



City of Clovis Sewer System Management Plan

July 2014

Element 1 - Goals

This Sewer System Management Plan (SSMP) element identifies the goals of the City of Clovis for the management, operation and maintenance of the sewer system and discusses the role of the SSMP in supporting these goals. These goals will provide direction to City staff to focus efforts on maintaining the system and making improvements.

1.1 Regulatory Requirements for Goals Element

The requirements of the General WDR for Wastewater Collection Agencies Sewer System Management Plan (SSMP) Goals element are as follows:

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 sanitary sewer overflows (SSOs), as well as mitigate any SSOs that do occur.

1.2 Element 1 Appendix

There is no appendix associated with Element 1.

1.3 Goals Discussion

One of the major goals of the City of Clovis is to provide for financially sustainable city services. Specific to that goal is keeping well-maintained city infrastructure and facilities. Department goals for the Wastewater Section are to remove and dispose of all wastewater generated within the City and to ensure compliance with all appropriate local, state and federal regulations. The following specific goals have been developed to carry out this mission.

1. Cost effectively manage, operate and maintain all parts of the wastewater collection system.
2. Provide adequate capacity to serve new growth areas in the City and peak flow.
3. Minimize sanitary sewer overflows to no more than one annually per 25 miles of sewer main.
4. Mitigate the impact to customers and the environment from sanitary sewer overflows.
5. Maintain all lift stations such that there are no sanitary sewer overflows due to lift station failure.

6. Maintain all lift station facilities and grounds to be clean and attractive.
7. Perform all operations in a safe manner to avoid personal injury and property damage.
8. Regularly assess the condition of sewer mains to provide timely rehabilitation and replacement.
9. Maintain and invest in wastewater equipment to enhance system reliability.
10. Provide quick response to customer and contractor inquiries.

The listed goals for this SSMP will allow the City to properly manage the sewer collection system and assist the City in minimizing the frequency and impacts of SSOs by providing guidance for appropriate maintenance, capacity management, and emergency response.

Element 2 - Organization

This section of the SSMP identifies City of Clovis staff that are responsible for implementing this SSMP, responding to SSO events and meeting the SSO reporting requirements. This section also includes the designation of the Authorized Representative to meet SWRCB requirements for completing and certifying spill reports. This section fulfills the Organization requirement of the SWRCB Order.

2.1 Regulatory Requirements for Organization Element

The requirements of the General WDR for Wastewater Collection Agencies Sewer System Management Plan (SSMP) organization element require as follows:

The SSMP must identify:

- (a) The name of the responsible or authorized representative.
- (b) 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
- (c) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).

2.2 Element 2 Appendix

Supporting information for Element 2 is included in Appendix A. This appendix includes the following documents:

1. [Table of sewer staff names and phone numbers](#) (updated as necessary).

2.3 Organization Discussion

This section discusses the organization and roles of sewer staff, the authorized representative to the State Water Resources Control Board, and key staff responsible for implementing and maintaining the SSMP.

Organization

The organization chart for the management, operation and maintenance of the City's wastewater collection system is shown in Figure 2-1. The names and phone numbers of staff filling these positions are included in Appendix A.

