	Closed-Circuit Television
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan or Capital Improvement Program and Capital Improvement Project
City	City of Lodi
CM	Corrective Maintenance
CMMS	Computerized Maintenance Management System
CDFG	California Department of Fish and Game
CWEA	California Water Environment Association
CVCWA	Central Valley Clean Water Association
EPA	Environmental protection Agency
ERP	Emergency Response Plan
EUD	Environmental Utilities Department
FOG	Fats, Oils, and Grease
FSE	Food Service Establishments
GIS	Geographical Information System
GPS	Global Positioning System
GWI	Groundwater Induced Infiltration
GWDR	General Waste Discharge Requirements and/or Waste Discharge Requirements (WDR)
I/I	Inflow / Infiltration
ICS	Incident Command System
IERP	Integrated Emergency Response Plan
IWD	Industrial Waste Division
LRO	Legally Responsible Official
MGD	million gallons per day

MRP	Monitoring and Reporting Program (amended September 9, 2013 Order 2013-0058-EXEC)
MSC	Municipal Service Center
MSDS	Material Safety Data Sheets
NPDES	National Pollution Discharge Elimination System
NRC	National Research Council
O&M	Operation and Maintenance
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services
Order	SWRCB Order No. 2006-0003-DWQ adopted May 2, 2006, amended September 9, 2013
PdM	Predictive Maintenance
PM	Preventative Maintenance
PMP	Preventative Maintenance Program
POTWs	Publicly Owned Treatment Works
R&R	Rehabilitation and Replacement
RD/II	Rainfall Dependent Infiltration and Inflow
RWQCB	Regional Water Quality Control Board
SCAP	Southern California Alliance of Publicly Owned Treatment Works
SIUs	Significant Industrial Users
SOP	Standard Operating Procedure <u>or</u> Standard Maintenance Procedure
SPWA	South Placer Wastewater Authority
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
TOC	Table of Contents
TTC	Trenchless Technology Center
USA	Underground Service Alert
WDP	Waste Discharge Permit
WDR	Waste Discharge Requirements and/or General Waste Discharge Requirements (GWDR)
WW	Wastewater
WWCS	Wastewater Collection
WWTP	Wastewater Treatment Plant

LIST OF TERMS

Authorized Representative – The person designated, for a municipality, state, federal or other public agency, as either a principal executive officer or ranking elected official, or a duly authorized representative of that person.

Blockage – Something that partially or fully blocks the wastewater from flowing through a sewer pipeline. The blockage can be caused by debris in the sewer, grease buildup, root intrusion, or a partial or full collapse of the pipeline. If not caught in time, the blockage may cause an overflow. This is also called a stoppage.

California Association of Sanitation Agencies (CASA) - CASA is a non-profit, statewide trade association representing public agencies that provide wastewater collection, treatment, disposal, and/or water reclamation services to about 90 percent of the sewered population in California.

Website: <http://www.casaweb.org/>

California Water Environment Association (CWEA) – CWEA is an association of 8,000-plus professionals in the wastewater industry. CWEA is committed to keeping California's water clean. CWEA trains and certifies wastewater professionals, disseminates technical information, and promotes sound policies to benefit society through protection and enhancement of the water environment. CWEA offers services at the state level and locally through 17 geographical local sections. Through their on-line bookstore, CWEA offers technical references for sewer system operation and maintenance.

Website: <http://www.cwea.org/> .

Central Valley Clean Water Association (CVCWA) – CVCWA is an association comprised of over 50 wastewater treatment and collection system agencies. CVCWA's mission is to effectively represent the interests of public wastewater agencies in the Central Valley in regulatory matters and to support the exchange of information so members can best meet their business challenges.

Website: <http://www.cvcwa.org/> .

Central Valley Regional Water Quality Control Board – Also known as Regional Water Board or RWQCB. The mission of this state regulatory agency is to: preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. Website: <http://www.waterboards.ca.gov/centralvalley/> .

Dynamic Model – Computer hydraulic model simulation which solves the complete dynamic flow routing equations (St. Venant's equations) for accurate simulation of backwater, looped connections, surcharging, and pressure flow in a collection system.

Enrollee – The legal public entity that owns a sanitary sewer system, as defined by the GWDR, which has submitted a complete and approved application for coverage under the GWDR. This is also called a sewer system agency or wastewater collection system agency.

Fats, Oils and Grease (FOG) - Fats, oils, and grease that are discharged into the sanitary sewer collection system by Food Service Establishments (FSE), homes, apartments and other sources. FOG is a major cause of blockages leading to increased maintenance and sometimes SSOs.

FOG Control Program – To be implemented at the Enrollee's discretion. May include public education program; plan and schedule for the disposal of FOG; legal authority to prohibit FOG related discharges; requirement to install grease removal devices; authority to inspect grease producing facilities;

identification of sanitary sewer system sections subject to FOG blockages and the establishment of a cleaning schedule for each section; development and implementation of source control measures for all sources of FOG.

Geographical Information System (GIS) – A database linked with mapping, which includes various layers of information used by government officials. Examples of information found on a GIS can include a sewer map; sewer features such as pipe location, diameter, material, condition, last date cleaned or repaired. The GIS also typically contains base information such as streets and parcels.

Governing Board – This is the governing board of the sewer entity developing the SSMP. Examples would be the Board of Directors, the City Council, or the County Board of Supervisors.

GWDR – General Waste Discharge Requirements – A GWDR is an authorization to discharge waste with certain conditions, which can be issued on an individual basis or to a group of dischargers. The Statewide General WDR for Sanitary Sewer Systems was adopted by the SWCRB and will be implemented by the Regional Water Boards and SWRCB.

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

Infiltration – The seepage of groundwater into a sewer system, including service connections. Seepage frequently occurs through defective or cracked pipes, pipe joints, connections or manhole walls and joints.

Inflow – Water discharged into a sewer system and service connections from such sources as, but not limited to, roof leaders, cellars, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, around manhole covers or through holes in the covers, cross connections from storm and combined sewer system, catch basins, storm waters, surface runoff, street wash waters or drainage. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than a leak into the sewer itself.

Lateral – The portion of sewer that connects a home or business with the main line in the street. Sometimes sewer system agencies own or maintain a portion of the lateral.

Upper Lateral: Portion of lateral from building to property line (or easement line), usually privately owned and maintained.

Lower Lateral: Portion of lateral from property line (or easement line) to sewer mainline in the street or easement. This portion of the lateral is sometimes privately owned and maintained and sometimes publicly owned and maintained.

Monitoring and Reporting Program - The Monitoring and Reporting Program established in the WDR that establishes monitoring, record keeping, reporting and public notification requirements for the GWDR.

Overflow Emergency Response Plan – Identifies measures to protect public health and the environment. A plan must include the following: notification procedure, appropriate response plan, regulatory notification procedures, employee training plan, procedures to address emergency operations, a program that ensures all reasonable steps are taken to contain and prevent discharges.

Private Lateral: That portion of the Lateral that is owned and maintained by the private property owner that it serves. Based on an individual agency's ordinance, this may just be the Upper Lateral or can include the Lower Lateral.

Preventative maintenance (PM) – Regularly scheduled servicing of machinery, infrastructure or other equipment using appropriate tools, tests, and lubricants. This type of maintenance can prolong the useful life of equipment, infrastructure, and machinery and increase its efficiency by detecting and correcting problems before they cause a breakdown of the equipment, or failure of the infrastructure.

R-Value – Is the amount of rainfall that reaches the collection system via infiltration and inflow. This value is typically expressed as a percentage of total rainfall volume that reaches the collection system.

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

Regional Water Board – Is a short name for any of the nine regional boards including the San Francisco Bay Area Regional Water Quality Control Board and the Central Valley Regional Water Quality Control Board.

Rehabilitation and Replacement Plan (also referred to as a Capital Improvement Plan) – Identifies and prioritizes system deficiencies and implements short-term and long-term rehabilitation actions to address each deficiency.

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

Sanitary Sewer Overflow Categories

- Category 1 – Discharges of untreated or partially treated wastewater of ANY VOLUME resulting from an enrollee’s sanitary sewer system failure or flow condition that:
 - Reach surface water and/or reach a drainage channel tributary to a surface water; or
 - Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond). All discharges of sewage resulting from a failure in the Enrollee’s sanitary sewer system that equals or exceeds 1000 gallons; or result in a discharge to a drainage channel and/or surface water; or discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.
- Category 2 – Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from an enrollee’s sanitary sewer system failure or flow condition that DO NOT reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
- Category 2-3 – All other discharges of sewage resulting from a failure in the Enrollee’s sanitary sewer system or flow condition.
- Private Lateral Sewage Discharges – Sewage discharges that are caused by blockages or other problems **within a privately owned lateral connected to the enrollee’s sanitary sewer system or from other private sewer assets.**

Sanitary Sewer Systems – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant head works used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities are considered to be part

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

Satellite Collection System – The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which the sanitary sewer system is tributary.

Sewer System Management Plan-SSMP – A series of written site specific programs that address how a collection system owner/operator conducts their daily business as is outlined in the WDR. Each SSMP is unique for an individual discharger. The plan includes provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis. The plan must also contain a spill response plan. Certification is offered by technically qualified and experienced persons and provides a useful cost effective means for ensuring that SSMPs are developed and implemented appropriately.

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

Stakeholder - A person or organization that has a vested interest in the development and outcome of the SWRCB Order No. 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

State Water Resources Control Board: Also called the State Board. This is the State agency that developed and passed the GWDR for collection systems and the agency that maintains the SSO reporting web site.

Static Model – A computer hydraulic model that uses the Manning’s Equation to determine hydraulic capacity of the gravity pipelines and either the Manning’s or Hazen-Williams equations to determine the hydraulic capacity of the pressure pipeline system. The capacity is compared to the peak hydraulic flow in the system to determine potential deficiencies. The static model assumes the peak hydraulic flow occurs at all locations within the collection system at the same time.

Stoppage – Something that partially or fully blocks the wastewater from flowing through a sewer pipeline. A stoppage can be caused by debris in the sewer, grease buildup, root intrusion, or a partial or full collapse of the pipeline. If not caught in time, a stoppage may cause an overflow. This is also called a blockage.

System Evaluation and Capacity Assurance Plan – A required component of an agency’s SSMP and is an important part of any agency’s overall Capital Improvement Plan that provides hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event.

Wastewater Collection System: See Sanitary Sewer System.

SEWER SYSTEM MANAGEMENT PLAN

BACKGROUND AND INTRODUCTION

A. Background

The City of Lodi (City) operates under the council-manager form of municipal government. The City Council is the elected governing board of the City. Members are elected “at-large” through regular elections. The city, a municipal corporation, consists of all the territory within the boundaries thereof, and all territory outside the boundaries thereof over which it has jurisdiction or control by virtue of any constitutional or statutory provision. The City Council is responsible for approving budgets and setting policy. The City Manager has the responsibility of management of all City Departments and all hiring of personnel, and conducts the upper level management and business of the City.

The City Attorney receives policy direction from the City Council and acts as legal advisor and counsel to the City Council., City Manager, and City Departments. The City Attorney also represents the City in litigation against the City.

The Public Works Director is responsible to plan, organize, direct, and review the activities and operations of the Public Works Department. This includes the following Divisions: [Water-Municipal Utility Services \(which includes Streets and Drainage\)](#), Engineering, [Streets and Drainage](#), Fleet and Facilities Services, and Transportation. The Public Works Director is the Legally Responsible Official (LRO) in the WDR.