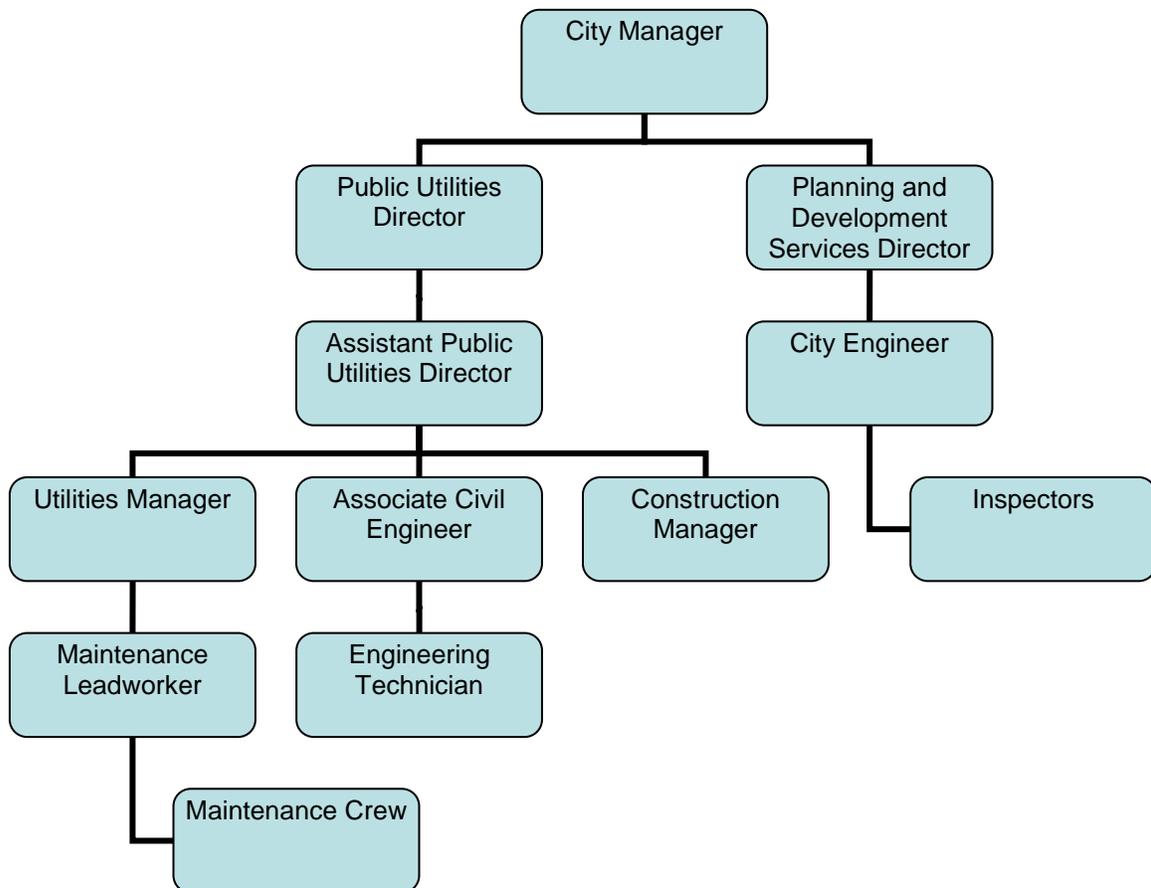


Figure 2-1 Organization Chart of Sewer Staff

Description of General Responsibilities

City Manager – Provides policy direction.

Public Utilities Director - Implements City policy, establishes Public Utilities Department policy, plans department strategy, leads department staff, allocates resources and delegates responsibility.

Planning and Development Services Director - Implements City policy, establishes Planning and Development Services policy, plans department strategy, leads department staff, allocates resources and delegates responsibility.

Assistant Public Utilities Director - Implements Public Utilities Department policy, assists the Public Utilities Director in development of department plans and programs including the sewer operations and the capital improvement program, reviews project plans and specifications for public utilities projects, confers with engineering consultants, officials of other public agencies and other departments, is responsible for regulatory compliance, coordinates development and implementation of SSMP, oversees and coordinates sewer maintenance operations.

City Engineer - Coordinates minor updates to wastewater system master planning documents due to development changes, manages the capital improvement delivery program in consultation with the Public Utilities Department. Is responsible for the development and updating of standard specifications and drawings for the City, implements capital improvement program and is responsible for construction management of City and developer projects.

Inspector - Ensures that new and rehabilitated sewer facilities meet City standards, works with City maintenance staff to respond to contractor emergencies.

Utilities Manager - Manages field operations and maintenance activities, provides information to upper management, prepares and implements contingency plans, supervises emergency response, reviews capital improvement and development plans for wastewater facilities, purchases equipment and trains field crews.

Construction Manager - Provides quality assurance for new and rehabilitated sewer facilities, acts as a liaison between the Public Utilities Department and the Planning and Development Services Department.

Associate Civil Engineer – Provides technical advice and review related to sewer maintenance operations and regulations.

Engineering Technician - Updates the City's GIS system for wastewater facilities.

Maintenance Leadworker - Coordinates field activities, leads field crews in maintenance activities and emergency response, investigates and reports SSOs.

Maintenance Crew - Conducts preventive and corrective maintenance activities, respond to notification of stoppages and SSOs and provide by-pass pumping. This crew consists of six maintenance and senior maintenance workers and 1.25 utility workers. There are two two-person cleaning teams, and 3.25 staff members that are utilized to video sewer mains, provide lift station maintenance and repairs and perform Underground Service Alert markings.

Authorized Representative

The City’s authorized representative in all wastewater collection system matters is the Assistant Public Utilities Director. The Assistant Public Utilities Director is authorized to certify electronic spill reports submitted to the State Water Resources Control Board.

The Utilities Manager is authorized to act in the Assistant Director’s absence.

The Utilities Manager and the Wastewater Maintenance Leadworker are authorized to submit SSO reports to the appropriate government agencies.

Responsibility for SSMP Implementation

The Assistant Public Utilities Director is responsible for implementing and maintaining all elements of this SSMP.

2.4 SSO Reporting Chain of Communication

Figure 2-2 contains a flowchart depicting the chain of communication for responding to and reporting SSOs, from observation of a SSO to reporting the SSO to the appropriate regulatory agencies. Table 2-1 lists contact phone numbers for the parties included in the chain of communication. The SSO Reporting process is described in more detail in Element 6: Overflow Emergency Response Plan.

Table 2-1. Contact Numbers for SSO Chain of Communication

Contact	Telephone Number
Assistant Public Utilities Director	(559) 324-2607
Municipal Service Center	(559) 324-2600
Police/Fire Dispatch	(559) 324-2800
Sewer On Call Personnel	(559) 324-2600
Utilities Manager	(559) 324-2611