The Deputy Public Works Director - Utilities has overall responsibility for the management and oversight of the entire Water and Wastewater Utilities including the Sewer System Management Plan and monitoring and reporting plan. He oversees revenue and expenses, along with operation and maintenance of the White Sough Water Pollution Control Facility, the wastewater collection system, and the drinking water system for the City.

The ~~Water Services Division~~[Municipal Utility Services](#) hired Holmes International in February 2007, to perform a comprehensive audit of the wastewater collection system practices in terms of WDR compliance. This audit produced a SSMP development plan and implementation schedule. Following the audit, the SSMP was prepared.

Service Area and Relevant Statistics:

Figure B-1 illustrates the boundary of City of Lodi’s geographical service area. Statistics provided in this SSMP are as of 2008 and subject to change over time. Statistics subject to change will be updated in the appendices and on the City’s website (www.Lodi.ca.us).

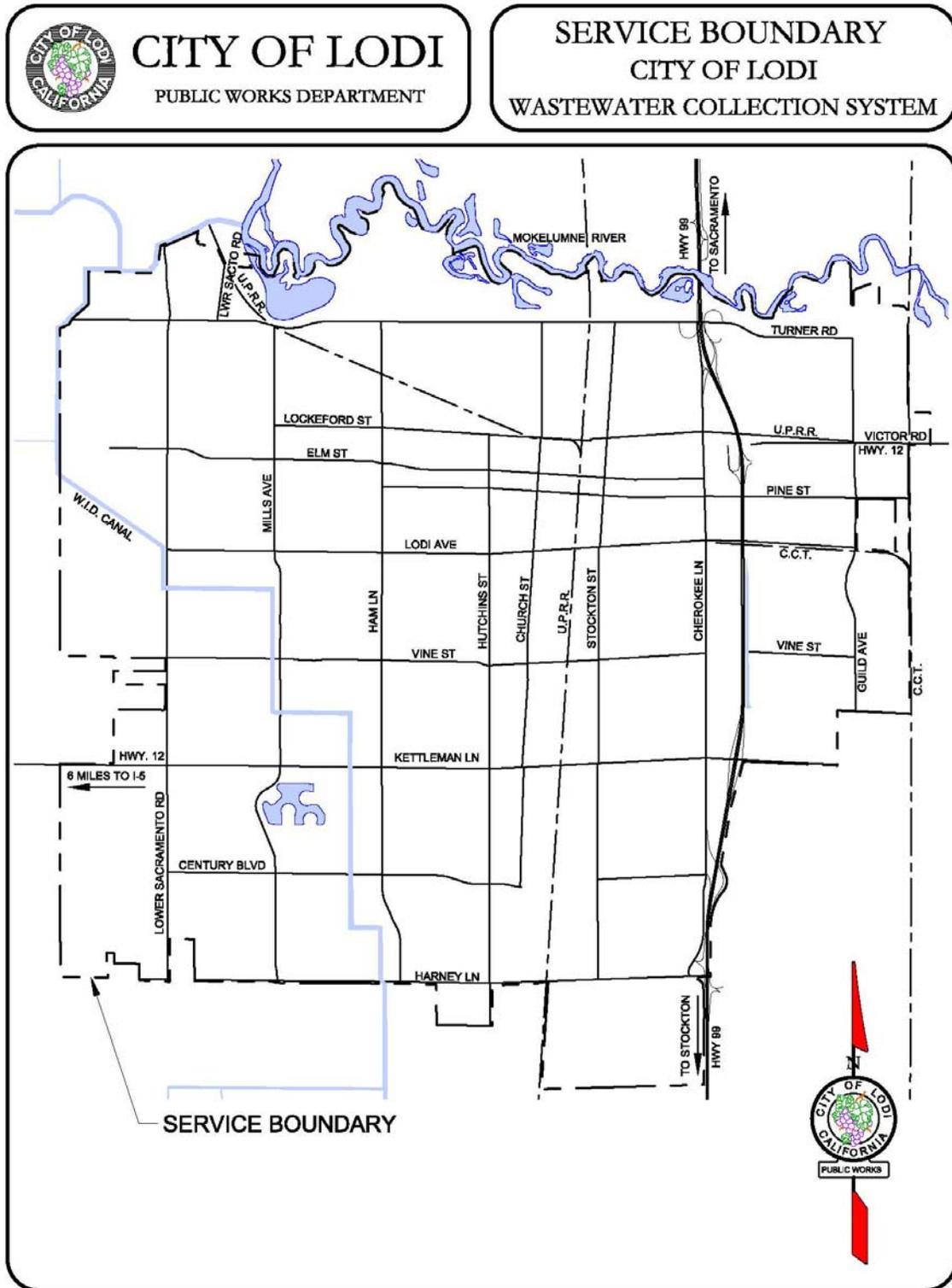


Figure B-1. Lodi Vicinity Map

The City of Lodi service area is approximately 12 square miles, has approximately 17,500 residential, 1,300 commercial and 55 industrial sewer connections and one Wastewater Treatment Plant.

The City provides service to a population of approximately 63,400 people. The wastewater collection and conveyance system consists of ~~497 miles~~ 197 miles sewer pipe ranging in size of 4” to 36” in diameter, about 3,200 manholes, and 9 neighborhood pumping or lift stations that convey an average dry weather flow of approximately 5.48.5 MGD. Sanitary sewerage is conveyed from the City’s service area to ~~White Slough Wastewater Treatment Plant~~ White Slough Water Pollution Control Facility.

B. What is a Sewer System Management Plan (SSMP)?

The California State Water Resources Control Board (SWRCB) adopted a Statewide General Waste Discharge Requirement (WDR) order No. 2006-0003 May 2, 2006. The WDR was amended by order No. 2013-0058-EXEC effective September 9, 2013. This WDR dictates each publicly owned sanitary sewer system, termed Enrollee, develop, document, and implement a Sewer System Management Plan (SSMP) and make it available to the public and State and Regional Water Quality Control Boards (RWQCB) upon request. The following paragraphs briefly summarize the key elements of an SSMP and the implementation requirements for Enrollees.

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

C. What are the SSMP Requirements?

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

Table B-1. Sewer System Management Plan (SSMP) Requirements	
SSMP Elements	Criteria
Goals	<ul style="list-style-type: none"> • Properly manage, operate and maintain all parts of the collection system • Provide capacity to convey base and peak flows • Minimize the frequency and severity of sanitary sewer overflows (SSOs) • Mitigate the impact of SSOs
Organization	<ul style="list-style-type: none"> • Identify agency staff responsible for the SSMP • Identify chain of communication for responding to and reporting SSOs
Legal Authority	<ul style="list-style-type: none"> • Control infiltration and inflow (I/I) from the collection system and laterals • Require proper design and construction of sewers and connections

Table B-1. Sewer System Management Plan (SSMP) Requirements	
SSMP Elements	Criteria
	<ul style="list-style-type: none"> • Require proper sewer installation, testing and inspection • Ability to impose source control requirements
Operation and Maintenance Program	<ul style="list-style-type: none"> • Maintain up-to-date maps • Allocate adequate resources for system operation and maintenance • Prioritize preventative maintenance activities • Identify structural equipment to minimize equipment/facility downtime • Provide staff training on a regular basis
Design and Construction Standards	<ul style="list-style-type: none"> • Identify minimum design and construction standards and specifications • Identify procedures and standards for inspecting and testing
Overflow Emergency Response Plan	<ul style="list-style-type: none"> • Provide SSO notification procedures • Develop and implement a plan to respond to SSOs • Develop procedures to report and notify SSOs • Develop procedures to prevent overflows from reaching surface waters, and to minimize or correct any adverse impact from SSOs
Fats, Oil and Grease (FOG) Control Program	<ul style="list-style-type: none"> • Develop a Fats, Oil and Grease (FOG) control plan, if needed
System Evaluation and Capacity Assurance	<ul style="list-style-type: none"> • Establish a process to assess the current and future capacity requirements • Implement a capital improvement plan to provide hydraulic capacity
Monitoring, Measurement and Program Modifications	<ul style="list-style-type: none"> • Measure the effectiveness of each SSMP element • Monitor each SSMP element and make updates as necessary
SSMP Audits	<ul style="list-style-type: none"> • Conduct audits every two years or more frequently that includes identifying deficiencies and steps to correct them
Communication Program	<ul style="list-style-type: none"> • Communicate with public (Customers) on SSMP development, implementation and performance and create a plan for communication with tributary/satellite sewer systems

D. What is the City Required to Do?

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

1. The Enrollee must comply with all conditions of the Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for enforcement action.
2. It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with the general WDR. Nothing in the general WDR shall be:
 - a. Interpreted or applied in a manner inconsistent with the Federal Clean Water Act, or supersede a more specific or more stringent state or federal requirement in an existing permit, regulation, or administrative/judicial order or Consent Decree;
 - b. Interpreted or applied to authorize an SSO that is illegal under either the Clean Water Act, an applicable Basin Plan prohibition or water quality standard, or the California Water Code;
 - c. Interpreted or applied to prohibit a Regional Water Board from issuing an individual NPDES permit or WDR, superseding this general WDR, for a sanitary sewer system, authorized under the Clean Water Act or California Water Code; or
 - d. Interpreted or applied to supersede any more specific or more stringent WDRs or enforcement order issued by a Regional Water Board.

The Enrollee shall take all feasible steps to eliminate SSOs. In the event that an SSO does occur, the Enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO.

3. In the event of an SSO, the Enrollee shall take all feasible steps to prevent untreated or partially treated wastewater from discharging from storm drains into flood control channels or waters of the United States by blocking the storm drainage system and by removing the wastewater from the storm drains.
4. All SSOs must be reported in accordance with Section G of the general WDR.
5. In any enforcement action, the State and/or Regional Water Boards will consider the appropriate factors under the duly adopted State Water Board Enforcement Policy. And, consistent with the Enforcement Policy, the State and/or Regional Water Boards must consider the Enrollee's efforts to contain, control, and mitigate SSOs when considering the California Water Code Section 13327 factors. In assessing these factors, the State and/or Regional Water Boards will also consider whether:
 - a. The Enrollee has complied with the requirements of this Order, including requirements for reporting and developing and implementing a SSMP;
 - b. The Enrollee can identify the cause or likely cause of the discharge event;
 - c. There were no feasible alternatives to the discharge, such as temporary storage or retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, collecting and hauling of untreated wastewater to a treatment facility, or an increase in the capacity of the system as necessary to contain the design storm event identified in the SSMP. It is inappropriate to consider the lack of feasible alternatives, if the Enrollee does not implement a periodic or continuing process to identify and correct problems.

- d. The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of the Enrollee;
 - e. The discharge could have been prevented by the exercise of reasonable control described in a certified SSMP for:
 - Proper management, operation and maintenance (O&M);
 - Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent SSOs (e.g., adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow (I/I), etc.);
 - Preventive maintenance (including cleaning and fats, oils, and grease (FOG) control);
 - Installation of adequate backup equipment; and
 - Inflow and Infiltration prevention and control to the extent practicable.
 - f. The sanitary sewer system design capacity is appropriate to reasonably prevent SSOs.
 - g. The Enrollee took all reasonable steps to stop and mitigate the impact of the discharge as soon as possible.
6. When a SSO occurs, the Enrollee shall take all feasible steps and necessary remedial actions to: 1) control or limit the volume of untreated or partially treated wastewater discharged, 2) terminate the discharge, and 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water.
- The Enrollee shall implement all remedial actions to the extent they may be applicable to the discharge and not inconsistent with an emergency response plan, including the following:
- a. Interception and rerouting of untreated or partially treated wastewater flows around the wastewater line failure;
 - b. Vacuum truck recovery of SSOs and wash down water;
 - c. Cleanup of debris at the overflow site;
 - d. System modifications to prevent another SSO at the same location;
 - e. Adequate sampling to determine the nature and impact of the release; and
 - f. Adequate public notification to protect the public from exposure to the SSO.
7. The Enrollee shall properly, manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the Enrollee, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities.

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

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

Table B-2. Sewer System Management Plan Time Schedule	
Mandatory Elements	Due Date
Application for Permit Coverage (Complete)	Nov 2, 2006
Reporting Program (Continuous Ongoing Requirement)	Sep 2, 2007
SSMP Development Plan and Schedule (Complete)	Nov 2, 2006
Goals (Complete)	Nov 2, 2007
Organizational Structure (Complete)	Nov 2, 2007
Legal Authority	May 2, 2009
Operations and Maintenance Program	May 2, 2009
Overflow Emergency Response Program	May 2, 2009
FOG Control Program	May 2, 2009

Table B-2. Sewer System Management Plan Time Schedule

Mandatory Elements	Due Date
Design and Performance Provisions	Aug 2, 2009
System Evaluation and Capacity Assurance Plan	Aug 2, 2009
Monitoring, Measurement and Program Modifications	Aug 2, 2009
Program Audits	Aug 2, 2009
Communication Program	Aug 2, 2009
Final SSMP	Aug 2, 2009

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

Objectives of this Plan

Established goals that align the management, operation and maintenance and capacity assurance activities in a manner that will focus staff efforts to achieve the intended purpose of this SSMP.

Comply with the SWRCB's General Waster Discharge Requirement (WDR) order No. 2006-0003 issued May 2, 2006, amended by order No. 2013-0058-EXEC effective September 9, 2013.

Describe how the City ~~Water Services Division~~Municipal Utility Services complies with each element of the SWRCB's WDR SSMP requirements addressing the following:

An introduction, that provides an overview of the City and its² wastewater utility's size, complexity and SSMP responsibility.

An organizational structure, identifying SSMP responsibilities, job classifications, contact information, and location of SSMP documents.

A narrative describing how the City ~~Water Services Division~~Municipal Utility Services complies with each requirement.

WDR/SSMP requirements for each element,

Policies, procedures, and programs the City of Lodi has in place or will have in place to achieve compliance with the SWRCB WDR/SSMP.

A living appendix for contact personnel, job descriptions, policies, procedures, and programs subject to change.

The City's internet websites addresses for support/associated SSMP documents. (Some documents will be placed on the City's intranet site for security reasons. All electronic documents will be made available to State and Regional water board staff upon request).

The ~~Water Services Division~~[Municipal Utility Services](#) statistical records indicate that prior to the creation of this SSMP; it has had a reasonably low Sanitary Sewer Overflow (SSO) rate in comparison to other communities in California of similar size and complexity. The majority of these SSO have occurred from blockages in main lines. The average volume spilled per SSO has been less than 1,000 gallons/event. All SSOs have been mitigated in a timely manner and have not negatively impacted public health or the environment.

SEWER SYSTEM MANAGEMENT PLAN

SECTION 1 - GOALS

A. WDR/SSMP Goal Requirement

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

B. City of Lodi Goals

The City's ~~Water Services Division~~Municipal Utility Services has established six goals to guide the development, implementation and success of Lodi's SSMP. These goals are designed to facilitate and target the management, operation and maintenance of the sanitary sewer collection system in a manner that will sustain the infrastructure, protect public health and the environment, and achieve compliance with State Water Resources Control Board's General Waste Discharge Requirement (WDR) for Sanitary Sewer Systems. These goals include:

1. Complete a SSMP development plan and implementation schedule.
2. Properly manage, operate, and maintain all portions of the City's wastewater collection system.
3. Provide adequate capacity to convey peak wastewater flows.
4. Minimize the frequency of SSOs.
5. Mitigate the impacts that are associated with all SSOs that may occur.
6. Comply with all applicable regulatory notification and reporting requirements.

C. Appendix A – Development Plan and Schedule

Appendix A includes the following:

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

SEWER SYSTEM MANAGEMENT PLAN

SECTION 2 - ORGANIZATION

A. WDR/SSMP Organization Requirement

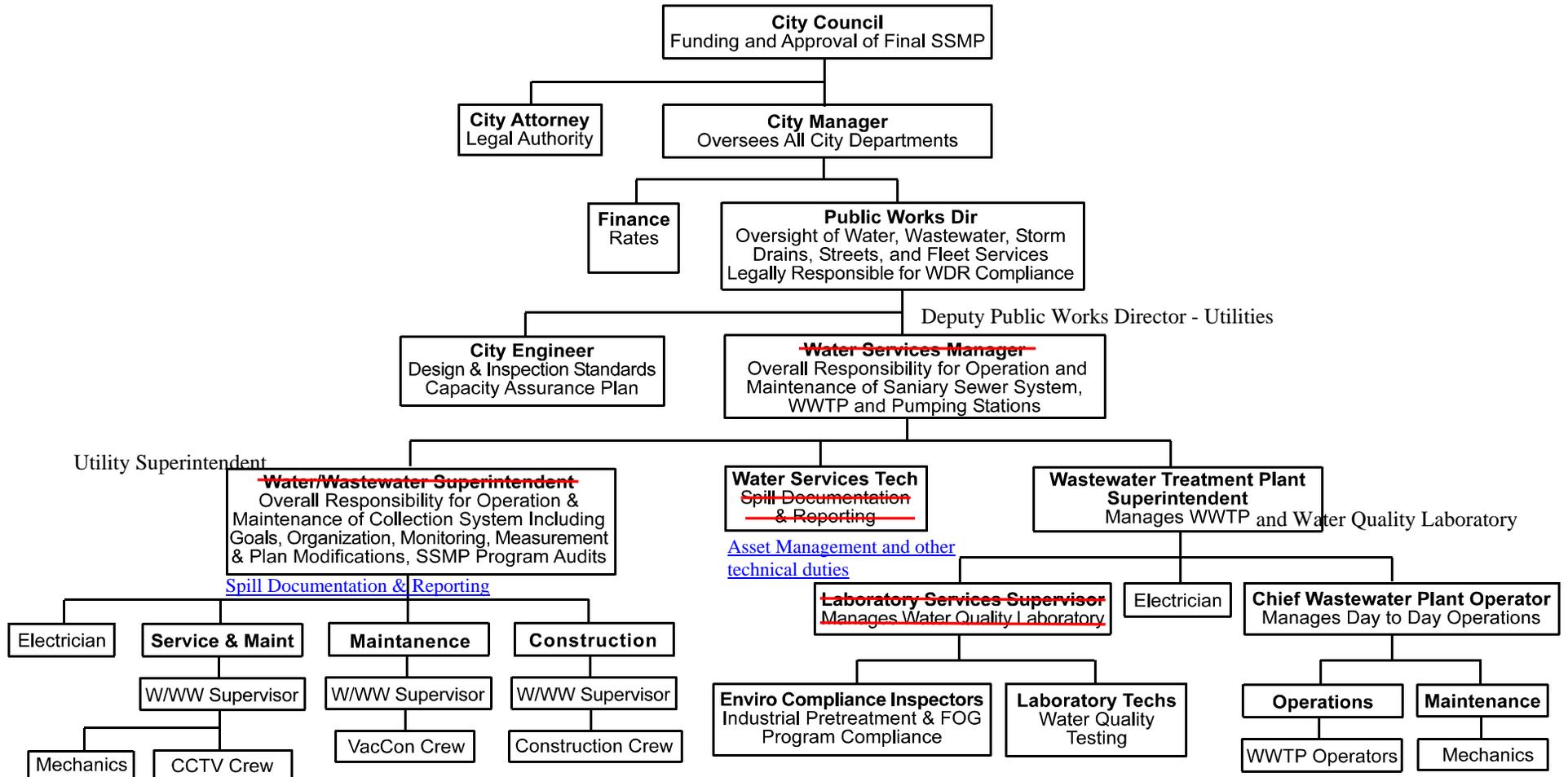
The WDR/SSMP organization requirement specifies that each SSMP identify the following:

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

B. SSMP Responsibility Organization Chart

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

Figure 2-1. SSMP Responsibility Organization Chart



General Position Description - SSMP Responsibilities:

- **City Council:** The City Council is the elected governing board of the City. Members are elected "at large" through regular elections. The city, a municipal corporation, consists of all the territory within the boundaries thereof, and all territory outside the boundaries thereof over which it has jurisdiction or control by virtue of any constitutional or statutory provision. The City Council is responsible for approving budgets and setting policy.
- **City Manager:** The City Manager has the responsibility of management of all City Departments and all hiring of personnel, and conducts the upper level management and business of the City.
- **City Attorney:** Receives policy direction from the City Council and acts as legal advisor and counsel to the City Council., City Manager, and City Departments and represents the City in litigation against the City.
- **Public Works Director:** The Public Works Director is responsible to plan, organize, direct, and review the activities and operations of the Public Works Department. This includes the following Divisions: Water Services, Engineering, Streets and Drainage, Fleet and Facilities Services, and Transportation. The Public Works Director is the Legally Responsible Official (LRO) in the WDR.
- **City Engineer/Deputy Public Works Director:** The City Engineer is responsible for the Design and Performance standards and for the Capacity Assurance Plan
- **Deputy Public Works Director - Utilities:** Has overall responsibility for the management and oversight of the entire water and wastewater utilities. Oversees revenue and expenses, along with operation and maintenance of the Water Pollution Control Facility, wastewater collection system and drinking water system for the City. Has overall responsibility for the Sanitary Sewer Overflow Emergency Response Plan (SSORP), the FOG Control Program, Monitoring, Measurement, and Program Modifications, Periodic Audits, and the Communication Program. Overall responsibility for reporting SSOs to the State and Regional Water Board and other agencies when applicable.
- **Utilities Superintendent:** Overall responsibility for the operation and maintenance of the water distribution and the wastewater collection system. ~~As needed will~~ Has responsibility to report SSOs to the State and Regional Water Board and other agencies when applicable.
- Compliance Engineer: Has responsibility for the SSORP, performs SSMP audits and updates and has responsibility for reporting SSO's when applicable.
- **Water Services Technician:** Performs technical duties such as mapping, drafting, and data management. Has responsibility for reporting as assigned.
- ~~Laboratory Services Supervisor~~ Wastewater Plant Superintendent: Oversees the water/wastewater laboratory activities and the environmental compliance program, and prepares regulatory compliance reports. As part of the industrial waste program, oversees the pretreatment and FOG inspection programs.
- **Environmental Compliance Inspector:** Ensures that the City's Industrial Pretreatment Program is in compliance with local, State and Federal requirements. Performs FOG related inspections.

- Water/Wastewater Supervisor: Is responsible for the day-to-day supervision of the wastewater utility maintenance workers in the areas of closed-circuit television (CCTV) and system cleaning. Ensures that written SSO and maintenance reports are completed. [May also oversee the operation and maintenance of the sewer lift stations including inspections, routine maintenance, trouble shooting and repairs](#)
- Water/Wastewater Maintenance Worker III: Responsible to ensure that the crews carry out the work assigned to them by the Supervisor. Each of the following crews is assigned one or two maintenance workers: construction, service maintenance, and wastewater system cleaning and CCTV. As needed, will record field data for SSO reports.
- Water/Wastewater Maintenance Worker I and Maintenance Worker II -: Responsible to carry out tasks and duties assigned by the Water/Wastewater Maintenance Worker III. Performs the CCTV inspections and, sewer cleaning. As needed, will record field data for SSO reports.
- ~~Senior Plant and Equipment Mechanic: Oversees the operation and maintenance of the sewer lift stations including inspections, routine maintenance, trouble shooting and repairs. As needed, will record field data SSO reports.~~
- Plant and Equipment Mechanic: Performs the operation and maintenance of the sewer lift stations including inspections, routine maintenance, trouble shooting and repairs. As needed, will record field data for SSO reports.
- Utility Control Operator: Answers and dispatches customer calls, generates and closes out utility reports.
- Administrative Support Staff: Answer and dispatch customer call as needed.