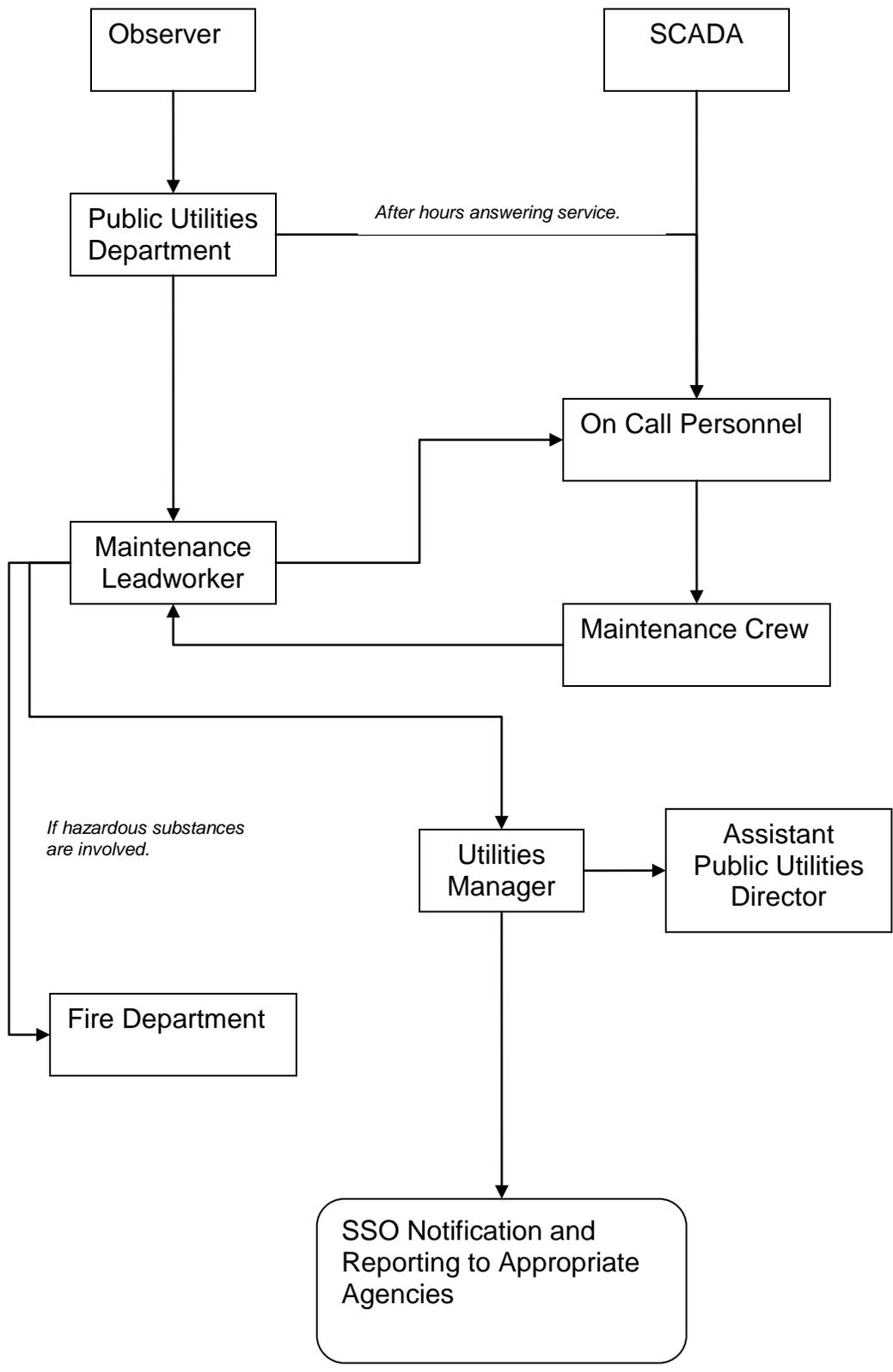


Figure 2-2. SSO Response Chain of Communication

Element 3 – Legal Authority

This section of the SSMP provides documentation of the City of Clovis' legal authority to regulate uses, discharges and regulate construction standards for sanitary sewers within the service boundaries. This authority includes the right to enforce violations.

3.1 Regulatory Requirements for Legal Authority Element

The requirements of the General WDR for Wastewater Collection Agencies Sewer System Management Plan (SSMP) organization element require as follows:

The City of Clovis must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possessed the necessary legal authority to:

- (a) Prevent illicit discharges into its sanitary sewer system, including infiltration and inflow from satellite wastewater collection systems and laterals, storm water, unauthorized debris, etc.
- (b) Require proper design and construction of sewers and connections.
- (c) Ensure access for maintenance, inspection and repairs to publicly owned portions of laterals.
- (d) Limit the discharge of fats, oil and grease (FOG) and other debris that may cause blockages.
- (e) Enforce violations of its sewer ordinances.

3.2 Element 3 Appendix

Supporting information for Element 3 is included in Appendix B. This appendix includes the following documents:

1. [Fresno-Clovis Regional Sewerage System Joint Powers Agreement dated March 3, 1977](#)
2. [Addendum No. 7 – Fresno-Clovis Regional Sewerage System Joint Powers Agreement Dated March 1977 Pretreatment Program dated September 23, 2003.](#)
3. [City of Clovis Municipal code section 6.4 SEWAGE DISPOSAL.](#)
4. [City of Fresno Municipal code Article 3 SEWAGE AND WATER DISPOSAL.](#)
5. [City of Clovis Standard Specifications 2012 Section 64 SANITARY SEWER FACILITIES and Section 65 SANITARY SEWER FORCE MAINS.](#)

6. [City of Clovis Public Utilities Department CONFINED SPACE ENTRY PROCEDURE.](#)
7. [City of Clovis Utilities Ownership, Operation and Maintenance Policy 2006](#)
8. [Water and Sewer Repair Policy 1998](#)

3.3 Legal Authority Discussion

The [City of Clovis Municipal code chapter 6.4](#) covers sewage disposal within the City limits and approved applicants outside the City limits where sewer service is available. Section 6.4.02 requires that every building or structure in which plumbing fixtures are installed and every premise having piping which conveys sewage or liquid water to a legal point of disposal shall be connected to the public sewer if available. The section forbids the disposal of sewage or other liquid wastes into any drainage system or property which is not connected to a public sewer.