C. Chain of Communication for Reporting SSOs

City of Lodi SSO Reporting Chain of Communication

1. Most reports are received by Lodi control and relayed to the ~~water services division~~[Municipal Utility Services](#).

Primary Staff member: Utility operations Supervisor

Backup staff member: Utility Service operator II

2. Calls from Lodi control are received by ~~water services division~~[Municipal Utility Services](#) administrative staff. Usually Lodi Control contacts staff directly; administrative staff may receive initial reports from the public.

Primary staff member: Senior Administrative Clerk

Backup staff member: Administrative Clerk

3. During work hours documented calls from Lodi Control or administrative staff members are given to water/wastewater supervisors:

Primary staff member: Water/Wastewater Supervisor

Backup staff: Water/Wastewater Supervisor

Backup staff member: Water/Wastewater Supervisor

4. During work hours calls from Lodi Control or administrative staff are dispatched by the supervisors to water/wastewater maintenance workers who respond to the spills and are responsible for documenting the initial spill report.

Primary staff members: All water/wastewater maintenance staff members are trained and respond to spills.

Back staff members: All water/wastewater maintenance staff members are trained and respond to spills.

5. During non-work hours calls received from Lodi Control or the answering service are referred to the emergency call-out list. The emergency call-out list has all available water/wastewater staff members listed.

6. Initial reports are reviewed and signed by a Water/Wastewater Supervisor and are forwarded to the ~~Utilities Superintendent~~[Utility Superintendent](#) and/or ~~the Compliance~~[the Compliance](#) Engineer for review. The remainder of the reporting to all applicable state agencies and final posting to the states online reporting web site is handled by the ~~Utilities Superintendent~~[Utility Superintendent](#).

Primary staff member: ~~Utilities Superintendent~~[Utility Superintendent](#)

Backup staff member: Compliance Engineer

Backup staff member: Deputy Public Works Director - Utilities

D. Appendix B – Organization Documents

Appendix B includes the following:

B-1 Contact List – Personnel Responsible for SSMP Elements

B-2 Contact List – Personnel Responsible for SSO Reporting

B-3 ~~Water Services Division~~[Municipal Utility Services](#) Flow-chart Sanitary sewer overflow plan

B-3 Contact List – Personnel Responsible for Responding to SSOs emergency call-out list (updated weekly)

SEWER SYSTEM MANAGEMENT PLAN

SECTION 3 - LEGAL AUTHORITY

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP Legal Authority Requirement

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

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

B. Industrial Pretreatment Program

The following is an overview the Industrial Pretreatment program extracted from the Lodi Municipal Code (LMC):

LMC 13.12.120 Federal pretreatment requirements.

Users in industrial categories subject to the categorical pretreatment standards development by the EPA under the Clean Water Act of 1977 (PL 95 217) 33 U.S.C. 1251 et seq. are required to achieve limitations based on best practical control technology (BPT) immediately and best available technology economically achievable (BAT) by July 1, 1983, in accordance with Sections 301 and 304. New sources are required to comply with new source performance standards (NSPS) based on best available demonstrated control technology (BDT) for industrial users in terms of concentration and equivalent mass values. Users must comply with pretreatment standards promulgated pursuant to Section 307 and the Federal Register 40 CFR Subchapter IV. Dilution of any discharge may not be used to comply with any pretreatment standards. Categorical industrial users must submit baseline monitoring reports, compliance schedule reports, ninety-day compliance reports, and periodic reports on continued compliance as required including identifying information per 40 CFR 403.12(1) and such reports must be signed by an authorized representative of the industrial user and meet certification requirements of 40 CFR 403.6(a)(2)(ii) and 403.12(b)(6)

and be retained for a minimum of three years (or period of litigation, whichever is longer). The city may issue standards more stringent than the federal standards if the public works director determines that the limitations in the federal standards are not sufficient to:

- A. Protect the operation of the city's treatment facilities; or
- B. Comply with water quality standards, sludge disposal or effluent limitations specified in the city's National Pollutant Discharge Elimination System (NPDES) permit;
- C. Meet technically based local limits, which must be calculated per federal pretreatment program guidelines. The city must annually provide public notification of industrial users which during the previous twelve months significantly violated applicable pretreatment standards. (Ord. 1613 (part), 1995)

LMC 13.12.130 Industrial waste permits.

Source control of industrial discharges shall be accomplished by use of a permit and monitoring system as described in this chapter. Discharge of industrial waste from any person within the city onto land or to any natural outlet may be permitted only if the discharge complies with all requirements of the regional water quality control board and of all other local, state and federal laws and regulations. (Ord. 1613 (part), 1995)

C. Municipal Code and Design and Construction Standards

LMC 13.12.280 Design standards

All construction of public sewerage systems or appurtenances thereof shall conform to the design criteria, the standard plans and specifications and the inspection and testing procedures in accordance with current city public improvement design standards. (Ord. 1613 (part), 1995)

6-71 Sanitary Sewer Construction Specifications

6-71.01 General Sanitary sewers shall be furnished and installed in accordance with the applicable sections of the Standard Specifications listed in these Special Provisions, these Special Provisions and as shown on the plans. Sanitary sewer pipe shall be either extra strength vitrified clay pipe (VCP), all sizes polyvinyl chloride pipe (PVC), up to 15", and asbestos cement pipe (ACP), up to 8".

D. Municipal Code – Sewer Access Authority

LMC 13.12.520 Inspection, sampling, monitoring and analysis.

The public works director or designated representative may inspect the facilities of any user to ascertain whether the purpose of this chapter is being met and all requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow the public works director or designated representative ready access at all reasonable times to all parts of the premises for the purposes of inspection or sampling or in the performance of any of their duties. The public works director or designated representative shall have the right to set up on the user's property such devices as are necessary to conduct sampling or metering operations and be allowed to copy any of the user's discharge records. All user discharge records shall be retained for a minimum of three years per 40 CFR 403.12(o). Where a user has security measures in force

which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with its security guards so that upon presentation of suitable identification, the public works director or designated representative will be permitted to enter without delay for the purposes of performing their specific responsibilities. The user will be charged a fee to recover the costs for inspections (investigations), sampling, monitoring and analyses performed by the city for purposes of billing and ensuring compliance with all regulations. (Ord. 1613 (part), 1995)

E. Municipal Code – FOG

LMC 13.12.115 Grease, oil and sand interceptors.

Grease, oil and sand interceptors shall be provided by the discharger when they are necessary for the proper handling of wastes containing grease in excess of one hundred fifty milligrams per liter of animal and vegetable origin and fifty milligrams per liter of mineral origin, or any flammable wastes, sand, grit and other harmful ingredients. All interceptors shall be of a type and capacity approved in writing, prior to installation, by the public works director, and shall be located so as to be readily and easily accessible for cleaning and inspection. Grease and oil interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight, usually a minimum of one thousand gallons and equipped with easily removable covers which, when bolted in place, are gastight and watertight. Grease and/or oil/sand interceptors shall be constructed in any place or building having a capacity to serve group meals or commercial and industrial cleaning facilities. Where installed, all grease, oil, sand and grit interceptors shall be maintained by the owners at owner's expense in continuous efficient operation at all times. Materials collected shall not be reintroduced into the sewerage system. Records of all maintenance, cleaning and hauling of materials shall be maintained by the owner and such records shall be available at all times for inspection by city personnel. (Ord. 1613 (part), 1995)

F. Municipal Code – Enforcement Authority

LMC 13.12.570 Cease and desist order.

When the city finds that a discharge of wastewater has taken place in violation of prohibitions or limitations of this chapter, or the provisions of a wastewater discharge permit, the public works director may issue an order to cease and desist, and direct those persons not complying with such prohibitions, limits, requirements or provisions, to:

- A. Comply forthwith;
- B. Comply in accordance with a time schedule set forth by the city; or
- C. Take appropriate remedial or preventive action in the event of a threatened violation. (Ord. 1613 (part), 1995)

LMC 13.12.600 Liability.

Any person, firm or corporation, or any partner, officer, agent or employee thereof, who deposits or permits to be deposited into the city's sewerage system any wastes other than those permissible under the terms of this chapter and the terms of a valid permit granted under this chapter is liable for any and all damage caused to the city by virtue of such act, including compensation for damage to the city's facilities, and all costs of any legal fees, suits or judgments against the city which may be attributable to such wastes so discharged. (Ord. 1613 (part), 1995)

LMC 13.12.610 Injunction.

Whenever a discharge of wastewater is in violation of the provisions of this chapter or otherwise causes or threatens to cause a condition of contamination, pollution or nuisance, the city may petition the superior court for the issuance of a preliminary or permanent injunction, or both, as may be appropriate in restraining the continuance of such discharge. (Ord. 1613 (part), 1995)

LMC 13.12.620 Damage to sewerage system-Charge.

When a discharge of wastewaters or any other substance causes an obstruction, damage or any other impairment to the city's sewerage system, the city shall assess a charge against the user for the work, materials and services required to clean or repair the affected portions of the sewerage system. (Ord. 1613 (part), 1995)

LMC 13.12.630 Civil penalties.

Any person who violates any provision of this chapter or permit condition or who discharges wastewater which causes pollution, or who violates a cease and desist order, prohibition, effluent limitation, national standard of performance, pretreatment or toxicity standard shall be liable civilly to a penalty not to exceed six thousand dollars for each day in which such violation occurs. The city attorney, upon order of the city council, shall petition the superior court to impose, assess and recover such sums. (Ord. 1613 (part), 1995)

LMC 13.12.640 Termination of service.

The city may revoke any wastewater discharge permit, or terminate or restrict or cause to be terminated or restricted wastewater service to any premises, which may include termination or restriction of the water service if warranted, if a violation of any provisions of this chapter is found to exist or if a discharge of wastewater causes or threatens to cause a condition of contamination, pollution or nuisance as defined in this chapter. The city also reserves the right to immediately disconnect any user, upon informal notice only, in the event of an unlawful discharge which may cause imminent danger to human health, the environment, or which threatens to interfere with the treatment plants operation. This provision is in addition to other statutes, rules or regulations, authorizing termination of service for delinquency in payment. (Ord. 1613 (part), 1995)

G. Inter-Agency Agreements and Satellite Systems

The City currently has a Memorandum of Understanding with Flag City as the sole satellite sewer system. A satellite sewer or collection system is the portion, if any, of the sanitary sewer system which is owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which the sanitary sewer system is tributary. The City also has Industrial System Discharge Permits and Encroachment Permits for many local wineries. Since these are private systems that connect to the City's sewer system, they are not considered satellite systems under the WDR.