The City of Clovis has a [Joint Powers Agreement](#) with the City of Fresno to provide for treatment and to provide the [City's pretreatment program](#). As a result, City Ordinance 6.4.15 Discharge prohibitions and industrial reporting requirements, refers to the [City of Fresno Municipal Code](#) which is adopted by reference. The Fresno Ordinance in Section 6-301. (c). indicates that Article 3 Sewage and Water Disposal, shall apply to the City of Fresno and to persons outside the city (Fresno) who are by contract, permit or agreement with the city, users of the city's publicly owned treatment works (POTW). Specific discharge prohibitions are included in Sec. 6-327 FMC.

Sewer connections and main construction are required to be inspected by the City and to be installed in conformance with [standard specifications](#) for sanitary sewers in the City per Section 6.4.04.

The [Water and Sewer Repair Policy](#) dated January 2, 1998 clarifies City responsibilities and private property owners' responsibilities in regard to sewer pipes. The policy states that Sewer Mains shall be the responsibility of the City to maintain if they are located in the street right of way or in a dedicated easement to the City for utility purposes and if they are available for connection to by other property owners. Sewer Laterals shall be the responsibility of the property owner to maintain from the connection to a City sewer main to the building or point of use.

[Utilities Ownership, Operation and Maintenance Policy for Private Development](#), dated April 4, 2006 is a successive policy to the Water and Sewer Repair Policy and states "Sewer service laterals connecting a user, whether a Private Development or a single family residence, to a City-owned sewer main located in public right of way or easement will remain under the ownership, operation and maintenance by the owner of the property being served, from the lateral's

connection point at the City sewer main to the building or other point-of-use.” For City maintained sewer mains a minimum 15 feet wide easement is required per this policy.

The City by reference to the City of Fresno Municipal Code has adopted a Fats, Oil and Grease Program titled FATS, OILS, & GREASE (FOG) CONTROL PROGRAM contained within The City of Fresno Municipal code article 3 section 6-321.1. This program requires a FOG Wastewater Discharge Permit for all food service establishments.

Enforcement of the ordinances related to sewage disposal is provided for in Clovis Municipal Code (CMC) 6.4.18 Duty of enforcement, which by reference refers to the provisions and procedures in the Fresno Municipal Code. The City has the authority under Ordinance Section 6.5.110(b) to discontinue water service for non compliance with any law regarding the disposal of water.

The City of Clovis Municipal code, section 6.4.17, indicates the officers, employees, and inspectors of the City shall have the right to enter upon the premises of any person at reasonable hours to inspect and determine whether the provisions of the ordinance are being violated.

Element 4 – Operation and Maintenance Program

This section of the SSMP provides documentation of the City of Clovis' Operation and Maintenance Program. An essential element of this segment is the accurate mapping of the collection system and maintenance of the mapping system and its appurtenances.

4.1 Regulatory Requirements for Operation and Maintenance Program Element

The requirements of the General Waste Discharge Requirements (WDR) for Wastewater Collection Agencies Sewer System Management Plan (SSMP) organization element require as follows:

4.1 a. Collection System Map. The City shall maintain up to date maps of its wastewater collection system facilities, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water pumping and piping facilities.

4.1 b. Preventive Operation and Maintenance. 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 Preventive Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.

4.1 c. Rehabilitation and Replacement Plan. Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the conditions 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.

4.1 d. Training. Provide training on a regular basis for staff in sanitary sewer system operations and maintenance and require contractors to be appropriately trained.

4.1 e. Contingency Equipment and Replacement Inventories. Provide equipment and replacement part inventories, including identification of critical replacement parts.

4.2 Element 4 Appendix

Supporting information for Element 4 is included in Appendix C. This appendix includes the following documents:

1. [City of Clovis Wastewater Collection System Overview Map; including pump station and lift station service areas.](#)
2. City of Clovis wastewater plat maps; covers all sections of service area.
3. [Storm Drain System Map.](#)
4. [Cleaning Cycles.](#)
5. [Lift Station Sample Maintenance Log.](#)
6. [Utilities Training Topics.](#)
7. [Safety Training Report.](#)
8. [Employee Safety Orientation form.](#)
9. [Utilities Safety Meeting Attendance form.](#)
10. [Critical lift station and mobile equipment parts list.](#)
11. [Vehicle replacement schedule program.](#)
12. [Sample video inspection report.](#)
13. [Station B & E operations valve configurations mapping.](#)

4.3 Operation and Maintenance Discussion

4.3 a. Collection System Map

The service area of the City of Clovis wastewater collection system contains a separate and independent storm water collection system. This storm water system is managed by a separate agency, the Fresno Metropolitan Flood Control District. This system includes the City within its geographic service area and also includes the City of Fresno and areas of Fresno County.

The City of Clovis began utilizing a Geographic Mapping System in the late 1990's. The effort included the use of Global Positioning Satellite (GPS) technology to physically locate all City owned utility features. The Public Utilities Department employs one full time engineering technician dedicated to updating and revising the City's Geographic Information System (GIS). The department's engineering technician is responsible for updating wastewater and water plats. This includes new development tracts, Capital Improvement Program (CIP) projects, major facility upgrades, and revisions and corrections report by field maintenance staff. New developments and replacement projects require "as-built" plans to be issued to the City Planning and Development Services Department, Engineering section. As these plans are received, a copy is issued to the department engineering technician by the City engineering section. This

GIS electronic map is considered the master copy of the wastewater collection system. As plat sections are updated the engineering technician prints and distributes the plat updates to management and maintenance personnel. The plat maps include the date of the update and features such as manhole numbers, pipe size, pipe type, pipe depth, and the direction of sewage flow. Each plat has a section number and the manholes within each section are based upon the section number.