Appendix C – Legal Authority Documents

Appendix C includes the following:

- C-1 Pretreatment Program Enforcement Response Plan - TOC
- C-2 City of Lodi Municipal Codes
- C-3 Sanitary Sewer Design
- C-4 Sanitary Sewer System Construction
- C-5 City and City Inter-Agency agreement

SEWER SYSTEM MANAGEMENT PLAN

SECTION 4 - OPERATION AND MAINTENANCE ACTIVITIES

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP Operation and Maintenance Program Requirement

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

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

B. Lodi Collection System Maps

The City's wastewater collection system maps are maintained and managed in the following manner:

1. The City has up-to-date maps of the wastewater collection system. Maps are generated electronically using Autodesk Map Guide, an AutoCAD based program. The electronic maps are viewable from the City's web page under the "Mapping" tab. The mapping shows the approximate location of the manholes and connecting sewer pipelines when the "Wastewater" tab is checked and an area has been selected and expanded to an appropriate scale. As one zooms in on an area of interest, the pipeline size is shown along with an arrow that indicates the direction of flow in the pipeline. Zooming in closer will display the recorded length of the pipeline segment. If the computer mouse pointer is positioned over one of the circles indicating a manhole location, the manhole number will be displayed on the screen. If the pointer is positioned over any of the lines indicating the sewer pipelines, attributes about the pipeline are shown.
2. Hard copy 11" x 17" maps are located in the ~~Water Services Division~~[Municipal Utility Services](#) field trucks and at the City's Municipal Service Center and City Engineering office, see Appendix D-1 "Collection System Grid Map".

C. Lodi Preventive Operations & Maintenance Activities

1. Collection System Overview and Responsibility

Overview

The City's ~~Water Services Division~~[Municipal Utility Services](#) provides service to a population of approximately 63,400 people. The wastewater collection and conveyance system consists of 197.0 miles sewer pipe ranging in size of 4-inches to 36-inches in diameter, about 3,200 manholes, and 9 pumping or lift stations that convey an average dry weather flow of approximately 8.5 MGD. Sanitary sewerage is conveyed from the City's 12 mile geographical service area to ~~White Slough Wastewater Treatment Plant~~[White Slough Water Pollution Control Facility](#).

The vast majority of Lodi's wastewater collection system gravity sewer was constructed using vitrified clay sewer. Vitrified clay pipe (VCP) is pipe made from clay that has been subjected to vitrification, a process which fuses the clay particles to a very hard, inert, glass-like state. VCP is commonly used in sewer gravity collection mains because of its reasonable price and resistance to almost all domestic and industrial sewage, particularly the sulfuric acid that is generated by hydrogen sulfide, a common component of wastewater. About 58% of Lodi's gravity sewer system was constructed using VCP. The other major pipe materials used have been plastic (28.8%) and reinforced concrete pipe (9.8%). Approximately 73% of the gravity sewer system is composed of pipeline with a diameter of 8-inches or less. Over 92% of the gravity sewer system is composed of pipeline with a diameter of 18-inches or less. All of the pressure sewers (force mains) are constructed using pipelines that are 18-inches in diameter or less.

The City operates and maintains nine wastewater pumping stations, also called lift stations. The pumping stations are also called lift stations since the pumps lift the water from the deeper incoming sewers and discharge the water into a nearby sewer located at a higher elevation than the pipeline leading into lift station wet well.

All of the pump stations are equipped with constant speed pumps. Seven of these pumping stations are wet pit / dry pit type package pumping stations. The other two are submersible pump stations. All of the wet pit / dry pit pumping stations have been manufactured by Smith & Loveless. These stations are manufactured using steel shells using preset dimensions set by the manufacturer. This standardization helps by allowing some parts to be interchanged between pumping stations. It also allows for standardization of the operation and maintenance procedures.

Lift stations are generally differentiated from pumping stations in that lift station generally have very short discharge pipelines, with only enough pipeline to lift the water from the deeper inlet sewers to a shallower discharge sewer located near the lift station. Seven (7) of the lift stations are separate wet pit / dry pit design types constructed using prefabricated components installed in steel units. Wet pit / dry pit type pumping stations have a separate wet well from the “dry pit” where the pumps, motors, and electrical controls are located. Connecting pipes allow the pumps to pump the wastewater from the wet pit through gate valves into the pumps and then discharge the wastewater to the discharge piping through a set of check and gate valves. The check valve protects the pump from back pressure on the discharge line when the pump is not running. The two gate valves are installed to allow the pump to be removed from service for maintenance or replacement.

Two (2) of the lift stations are submersible pump stations. Submersible pump stations have only one chamber where the wastewater is received from the sewers and where the pumping equipment is located. With this type of pumping stations the pumps are lowered into the wastewater in the wet well on a rail system where the discharge pumping connects as the pump is lowered to its desired placement. The pumps and connected motors are specially designed so that they can operate successfully while being fully submerged in the wastewater.

Seven (7) of the sewer lift stations have fixed backup power generators installed at the stations. The two lift stations that do not have backup power includes the domestic lift station that only serves a public restroom facility at one of the City’s parks (Lodi Lakes) and the Industrial lift station at Sacramento Street.

All but one of the lift stations (Lodi Lake) has information about how it is operating relayed to Lodi Control where this information is monitored for abnormal conditions. When abnormal conditions like high water levels in the wet well are noted, a field crew is dispatched to determine what might be causing this condition and to correct it.

The City maintains the sewer mains and the pumping stations. The City does NOT own or maintain the service lateral piping which conveys the wastewater from the house or structure to the connection to the sewer main. The property owner is responsible for any problems in the service lateral.

Responsibility

The Deputy Public Works Director - Utilities has overall responsibility for the management and oversight of the City’s water and wastewater utilities including the Sewer System Management Plan and the monitoring and reporting plan. He oversees revenue and expenses, along with operation and maintenance of the ~~White Slough Wastewater Treatment Plant~~ [White Slough Water Pollution Control Facility](#), wastewater collection system and drinking water system for the City.

The operation and maintenance of the wastewater collection system is performed by the ~~Water Services Division~~ [Municipal Utility Services](#) of the Public Works Department. The ~~Utilities~~

~~Superintendent~~ Utility Superintendent manages the operation and maintenance of the wastewater collection system pipelines and the sewer lift stations. There are three Supervisors working under the ~~Utilities Superintendent~~ Utility Superintendent with one maintenance crew assigned to each Supervisor. ~~There is also a Senior Plant & Equipment Mechanic and a Public Works Electrician who report directly to the Utilities Superintendent.~~ A Plant and Equipment Mechanic works under the ~~Senior Plant and Equipment Mechanic~~ Supervisor(s). These positions include 3 management level positions, 5 supervisory positions, 14 journey level positions, and 2 entry level positions.

The ~~Laboratory Services Supervisor~~ Wastewater Plant Superintendent at the wastewater treatment plant is responsible for the water quality testing that is performed in the water quality laboratory and for NPDES compliance reporting. All testing for fats, oils and grease is performed at the wastewater treatment plant laboratory.

The City has 2 Maintenance Technicians 3's who are assigned as the lead person to operate the Vac/Con cleaning truck. These two people are rotated every 4 months, rotating between one of the 3 maintenance trucks when they are not assigned to the hydro flusher cleaning truck. The City has 2 Maintenance Technicians 3's who are assigned to operate the CCTV equipment. These two people are rotated every 4 months, rotating to the wastewater treatment plant when they are not assigned to the CCTV van. The rotation keeps the experience and expertise needed to correctly operate this equipment while also providing diversity of assignments.

2. Pipeline Cleaning Program

The City uses a preventive maintenance (PM) approach to operating and maintaining the wastewater collection system. The pipeline preventive maintenance or PM program consists of:

- a. Cleaning the 161 pipeline segments where grease related stoppages have occurred one or more times on a cycle of approximately once every 2 months. (Appendix D-2 "Hot Spot List")
- b. Cleaning the entire pipeline system which is currently estimated to be completed over a 6 year interval.
- c. Viewing the internal pipeline conditions of the gravity sewer pipelines using closed circuit television inspection equipment to determine where the pipeline should be repaired or replaced.
- d. Inspecting and maintaining the pumping stations bi-weekly, or once every other week.
- e. Making emergency repairs as needed.
- f. Developing rehabilitation projects for repairs that do not need to be repaired immediately and funding these projects through the City's Capital Improvement Plan.

The cleaning is prioritized to first clean the pipelines on the City's Two Month list. A field copy of the Two Month list and a spreadsheet summarizing the pipeline information is included in Appendix D-2. This list includes pipelines where multiple stoppages have occurred, where a pipeline is added to the list if there have been stoppages reported in the public sewer main pipeline within the past 5 years.

In addition to cleaning the pipelines on the Two Month list, the crews clean the pipelines that are going to be inspected by the closed circuit television (CCTV) crew. The work with the CCTV crew is scheduled to systematically clean and TV the pipelines using the City's map grid system. Under this approach, all of the pipelines in one of the City's map grids are cleaned and inspected before the crews move onto the next grid.

Sewer cleaning or flushing is performed using the combination high velocity cleaner / vacuum truck. Sewer cleaning is accomplished using a machine that pressurizes water contained on the truck. The water is conveyed into the sewer pipeline through a high pressure hose where the water is released at high pressure through one of several nozzles that can be attached to the end of the hose. The nozzles direct the high pressure water to be released into the sewer in a conical pattern behind the nozzle, creating a high pressure cone of water that is reeled back through the pipeline using a winch on the truck. This sprays the interior of the pipeline with the high pressure water and will clean off collected sediment and scum from the pipeline walls. This operation is also called "hydro-flushing".

The selection of the cleaning nozzle used during hydro flushing is dependent upon conditions expected to be encountered in the pipeline. The standard radial nozzle is used when it is suspected that the pipeline will contain mostly solids and grit. The nozzle jets on the standard nozzle are designed to clean the pipe wall and flush debris back towards the downstream manhole. Where grease deposits are anticipated, the warthog nozzle is used. The warthog rotary nozzle is designed to clean and remove grease and light root accumulations from mainlines and service laterals. This nozzle is a self rotating nozzle with the head propelled by jet rotation force. An internal fluid governor controls the rotation speed during cleaning. For plugged sewers, a penetrator nozzle is used.

Where root removal is needed, an attachment that contains links of chain can be attached to the end of a special nozzle that will spin the chain links at high speed as the nozzle is passing through the pipeline. This "chain flail" will cut off most of the roots in a pipeline if they are not too large.

Hydro-flushing is performed starting at the upstream manhole and pulling the hose and nozzle downstream so that the water and debris can wash out of the pipeline being cleaned. When a lot of grease or debris is encountered, the vacuum tubing is placed in the downstream manhole to remove debris and grease from the downstream manhole as this material is being removed from the pipeline.

The cleaning crew will note the relative amount and type of material removed during the cleaning operation on the Vac/Con daily report. The amount of grease, sand, and solids is noted on this report where the amount is noted as a dash for none, light, moderate, or heavy. A blank copy of the Wastewater System Maintenance Daily Report and three copies of completed reports are included in Appendix ___.

3. Sewer Pipeline and Manhole Inspection

The City's inspection program consists of visual observation by field crews and closed circuit television (CCTV) inspection.

a. Closed circuit television (CCTV) inspection

The ~~Water Services Division~~ Municipal Utility Services owns and operates a TV van equipped with closed circuit television (CCTV) inspection equipment including a self propelled TVI camera with a reel of cable connecting the camera to the van while the camera is inside a pipeline during an

inspection. The van is also equipped with a viewing and recording station with a computer, monitor, and video recording equipment.

Data is collected and stored on the computer located on the CCTV van. The data is captured and stored using Cues DataCap 4.0 software. This software has built in codes for coding and storing collected defect and attribute information. The data is transferred to the [Water Services Division Municipal Utility 'sServices'](#) offices at the Corporation Yard nightly by burning CD's and printing hard copies of the inspection reports. A copy of a typical inspection report is contained in Appendix ___.