4.3 b. Preventive Operation and Maintenance

The wastewater section maintains a collection system cleaning schedule for the entire system. The cleaning schedule is broken into cleaning routes; one route for each quarter mile square section. The cleaning route is based on the individual section plat maps. The routes are designed to provide operators with a logical progression of cleaning within the section beginning with start manholes and working downstream. The cleaning routes include manhole numbers, pipe size and the length of each pipe run. The routes are printed and distributed to maintenance personnel assigned to sewer main line cleaning. Upon completion the routes are turned in to the leadworker. The routes are updated by the leadworker upon completion by the maintenance crew. Observations and recommendations from the notes section of the cleaning cycle are investigated by the leadworker who makes changes and updates to the cleaning cycle if necessary following confirmation of field observations. These changes are also relayed to the department engineering technician when map corrections are required.

The primary cleaning method employed by the City is high velocity flushing. The section regularly utilizes two Superproducts “Camel” brand combination vacuum/high velocity cleaning trucks. Currently the department operates one 2009 Camel truck and one 2013 Camel truck. Financing the replacement funds for these vehicles is included in the Fleet vehicle replacement fund. Annually money is budgeted for vehicle replacement and transferred to the fleet fund. Annually the fund amounts are reviewed in relation to anticipated true costs of vehicle replacement.

The department goal is to clean the entire system annually. Within this goal are various levels of scheduled sewer line cleaning. Like most agencies, Clovis prioritizes frequent cleaning cycles based on operator experience, field observations, video inspections, blockages, pipe age, pipe size, and pipe material. The result is a monthly cleaning cycle for problem lines, a three month cleaning route, a six month cleaning route and the normal annual cleaning routes. The lines listed on the monthly problem line cycle are somewhat transitory as they are prime candidates for rehabilitation or replacement if physical or structural defects can be corrected thus eliminating the need for frequent maintenance. The combination of monthly cleaning, three month cleaning, six month cleaning, and annual cleaning routes results in a total

cleaning demand of 375 miles of pipeline annually. Due to the overlap in cleaning schedules this is 53 miles more than the 322 miles of system pipeline.

The collection system includes five lift stations and two pumping stations. The two pump stations are the primary supply sources for the Sewage Treatment-Water Reuse Facility (ST-WRF). The ST-WRF was commissioned in 2009 for wastewater treatment. The five lift stations serve various sections of the collection system which cannot gravity flow due to geographic constraints. The maintenance section performs all routine checks and maintenance of all City lift and pump stations. Routine maintenance is scheduled three times a week. Routine maintenance has three layers of inspection increasing in depth and scope: daily, weekly, and monthly. All lift stations have pumping redundancy and critical lift and pump stations have back up generators for power outages. Operation and maintenance manuals for lift and pump stations are housed at the City Corporation Yard along with station design drawings.

4.3 c. Rehabilitation and Replacement Plan

The City's wastewater section has performed in house video inspections for nearly twenty-five years. The inspections are generally broken down into three categories: routine inspections, problem investigation, and engineering locating. The vast majority of completed video footage is the result of routine inspections. This activity is used to develop line replacement or repair projects for the City Capital Improvement Program. Annually the section queries the video inspection software program for line segments with the greatest defects. These are reviewed for in house repair or CIP project candidates. Videos for system problem investigation stem from reports from the cleaning personnel or from suspected discrepancies in new construction areas. Occasionally, the section also performs video inspections to locate sewer laterals for CIP projects or internal water projects. In addition to the in house inspections, all new developments are required to submit a video inspection recording and report for review prior to acceptance.

Since the year 2000 the department has made significant investments in its video inspection system. That year the City acquired of a new self contained video van from CUES Corporation. Since then the system has seen software and hardware upgrades including CUES Granite XP software in 2007 and new cameras. This includes the ability to store acquired data on the City computer network for access by the Public Utilities Department as well as the Engineering unit.

The department has completed video inspection of all older sections containing vitrified clay pipe (VCP) and concrete pipe segments. These areas have received the greatest amount of inspections due to age and deterioration susceptibility. A portion of new plastic SDR 35 pipe lines have also been videoed since completion of the initial assessment in older sections. Due to the time requirements to video older sections the department is currently starting to

re-inspect the oldest sections a second time and delay completion of inspections for the newer sections of the collection system.

Once the data is collected on system condition, projects are proposed for the Capital Improvement Program. Depending on the severity of the problem and funding availability they are prioritized and put into the five-year program. Funding for rehabilitation and replacement projects are included in the user fees for service. The fund balance is examined each year by looking at the current year expenses and the anticipated expenses for the next five years in the future. If the fund balance is projected to decline below bond reserve requirements a user fee increase is planned for implementation.

4.1 d. Training

Staff is trained when they first come to the section on each piece of equipment that they will be using and the safety aspect of the equipment. As new equipment is received all staff receives training on the equipment. Training is provided to staff on confined space entry, backhoe operation, camel operation, heat illness prevention, blood borne pathogen, defensive driving, lockout tagout and other topics per the [Utilities Training Topics](#) spreadsheet. Safety training is documented on the [Employee Safety Orientation Form](#). Weekly tailgate meetings are documented on a [sign in sheet](#). Training documentation forms are then entered into a database for all employee training called [Safety Training](#).

Collection system training is provided for employees with presentations by vendors, City staff, and through correspondence courses. Staff is encouraged and given goals of attaining collection system certification. Currently over half of staff is certified with the goal of all being certified.

4.1 e. Contingency Equipment and Replacement Inventories

The City owns a 6" mobile pump with a sound enclosure which can be set up for bypass pumping in the event of pump station failure. However, all pump stations are designed with redundancy features. Each pump station has two pumps which can each handle the full station flow. They normally rotate operation based on start times so that each pump gets equal wear. Additionally backup power is available at each site except the Gettysburg/Phillip Lift Station. The generators are exercised automatically on a routine basis.

The Clovis lift station pumps are standardized at the Peach/Stuart, Tollhouse/Helm, Gettysburg/Phillip and the Helm/Holland lift stations.

Element 5 – Design and Performance Provisions

This section of the SSMP provides documentation of the City of Clovis' Design and Performance Provisions.

5.1 Regulatory Requirements for Design and Performance Provisions

The requirements of the General WDR for Wastewater Collection Agencies Sewer System Management Plan (SSMP) organization element are as follows:

5.1 a. Standards for Installation, Rehabilitation and Repair.

The City shall identify design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations, and other appurtenances, as well as for rehabilitation and repair of existing sanitary sewer systems.

5.1 b. Standards for Inspection and Testing of New, Rehabilitated, and Repaired Facilities.

The City shall identify the procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances, and for rehabilitation and repair projects.

5.2 Element 5 Appendix

Supporting information for Element 5 is included in Appendix D. This appendix includes the following documents:

1. [City of Clovis Standard Specifications](#) section 64 SANITARY SEWER FACILITIES.
2. [City of Clovis Sewer System Standard Drawings](#).

5.3 Design and Performance Provisions Discussion

5.3 a. Standards for Installation, Rehabilitation and Repair

The City standard drawings and standard specifications were updated in 2012 and have had minor updates since then. The goal of the process was to update drawings and specifications to include newer processes and technologies, create drawings and specifications where gaps existed, and to streamline both documents by making them more cohesive and consistent. The changes to the sewer section of drawings and specifications were minor in comparison to other sections. Staff from the Public Utilities and Engineering Departments worked

together on the Standard Drawings and Standard Specifications. An external audit and review process was also employed utilizing a local consulting engineering firm as well as other independent consultants.

The drawings and specifications are referenced during the plan review process for new development and CIP projects. These documents form the basis for the City's inspection and acceptance process for all projects. The City employs standard construction inspection practices for sewers including pressure testing, CCTV inspection, mandrel testing and backfill and compaction testing.

Rehabilitation and repair projects are subject to the City Standard Drawings and Standard Specifications. If rehabilitation and repair technologies are proposed for particular projects which are not included in the City Standard Drawings and Standard Specifications, they must be submitted to the City Engineer and public utilities management staff for review prior to acceptance. Acceptance is project specific and does not grant any overt or implied acceptance for any other projects.

5.3 b. Standards for Inspection and Testing of New, Rehabilitated, and Repaired Facilities.

All work constructed for the City of Clovis, whether new, rehabilitated or repaired, is inspected by the City of Clovis Planning and Development Services Construction Management Section.

Element 6 – Emergency Overflow Response Plan

This section of the SSMP provides documentation of the City of Clovis' Emergency Overflow Response Plan.

6.1 Regulatory Requirements for Emergency Overflow Response Plan

The requirements of the General WDR for Wastewater Collection Agencies Sewer System Management Plan (SSMP) organization element are as follows:

The City shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. The minimum elements to be included in the plan are listed below:

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

6.2 Element 6 Appendix

Supporting information for Element 6 is included in Appendix E. This appendix includes the following documents:

1. [SSO data collection check list.](#)
2. [SSO field report.](#)
3. [SSO contact list.](#)
4. SSO [Access](#) data base.

6.3 Emergency Overflow Response Plan Discussion

Utilities staff have developed a sanitary sewer overflow response plan which includes emergency response, spill containment, corrective actions, spill recovery, and agency reporting. The responding chain of command is addressed in section 2.4 of this document, including methods of contacting and dispatching responding personnel. This includes electronic SCADA system auto dialer and the use of an after hours answering service to ensure a response 24 hours a day.

Field staff is trained in SSO response via internal training as well as training sessions provided by the California Water Environment Association. Section vehicles are equipped with SSO Field Reports and SSO contact lists. Operators are trained to determine the source of an overflow, location, SSO category, and log observations required for reporting. The priority of the first responder is to contain spill, if possible, by blocking any storm drains and/or building a dam to keep wastewater from spreading or entering a drainage channel or inlet. An accessible spill containment kit is located at the wastewater shop which includes items such as drain waddles, absorbents, and drain covers. The second on-scene person calls in a supervisor to complete a SSO report and any other personnel to assist with the SSO.

The supervisor will then serve as a scene coordinator and determine if additional City resources are required at the site for site security, public safety, or to mitigate other potential hazards. Evacuation coordination would be handled by City emergency services; Clovis Fire Department or Clovis Police Department. The supervisor will make a field determination of category 1, 2 or 3 SSO, proceed with reporting requirements, and determine the best approach to spill recovery and clean up. Additional Public Utilities personnel will be utilized for large overflows which require bypass pumping, traffic control, underground repair, or pump repairs.

The following is The City of Clovis, Wastewater Department's field procedures when responding to a SSO. All City of Clovis wastewater employees have been notified and trained on the SSO procedures.