Most of the CCTV work is accomplished using the self propelled tractor unit. The tractor is propelled by a tract type device, similar to the tracts on an Army tank. There are some small lines where the camera is attached to skids and is pulled through the pipeline using the hose from the cleaning truck. All distances are referenced to the face of the camera.

b. Visual Inspections

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

- i. Manhole Inspection
 - Frame and cover
 - Grade adjustments
 - Flow surcharging
 - Manhole bottom channels
 - Structural integrity/manhole degradation
 - I/I into manhole
 - Other miscellaneous problems
- ii. Sewer Inspection
 - Dirt and stone brought back while cleaning
 - Abnormal amount of debris in line
 - Excessive amounts of grease in line
 - Blockage or obstruction in line
 - Excessive flow (relative to upstream flows)
 - Any miscellaneous problems

Any of the above items would result in further study of the sewer and include CCTV inspection, sewer repair, or manhole repair

- iii. CCTV Inspection
 - Requested by cleaning crew because of a suspected problem
 - In connection with I/I investigation work
 - Condition assessment for justifying sewer rehabilitation work
 - Routine check on the effectiveness of sewer cleaning

4. Pumping or Lift Station Maintenance

The ~~Water Services Division~~ Municipal Utility Services has a maintenance program and schedules to minimize the number of ~~lift~~ lift station failures. The City's Preventive Maintenance (PM) program for the pumping or lift stations includes inspecting and maintaining the pumping stations once every other week. The maintenance schedule for the lift stations is included in Appendix D-4. During the biweekly checks the pumps are manually started to be sure that they are working; the humidifier, fans, and vent are checked; the bubbler switch is turned to check the compressors, the check valves are lifted to check that they are working correctly, and the pumps are back flushed if there is any indication that they may be plugged. The pump hours are recorded and the switch positions are noted. The emergency generators are also checked. A sewer lift station check list is included in Appendix D-4. If major work is performed at the site, an entry is also made into the City's lift station log book.

5. Construction and Repair

When identified, pipe segments are repaired either by City crews or by outside contractors. The division budgets annually for this task.

6. Customer Service

The City responds to all customer complaints or requests for information. A copy of the City's Customer Service Request is attached in Appendix D-6. The division collects customer service feedback through surveys handed out by maintenance crews and mechanics.

7. Staff Support

The ~~Water Services Division~~ Municipal Utility Services field operation is supported by a part-time Office Supervisor, one Senior Administrative Clerk and one Administrative Clerk. The duties of these positions include answering and dispatching customer calls; generating and closing out customer service request and work orders. Acts as a receptionist to interact with the general public, maintains statistical records and tabulates data; receives two-way radio calls; secures and records information and uses radio to dispatch necessary city services.

8. Scheduling and Management Information System

Work is scheduled daily based on current needs. The City uses a 9/80 work week. At the end of each month, the Sewer Collection System Supervisor tabulates the work accomplished during the month.

Work is tracked through time sheets. Lift station data is summarized on spreadsheets. Budget data is kept on a spreadsheet.

D. Lodi Rehabilitation and Replacement Plan

The City's wastewater collection system rehabilitation and replacement plan is included in the 9-year Capital Improvement Program (CIP) based on specific project needs. The City also budgets for unknown needs in the annual operating budget by budgeting for sewer pipe materials and other general supplies used during the course of a year by the City's crews.

The City has identified wastewater pipelines that need to be replaced due to high levels of infiltration and inflow, blocked sewers, and problem pipelines located in backyard easements. The City has also identified a number of water pipelines that need to be replaced. The City has budget for and created Capital improvement Projects 3 and 4 to address water and sewer replacement needs. These projects combine like elements in similar parts of the community for construction. The funds for Projects 3 & 4 are generally proportioned by about 40% for water main replacements and 60% for sewer main repair or replacement.

E. Lodi Training Plan

The City ~~Water Services Division~~[Municipal Utility Services](#) provides the following training incentives and for the wastewater collection system staff:

1. Employees are given a \$40/month incentive for California Water Environment Association (CWEA) Collection System Operator certification for grade above their job classification or position. To maintain their certification they must complete 12 hours of continuing training every two years. The test for the required CWEA certification ensures that employee that hold these certification do possess the knowledge, skills and abilities to skillfully perform the collection system operator duties. See CWEA website http://www.cwea.org/pdf/tcp/hb_csm.pdf for most current requirements.
2. Employee safety and response training
 - a. Hold bi-weekly safety tailgate meetings and maintain sign-in log.
 - b. Present safe practice reminder at all meetings.
 - c. Confined space entry – formal confined space entry program
 - d. **Review Material Safety Data sheets (MSDS) for new chemicals used.**
 - e. SSO / emergency response
3. Employee certifications and training
 - a. Employees to receive and renew job specific certifications for DMV, CPR, and First Aid, as required.
 - b. Employees shall be knowledgeable of and re-trained in the Confined Space Policy, annually.
 - c. Employees shall be knowledgeable of and re-trained in the Gas Detector Policy, annually.
 - d. Staff is sent to out sourced training programs with formal curriculums that cover confined space safety, lockout and trench/shoring training. These elements require testing and certification of successful completion. Training records are kept by the City's ~~Water Services Division~~[Municipal Utility Services](#).

F. Equipment and Critical Replacement Parts

The ~~Water Services Division~~[Municipal Utility 'sServices'](#) equipment and critical replacement parts inventory lists are located in Appendix D-5.

The City maintains contingency equipment and some replacement parts for the wastewater system. The equipment and spare parts are stored at the City's Corporation Yard or at the ~~White Slough Wastewater Treatment Plant~~ [White Slough Water Pollution Control Facility](#). This inventory includes:

1. 2 portable pumps
2. 0 portable emergency generators
3. An assortment of various sized plastic and vitrified clay pipe ranging in size from 4-inches to 12-inches in diameter
4. Spare manhole covers

Lodi maintains spare electrical components for the lift stations at the wastewater treatment plant. Seven of the lift stations have emergency generators on site in the event of a power outage. Seven (7) of the lift stations have SCADA monitoring that is relayed to Lodi Control for remotely monitoring lift station operating conditions, i.e. pump running, high wet well levels, power failures, etc. The City can also readily repair any pipeline collapse that may occur for any pipe size up to the 12-inches in diameter which covers 95% of the sewer system. In addition to spare parts on hand, there are three shops in Modesto (Center State Pipe & Supply Co, Groeniger & Co. and Howk Systems) where replacement piping and equipment can be obtained 24 hours per day 7 days per week.

G. Appendix D – Operation and Maintenance Program Documents

Appendix D includes the following:

- D-1 City of Lodi Sewer Map Grid System
- D-2 **Maintenance Cleaning Schedule**
- D-3 **Closed Circuit Television Video Report**
- D-4 **Standard Operating Procedure (SOP)**
- D-5 CWEA Certification Handbook
- D-6 Equipment Inventory List
- D-7 **Critical Replace Parts List (to be included at a later date)**
- D-8 **Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan**

SEWER SYSTEM MANAGEMENT PLAN

SECTION 5 - DESIGN AND PERFORMANCE PROVISIONS

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP - Design and Performance Provisions Requirement

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

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

B. Sanitary Sewer Design and Specifications

The City's sewer design standards and specification are located in the City Engineer's office. The following is an overview of those requirements:

The purpose of the City Design Standards is to provide direction in the application of improvements which are to be dedicated to the public and accepted by the City for maintenance or operation, and to provide for coordinated development of those facilities to be used by and for the protection of the public. This includes certain private works, as well as improvements to be installed within existing City rights-of-way and easements. Whereas it is the intent of these Standards to govern all new construction, City staff shall interpret and apply the Standards in a manner which achieves their intent, while encouraging and enabling the redevelopment of infill and vacant parcels especially within the City's Redevelopment Project Area.

These Standards shall apply to, regulate, and guide preparation of traffic impact studies and the design and preparation of plans for construction of streets, highways, alleys, drainage, sewerage, traffic signals, site access, water supply facilities and related public improvements, and shall set guidelines for all private works which involve drainage, grading, trees, and related improvements.

The purpose of the City Construction Standards is to provide minimum standards to be applied to improvements which are to be dedicated to the public and accepted by the City for maintenance or operation and certain private works, as well as improvements to be installed within existing rights-of-way and easements. This is necessary in order to provide for coordinated development of required facilities to be used by and for the protection of the public. These Construction Standards shall apply to, regulate, and guide construction of streets, highways, alleys, drainage, sewerage, traffic signals, site access, water supply facilities and related public improvements, and shall set guidelines for all private works which involve drainage, grading, trees and related improvements.

All improvements within the City rights-of-way shall be installed in accordance with the approved improvement plans and specifications, the City of Lodi Design Standards, the City of Lodi Construction Standards and the State of California Department of Transportation Standard Specifications.

C. Sanitary Sewer Construction and Performance Provisions

The City's/District's construction standards are located in the City Engineer's Office. The following is an overview of those requirements:

Lodi's Department of Public Works Standard Plans for wastewater series 200, miscellaneous series 500 and engineering series 600 cover design and construction standards and specifications for the installation of new sanitary sewer systems.

Lodi uses CCTV inspection and standard plan 610 sanitary sewer leakage test both hydrostatic and air test for newly installed sewers acceptance

D. Appendix E – Design and Performance Provision Documents

Appendix E includes the following:

- E-1 Table of Contents – Section Blank – Sanitary Sewer Design
- E-2 Table of Contents – Section Blank –Sanitary Sewer Construction
- E-3 Standard Plans
- E-4 Technical Memorandum, SSMP Preparedness Audit Design and Performance Provision**

SEWER SYSTEM MANAGEMENT PLAN

SECTION 6 - OVERFLOW EMERGENCY RESPONSE PLAN

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP Overflow Emergency Response Plan Requirement

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

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

B. Notification Procedures

The ~~Water Services Division~~[Municipal Utility Services](#) SSO notification procedures are contained in the City ~~Water Services Division~~[Municipal Utility Services](#)' sanitary sewer overflow procedures manual, and a copy is located in the on call vehicle. The procedures are in a three ring binder and are available to all ~~Water Services Division~~[Municipal Utility Services](#) personnel responsible for responding to SSOs,

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mitigating SSOs and reporting SSOs. The organizational response plan and chain of communication chart are located the City of Lodi's MSC and the complete written response plan including names and contact information is located in Appendix F-1. Whenever SSO procedure updates are necessary they are made and a revised date is placed on each page of the procedure. This helps to ensure timely SSO response, migration and reporting. Figure 6-2 illustrates the [Water Services Division Municipal Utility Services](#)' SSO response and notification procedures.