1. **ALWAYS NOTE TIME:** RECEIVED CALL, ARRIVED ONSITE, OVERFLOW STARTED/STOPPED, CLEAN UP COMPLETED, ETC...
2. **STOP SANITARY SEWER FROM ENTERING STORM SYSTEM:** Do what is needed to stop the inflow of sewage to the storm system; Examples – absorbent, block DI's, set up camel to vacuum wastewater before it enters DI.
3. **FIX CAUSE OF SSO:** Blocked sewer main, lift station failure, etc...
4. **WHEN OVERFLOW HAS STOPPED, PROCEED WITH CLEANUP/SANITIZE STREET, CURB AND GUTTER, DRAIN INLETS;** USE A DISINFECTANT, WASH DOWN STREET, AND VACUUM UP WATER BEFORE IT ENTERS DI.
5. **START TO COMPLETE SSO REPORT FORM:** DETERMINE AMOUNT OF WASTEWATER RELEASED FROM SANITARY SEWER SYSTEM. MANHOLE #'S, SIZE OF LINE, LENGTH OF LINE, DURATION OF OVERFLOW, AMOUNT IN GPM (USE PICTURES AND/OR CHART).
6. **For Category 1 SSO with greater than 1,000 gallons that discharges to surface water WITHIN 2 HOURS NOTIFY OES, COUNTY HEALTH DEPT, FMFCD:** INFORMATION IS ON THE "SSO NOTIFICATION CONTACT LIST".
7. **CONTACT ANY OTHER AGENCIES AFFECTED BY SSO.**
8. **ONLINE REPORT MUST BE COMPLETED within 3 business days.**

Element 7 – Fats, Oil, Grease (FOG) Control Plan

This section of the SSMP provides documentation of the City of Clovis' Fats, Oil, Grease (FOG) Plan.

7.1 Regulatory Requirements for Fats, Oil, Grease (FOG) Control Plan

The requirements of the General WDR for Wastewater Collection Agencies Sewer System Management Plan (SSMP) Fats, Oil, and Grease (FOG) Control Plan element are as follows:

The City shall evaluate its service area to determine whether a Fats, Oil, Grease (FOG) Control Plan is needed for the City service area. If it is determined that a FOG program is not needed the City must provide justification as to why it is not needed. If Fats, Oil, and Grease are determined to be a source of collection system problems the City must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. The FOG control plan must include the following elements as the City deems appropriate:

- (a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
- (b) A plan and schedule for the disposal of FOG generated within the sanitary 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 service area;
- (c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
- (d) Requirements to install grease removal devices such as interceptors, design standards for the removal devices, maintenance requirements, best management practice requirements, record keeping and reporting requirements;
- (e) Authority to inspect grease producing facilities, enforcement authorities, and whether the City has sufficient staff to inspect and enforce the FOG ordinance;
- (f) Identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and
- (g) Develop and implement source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in item (f) above.

7.2 Element 7 Appendix

Supporting information for Element 7 is included in Appendix F. This appendix includes the following documents:

1. [City of Fresno Fats, Oil, Grease \(FOG\) Program.](#)
2. [City of Fresno Web Page for FOG Program](#)
3. [Industrial Pretreatment Program](#)
4. [Enforcement Response Plan](#)

7.3 Fats, Oil, Grease (FOG) Control Plan Discussion

Historically the City of Clovis collection system has seen minimal impacts as a result of fats, oils, and grease discharges. The primary impacts have been to small diameter sewer mains, six and eight inches, as well as mains which serve high volume restaurants. Impacts from FOG discharges are minimized through increased sewer line cleaning of these problem locations, routine video inspection to detect sewer main defects such as sags or off set joints which can contribute to the accumulation of grease, and the application of a FOG program. While the negative impacts of FOG have been small, the City of Clovis has partnered with the City of Fresno in utilizing Fresno's FOG program and inspection process to control the impacts of FOG to the City's collection system.

As decades long partners in the Fresno-Clovis Regional Wastewater Treatment Facility the two agencies have developed a pre-treatment partnership. Per the Joint Powers Agreement between the two agencies, the City of Fresno is designated as the lead agency to monitor pre-treatment wastewater operations including the dischargers of fats, oils, and grease. By agreement, Fresno will continue to provide Clovis with this service as Clovis' wastewater will continue to be treated at the joint regional facility. The City of Clovis has adopted Fresno's ordinance including the FOG program by agreement. Elements of this program include public education and outreach, facility inspections, and the legal authority of enforcement. Included in the facility inspections is the right to view disposal records and physical inspection of on site grease traps and interceptors. Legal authority of FOG control agents including the authority to prohibit discharges into the collections system and perform inspections is included in the City of Fresno FOG program in appendix F of this SSMP.

Requirements for on site FOG control devices are set forth in the City site plan review process. During this process the Public Utilities Department along with the Planning and Development Services Department review and set conditions

for the applications for use. Standards for the construction of grease interceptors are included in the City Standard Drawings issued by the City Engineer. Internal devices are subject to the accepted Uniform Plumbing Code and subject to inspection by the City Building Division.

Sanitary sewer overflows including locations and causes are tracked by the City of Clovis Public Utilities Department. This data is contained in a data base which is included in appendix E of this SSMP. The cause and locations of SSOs are used to identify sections of the collection system which require more frequent cleaning as discussed in section 4.3 *Operations and Maintenance* of this SSMP.

Element 8 – System Evaluation and Capacity Assurance Plan

This section of the SSMP provides documentation of the City of Clovis' System Evaluation and Capacity Assurance Plan.