C. Response Program

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

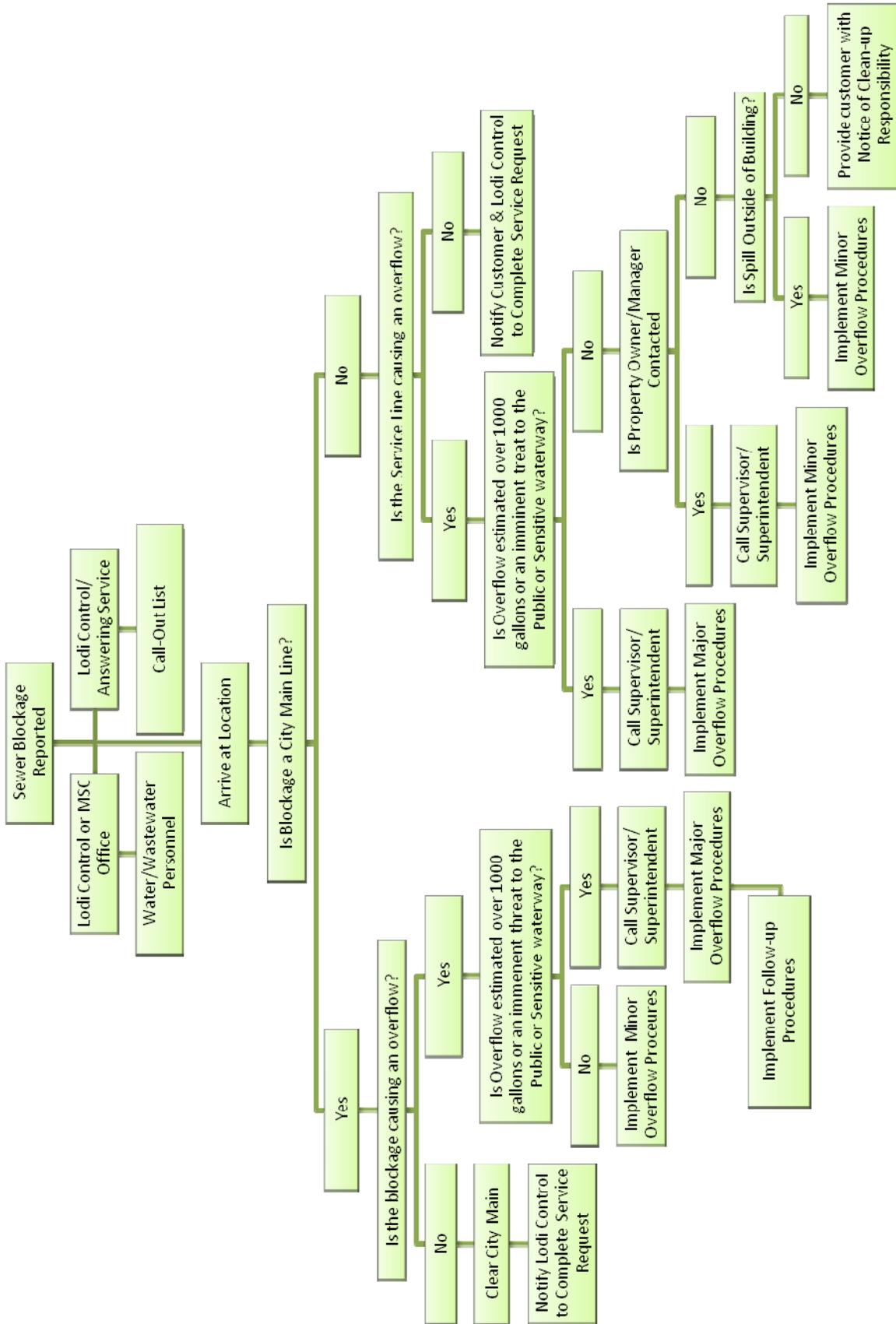


Figure B-1. SSO Plan Flow Chart

|

D. Regulatory Notification Procedure

The Public Works Director is the legally responsible official (LRO) to certify SSO reports that have been submitted to SWRCB data base. ~~Both the Public Works Director, the Utility and Superintendent, and the Deputy Public Works Director – Utilities Compliance Engineer~~ are responsible for reporting SSO to the SWRCB, RWQCB, OES and Health Department as necessary.

E. Staff and Contractors Training

The ~~Water Services Division~~Municipal Utility Services has established and implemented the following SSO response training:

~~Water Services Division~~Municipal Utility Services employees are required to complete SSO response training and periodically, throughout the year, spill response is covered in the weekly safety tailgate meetings.

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

F. Emergency Response Coordination

The ~~Water Services Division~~Municipal Utility Services has sent employee's to table top exercises, monthly tailgate meetings, associated classes through WW related organizations such as CWEA, First Responder and Haz Woper training that all include SOP's.

G. Spill Mitigation and Containment Procedure

The ~~Water Services Division~~Municipal Utility Services has written an Overflow emergency response plan and has created a Standard Operating Procedure (SOP) for spill mitigation and containment plan that is described in Figure 6-2 SSO Procedures Flow Chart.

H. Appendix F - Overflow Emergency Response Plan Documents

Appendix F includes the following:

- F-1 Sanitary Sewer Overflow Response Plan
- F-2 ~~Water Services Division~~Municipal Utility Services Required Training
- F-3 ~~Water Services Division~~Municipal Utility Services Recommended Training -Tail Gate Meeting

F-4 Standard Operating Procedures (SOP) for Spill Mitigation and Containment

SEWER SYSTEM MANAGEMENT PLAN

SECTION 7 - FOG CONTROL PROGRAM

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP – FOG Control Program Requirement

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

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

B. Public Education Plan (Scheduled Implementation date 1-1-2010)

The ~~Water Services Division~~[Municipal Utility Services](#) is initiating a FOG outreach program to residents, restaurants and the plumbing community on the proper disposal of FOG. This program will include TV spots, flyers direct mail and site visits to food service establishments.

Objective: Educate City of Lodi residents and restaurants on the proper disposal of FOG to meet or exceed outreach standards set forth in the State General WDR Requirements, and FOG Control Program adopted in May 2006.

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

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

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

C. FOG Disposal Plan

The ~~Water Services Division~~[Municipal Utility Services](#) has created the following FOG disposal plan:

The Permittee shall be required to keep all manifests, receipts and invoices of all cleaning, maintenance, grease removal of/from the grease control device, disposal carrier and disposal site location for no less than three years.

D. Record Keeping Requirements

The ~~Water Services Division~~[Municipal Utility Services](#) has created the following record keeping requirements:

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

1. A logbook of grease interceptor, grease trap or grease control device cleaning and maintenance practices.
2. Copies of records and manifests of waste hauling interceptor contents.

3. Records of sampling data and sludge height monitoring for FOG and solids accumulation in the grease interceptor.
4. A record of Best Management Practices being implemented including employee training.
5. Records of any spills and/or cleaning of the lateral or sewer system.
6. Any other information deemed appropriate by the Public Works Director/Deputy Public Works Director - Utilities etc. to ensure compliance with these regulations.

E. Legal Authority to Prohibit SSOs and Blockages Caused by FOG Discharges

Municipal code section 13.12.115 provides the following authority to establish grease interceptor requirements:

Grease, oil and sand interceptors shall be provided by the discharger when they are necessary for the proper handling of wastes containing grease in excess of one hundred fifty milligrams per liter of animal and vegetable origin and fifty milligrams per liter of mineral origin, or any flammable wastes, sand, grit and other harmful ingredients. All interceptors shall be of a type and capacity approved in writing, prior to installation, by the public works director, and shall be located so as to be readily and easily accessible for cleaning and inspection. Grease and oil interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight, usually a minimum of one thousand gallons and equipped with easily removable covers which, when bolted in place, are gastight and watertight. Grease and/or oil/sand interceptors shall be constructed in any place or building having a capacity to serve group meals or commercial and industrial cleaning facilities. Where installed, all grease, oil, sand and grit interceptors shall be maintained by the owners at owner's expense in continuous efficient operation at all times. Materials collected shall not be reintroduced into the sewerage system. Records of all maintenance, cleaning and hauling of materials shall be maintained by the owner and such records shall be available at all times for inspection by city personnel. (Ord. 1613 (part), 1995)

F. BMP, Grease Removal Devices, Recordkeeping, and Reporting Requirements

The ~~Water Services Division~~[Municipal Utility Services](#) has included the following FOG BMPs, removal device, record keeping, and reporting requirements in the proposed addendum:

Requirements for BMPs:

All [Food Service Establishments](#), FSEs, shall implement BMPs in accordance with the requirements and guidelines established by the City under its FOG Control Program in an effort to minimize the discharge of FOG to the sewer system.

All FSEs shall be required, at a minimum, to comply with the BMPs set forth in the terms and conditions of the FOG WDP.

Grease Interceptor Requirements:

All FSEs shall provide wastewater acceptable to the City, under the requirements and standards established herein before discharging to any public sewer. Any FSE required providing FOG pretreatment shall install, operate, and maintain an approved type and adequately sized grease interceptor necessary to maintain compliance with the objectives of this Ordinance.

Grease interceptor sizing and installation shall conform to the current edition of the Uniform Plumbing Code. Grease interceptors shall be constructed in accordance with the design approved by the City Engineer and shall have a minimum of two compartments with fittings designed for grease retention.

The grease interceptor shall be installed at a location where it shall be at all times easily accessible for inspection, cleaning, and removal of accumulated grease.

Access manholes, with a minimum diameter of 24 inches, shall be provided over each grease interceptor chamber and sanitary tee. The access manholes shall extend at least to finished grade and be designed and maintained to prevent water I/I. The manholes shall also have readily removable covers to facilitate inspection, grease removal, and wastewater sampling activities.

Specific record keeping requirements are specified in 7.6 record keeping and reporting requirements.

G. Inspection and Enforcement Authority – FOG Producers

The Lab/Industrial Waste Division has included the following criteria in the proposed addendum:

1. All FSEs proposing to discharge or currently discharging wastewater containing FOG into the City's sewer system shall obtain a FOG WDP from the City.
2. FOG WDRs shall be expressly subject to all provisions of this Ordinance and all other regulations, charges for use, and fees established by the City. The conditions of FOG WDRs shall be enforced by the City in accordance with this Ordinance and applicable State and Federal Regulations.

H. FOG Characterization Assessment and Hot Spot Cleaning Schedule

The ~~Water Services Division~~Municipal Utility Services has completed a FOG characterization assessment and has established the following hot spot cleaning schedule:

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

FOG hot spot location data is maintained in the ~~Water Services Division~~Municipal Utility 'sServices' CMMS and quarterly, semi-annual and annual sewer line maintenance work orders are issued and completed to ensure that hot spot lines do have grease blockages/SSOs between cleaning schedules.

I. FOG Control Program Measures

The ~~Water Services Division~~ Municipal Utility Services has established the following FOG Waste Discharge Permit (WDP) Conditions in the proposed addendum:

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

1. Limits on discharge of FOG and other priority pollutants.
2. Requirements for proper O&M of grease interceptors and other grease control devices.
3. Grease interceptor maintenance frequency and schedule.
4. Requirements for implementation of BMPs.
5. Requirements for maintaining and reporting status of BMPs.
6. Requirements for maintaining and submitting logs and records, including waste-hauling records and waste manifests.
7. Requirements to self-monitor.
8. Requirements for the FSE to construct, operate, and maintain, at its own expense, FOG control device, and sampling facilities.
9. Additional requirements as otherwise determined to be reasonably appropriate by the Public Works Director to protect the City's system or as specified by other Regulatory Agencies.
10. Other terms and conditions, which may be reasonably applicable to ensure compliance with this ordinance.

J. Appendix G – FOG Control Program Document

Appendix G includes the following:

- G-1 Fats, Oils, and Grease (FOG) Characterization Data Form
- G-2 Proposed Addendum to Lodi Municipal Code - Food Service Establishments (FSEs)
- G-3 Hot Spot Cleaning Schedule

SEWER SYSTEM MANAGEMENT PLAN

SECTION 8 - SYSTEM EVALUATION, CAPACITY, AND ASSURANCE PLAN

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP - System Evaluation and Capacity Assurance Plan Requirement

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

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

B. Evaluation Process – Capacity Enhancement Projects

The ~~Water Services Division~~ Municipal Utility Services has performed the following capacity enhancement projects: *

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C. Design Criteria

The ~~Water Services Division~~ Municipal Utility Services has established and implemented the following design criteria:

The City of Lodi Standard Plans 300 series for wastewater.

The City of Lodi Construction Specifications.

The City of Lodi Public Improvement Design Standards.

D. Capacity Enhancement Measurers

The ~~Water Services Division~~ Municipal Utility Services has established the following capacity enhancement measures:*

E. Capital Improvement Program Schedule

The ~~Water Services Division~~ Municipal Utility Services has established and implemented the following CIP schedule:*

F. Appendix H - System Evaluation and Capacity Assurance Plan Documents

Appendix H includes the following:

- H-1 Technical Memorandum – SSMP Audit System Evaluation and Capacity Assurance Plan
- H-2 Technical Memorandum – Trunk Sewer Hydraulic Analysis
- H-4 Wastewater Condition Assessment Date – Power point Presentation
- H-5 Capital Improvement Plan (CIP) Lodi Wastewater Collection System Condition Assessment
- H-6 2009 Wastewater Capacity Study

* Note: As of August 2009 City Staff has completed the capacity assurance modeling work and is in the process of identifying projects that will reduce potential SSO's

SEWERY SYSTEM MANAGEMENT PLAN

SECTION 9 - MONITORING, MEASUREMENT, AND PROGRAM MODIFICATION

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP – Monitoring, Measurement, and Program Modification Requirement

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

1. Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
2. Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
3. Assess the success of the preventative maintenance program;
4. Update program elements, as appropriate, based on monitoring or performance evaluations; and
5. Identify and illustrate SSO trends, including: frequency, location, and volume.

B. Utility Metrics to Prioritize SSMP Activities

The ~~Water Services Division~~ Municipal Utility Services has established the following Utility metrics:

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

1. System Information
2. Financial Information
3. Sewer Maintenance
4. Performance Measures

Revision Date: ~~08/13/2009~~ 06/28/2014

C. Metrics to Monitor Effectiveness of SSMP

The ~~Water Services Division~~ Municipal Utility Services has established the following SSMP implementation schedule:

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

D. Metrics to Assess Preventative Maintenance Program

The ~~Water Services Division~~ Municipal Utility Services has established the following preventative maintenance sewer metrics:

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

Total miles cleaned per year	miles
Total miles visually inspected per year (not CCTV)	miles
Independent manhole inspections	How often
Total miles treated with chemicals for roots per year	miles
Total miles of mechanical root control	miles
Total miles CCTV inspected per year	miles
Total number of sewer maintenance field staff	#
Average high velocity cleaning per crew per day	feet
Average cost of sewer mechanical cleaning	\$/ft Loader rates
Average cost of chemical root treatment	\$/ft
Average cost of CCTV	\$/ft

E. SSMP Performance Monitoring and Update Process

The ~~Water Services Division~~ Municipal Utility Services has established the following monitoring process:

The ~~Water Services Division~~ Municipal Utility Services uses performance metrics to monitor and measure and adjust maintenance program activities. These metrics are maintained the CMMS and monitored on a monthly, quarterly, semi-annual and annual basis. The performance measures include the following:

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

F. SSO Trends – Frequency, Location and Volume

The ~~Water Services Division~~ Municipal Utility Services has established the following performance monitoring process:

The ~~Water Services Division~~ Municipal Utility Services uses performance metrics to monitor and measure and adjust maintenance program activities. These metrics are maintained the CMMS and monitored on a monthly, quarterly, semi-annual and annual basis. The performance measures include the following:

Total number of spills per year (all spills)	Spills
Total volume of spills per year (all spills)	Gallons min/max
Total number of wet weather spills per year	Spills
Total volume of wet weather spills per year	Gallons
% Spills caused by FOG and volume	%
% Spills Caused by Roots and volume	%
% Spills Caused by Vandalism and volume	%
% Spills repeated within 2 years	%
Customer service requests per year, actionable/responsible for	Total # SR
Total number of sewer caused odor complaints	Complaints
Total # of Pump/Lift Station Failures per year (cause overflow)	Failures
Total number of pipe failures per year (cause overflow)	Breaks
Average response time, goal verses actual	Minutes
Number of claims per year, flooding	Claims
Total cost of claims per year	\$
Total work orders performed per year	Word orders
% of work orders completed, emergency or corrective	% Emergency % corrective
% of work orders completed that are preventable	%

Total miles repaired as emergency per year	miles
Total miles rehabilitated or replaced per year	miles
Total new miles constructed per year	miles

G. Appendix I - Monitoring, Measurement, and Program Modifications Documents

Appendix I includes the following:

- I-1 ~~Water Services Division~~ [Municipal Utility Services](#) SSMP Implementation Schedule
- I-2 ~~Water Services Division~~ [Municipal Utility Services](#) Fiscal Year System Information, Financial Information, Sewer Maintenance and Performance Measures
- I-3 Historical Summary of Sanitary Sewer System Overflows

SEWER SYSTEM MANAGEMENT PLAN

SECTION 10 - PROGRAM AUDIT AND ANNUAL REPORT

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP - SSMP Program Audits Requirement

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

B. Audit Procedures, Roles and Responsibilities

The ~~Water Services Division~~Municipal Utility Services has established the following audit procedure:

The Compliance ~~Engineer or Deput~~Engineer or Deputy Public Works Director - Utilities will perform periodic internal audits to determine the effectiveness of each element of the SSMP.

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

1. System Information
2. Financial Information
3. Sewer Maintenance
4. Performance Measures

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

The ~~Water Services Division~~Municipal Utility Services audit schedule is as follows:

1. Annually for the first two years following the adoption and approval of this SSMP.

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

C. SSMP Program Modification/Update Process

The ~~Water Services Division~~[Municipal Utility Services](#) has established the following program modification and update process:

The ~~Water Services Division~~[Municipal Utility Services](#) will monitor and review sewer performance metrics on a monthly basis and the status of each element of the SSMP on an annual basis for the first two years following the adoption of this SSMP. Formal SSMP audits will be conducted every two years following the adoption of this SSMP. The Deputy Public Works Director - Utilities will initiate/direct corrective action to be taken when and if SSMP deficiencies are identified between/during periodic internal audits.

When significant changes are made to the SSMP that require re-certification, the ~~Utilities Superintendent~~[Utility Superintendent](#) will enter the data in the online SSO database and mail the form to the State Water Board.

D. Appendix J - SSMP Program Audit Documents

Appendix J includes the following:

- J-1 Procedures for Audit Form
- J-2 Audit Form

SEWER SYSTEM MANAGEMENT PLAN

SECTION 11 - COMMUNICATION PROGRAM

NOTE: In accordance with State Order No. 2006-0003-DWQ, this plan is intended to be an internal working document that will continually evolve to further improve operations and reduce SSO's. The red text in this plan reflects elements that are required by the order; however, implementation dates for the elements are left to the discretion of the agency. The proposed implementation dates are established in appendix A-2.

A. WDR/SSMP - Communication Program Requirement

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

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

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

B. Internal Communication – Staff, Utility Commission, and City Council etc.

The ~~Water Services Division~~Municipal Utility Services has created the following power point presentations to educate the City Council, Public, and Staff:

The ~~Water Services Division~~Municipal Utility Services has created two power point presentations to introduce the SWRCB WDR/SSMP requirements and the City of Lodi's responsibility to comply with the Statewide WDR Order No. 2006-0003. The ~~Water Services Division~~Municipal Utility Services' WDR awareness program is an overview for staff and the Sanitary Sewer Systems Regulations/WDR power point presentation is used to educate the City Council.

C. Stakeholder Communication – Residential, Commercial and Industrial

The ~~Water Services Division~~Municipal Utility Services has created the following SSMP educational material for public outreach:

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The City of Lodi publishes a newsletter every two months to communicate with customers and stakeholders about sewer utilities. It is distributed in the utility bills and posted on the City's website.

The ~~Water Services Division~~[Municipal Utility Services](#) is expanding use of the City's web-site to present WDR/SSMP requirements and program status to residential, commercial, industrial and public stakeholders. Sample newsletters are included in Appendix K.

The ~~Water Services Division~~[Municipal Utility Services](#) is initiating a comprehensive FOG outreach program to residents, restaurants and the plumbing community on the proper disposal of FOG. This program will include television spots, flyers direct mail and site visits to food service establishments.

D. Appendix K - Communication Program Documents

Appendix K includes the following:

- K-1 ~~Water Services Division~~[Municipal Utility Services](#) WDR Awareness Program Power point Presentation
- K-2 Sanitary Sewer Systems Regulations/Waste Discharge Requirement Power point Presentation (City Council)
- K-3 Two Newsletters Preventing FOG in the Pipes and Not Flushing Medications Down the Sewer
- K-4 FOG Outreach Program - Marketing Objective and Strategy

SEWER SYSTEM MANAGEMENT PLAN

LIMITATIONS

Report Limitations

This document was prepared solely for the City of Lodi in accordance with professional standards at the time the services were performed and in accordance with the contract between the City of Lodi and Holmes International dated September 26, 2007.

We have relied on information or instructions provided by the City of Lodi and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

APPENDIX A

SSMP Development Plan and Schedule

Appendix A includes the following:

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

APPENDIX B

Organization Documents

Appendix B includes the following:

B-1 Contact List -Personnel Responsible for SSMP Elements

B-2 Contact List - Personnel Responsible for SSO Reporting

B-3 ~~Water Services Division~~Municipal Utility Services Flow-chart Sanitary sewer overflow plan

B-3 Contact List –Personnel Responsible for Responding to SSOs emergency call-out list (updated weekly)

APPENDIX C

Legal Authority Documents

Appendix C includes the following:

- C-1 Pretreatment Program Enforcement Response Plan - TOC
- C-2 Municipal Codes
- C-3 Sewer Design.
- C-4 Sanitary Sewer System Construction
- C-5 Joint Exercise of Powers Agreement for Blank
- C-6 City and City Inter-Agency agreement

Operation and Maintenance Program Documents

Appendix D includes the following:

D-1 City of Lodi Sewer Map Grid System

D-2 Maintenance Cleaning Schedule

D-3 Closed Circuit Television Video Report

D-4 Standard Operating Procedure (SOP)

D-5 CWEA Certification Handbook, http://www.cwea.org/pdf/tcp/hb_csm.pdf

D-6 Equipment Inventory List

D-7 Critical Replace Parts List (to be included at a later date)

D-8 Technical Memorandum O&M Program SSMP Audit-Rehabilitation and Replacement Plan

APPENDIX E

Design and Performance Provisions Documents

Appendix E includes the following:

- E-1 Table of Contents – Section Blank – Sanitary Sewer Design
- E-2 Table of Contents - Section Blank – Sanitary Sewer System construction
- E-3 **Technical Memorandum, SSMP Preparedness Audit Design and Performance Provisions**

Overflow Emergency Response Documents

Appendix F includes the following:

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

APPENDIX G

FOG Control Program Documents

Appendix G includes the following:

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

G-2 Proposed Addendum to Lodi Municipal Code - Food Service Establishments (FSEs)

G-3 Hot Spot Cleaning Schedule

APPENDIX H

System Evaluation and Capacity Assurance Plan Documents

Appendix H includes the following:

- H-1 Technical Memorandum-SSMP Audit System Evaluation and Capacity Assurance Plan
- H-2 Technical Memorandum-Trunk Sewer Hydraulic Analysis
- H-4 Wastewater Condition Assessment Data – Power point Presentation
- H-5 Capital Improvement Plan (CIP) Lodi Wastewater Collection System Condition Assessment
- H-6 2009 Wastewater Capacity Study

APPENDIX I

Monitoring, Measurement, and Program Modifications Documents

Appendix I includes the following:

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

APPENDIX J

SSMP Program Audit Documents

Appendix J includes the following:

J-1 Procedure for Audit Form

J-2 Audit Form

Communication Program Documents

Appendix K includes the following:

- K-1 Water Service Division WDR Awareness Program PowerPoint Presentation
- K-2 Sanitary Sewer Systems Regulations/Waste Discharge Requirement PowerPoint Presentation (City Council)
- K-3 Two Newsletters Preventing FOG in the Pipes and Not Flushing Medications Down the Sewer
- K-4 FOG Outreach Program - Marketing Objective and Strategy