8.1 Regulatory Requirements for System Evaluation and Capacity Assurance Plan

The requirements of the General WDR for Wastewater Collection Agencies Sewer System Management Plan (SSMP) System Evaluation and Capacity Assurance Plan element are as follows:

The City shall prepare and implement a capital improvement plan that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:

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

8.2 Element 8 Appendix

Supporting information for Element 8 is included in Appendix G. This appendix includes the following documents:

1. [City of Clovis Sewer Master Plan.](#)
2. [CIP schedule for wastewater projects.](#)

8.3 System Evaluation and Capacity Assurance Plan Discussion

8.3.a & b. System Evaluation and Design Criteria

In 2008 the Clovis Wastewater Collection System Master Plan (CWCSMP) was completed. The CWCSMP is a culmination of a multi-phase project commenced in 1995 to update the City's Wastewater Master Plan. It is designed to provide a course of action for the City of Clovis with respect to wastewater service needs through the year 2030, in conformance with the 1993 Clovis General Plan. The CWCSMP remains a living document in that there is the need for continued effort to modify and update the plan in response to ongoing community planning and development activity. The master planning process consisted generally of developing design criteria, defining wastewater service areas, developing wastewater flow projections, analyzing and designing collection system pipelines, and summarizing results.

The CWCSMP was developed with a focus on major elements: *Service Areas, Wastewater Flow Projections and Capacities, Collection System Analysis and Design, Master Plan Plats, Regional Trunk Sewer System Issues, Flow Metering of Clovis Trunk Sewers, and Major Elements of Clovis' Wastewater System Infrastructure.*

Certain elements of the CWCSMP are critical to the City's SSMP as they focus on the areas of system evaluation and capacity assurance to measure current needs as well as design and build to meet future system demands.

Wastewater flow projections were determined for all areas within the Clovis Sphere of Influence except for areas planned for rural residential development or agricultural uses. Wastewater flow generation rates for the major land use categories were applied to projected development based upon planned uses from the Clovis General Plan. For each service area discharging to the regional trunk sewer system, flows were calibrated using currently developed properties with metered flow at the trunk sewer discharge point. This provided the basis for calculations on future development.

Criteria for pipeline analysis and design were established, including hydraulic elements and pipeline depth limitations. A custom hydraulic computer model

was developed to analyze the hydraulics of individual segments of the sewers, utilizing the established hydraulic criteria. Existing sewers ten inches in diameter and larger (and some eight inch diameter sewers where necessary to assure adequacy of capacity) were analyzed. All proposed new major sewers were also analyzed and sized.

8.3.c. Capacity Enhancement Measures (Capital Improvement Plan)

In those few segments where the standard analysis indicated apparent lack of capacity for planned build out flow in the existing sewer system, a more comprehensive analysis was performed. In most cases, calibration of the calculated existing flow to match the trunk sewer service area measured flow was sufficient to indicate adequate capacity for build out. In other cases, specific flow metering was performed at or near the site to confirm adequate capacity for build out flow. If these analyses failed to indicate adequate design capacity, the segment was noted on the CWCSMP as requiring upgrading within the City's Capital Improvement Program (CIP).

8.3.d. Schedule

The CIP program is a five year plan that is updated annually with completed projects removed and new project requests added. Review of the current project prioritization is also included in the annual CIP project list review. A review of all SSOs occurring during the past ten years revealed none due to capacity or hydraulic conditions regardless of weather.

Analysis of regional sewer system issues was also included in the 2008 CWCSMP. Trunk sewers downstream of the Clovis collection system and the Fresno Clovis Regional Wastewater Treatment Plant have both resolved past capacity limitations. Additionally, the City of Clovis recently completed construction on the new Sewage Treatment – Water Reuse Facility with a phase one daily treatment capacity of 2.8 million gallons. The associated pump stations allow for the City to control and divert wastewater flows from its major trunk sewer to this new facility.

Flow capacity and flow evaluation are performed on all four major trunk sewers which serve the Clovis collection system. The metered data is used for capacity surveillance and to establish cost sharing for treatment at the regional plant.

Element 9 – Monitoring, Measurement and Program Modifications

This section of the SSMP provides documentation of the City of Clovis' Monitoring, Measurement and Program Modifications.

9.1 Regulatory Requirements for Monitoring, Measurement and Program Modification Plan

The City shall:

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

9.2 Element 9 Appendix

Supporting information for Element 9 is included in Appendix H. This appendix includes the following documents:

1. [Database Entry Form](#)
2. [Customer Response System Form](#)
3. [Monthly Report Table](#)
4. [Budget Performance Measures](#)

9.3 Monitoring, Measurement and Program Modification Discussion

In order to measure the effectiveness of collection system operations, Public Utilities staff must monitor key system indicators and analyze these results. In place of a comprehensive computerized maintenance management system, the City utilizes various systems to monitor the collection system. Historically, sewer main blockages have been tracked in an annual log book format and were also included in the wastewater section of the Public Utilities Department monthly report. In order to have data in a more harvestable format, the Department has recently developed an Access network database to track blockages, their causes, locations, and estimated releases. The database format allows for the

creation of standard reports for annual line blockages. The database fields are based upon data gathered for electronic reporting of Sanitary Sewer Overflows.

Citizen complaints and concerns are tracked through a Customer Relationship Management (CRM) program which is used by all City departments. This system captures complaints, catalogs them, and records staff responses in a format which allows access by employees as well as the reporting residents. Complaints are time stamped to also track and record the responsiveness of departments to the public. Custom reports can be ran randomly or scheduled to measure the volume of system complaints and the corresponding results. The system has been in place for two years and has added a level of transparency and efficiency in matching problems to the appropriate work section. This system also provides feedback to the department by including an optional customer survey to grade the service the department provided.

The wastewater section also tracks work activity in the form of bi-weekly and monthly reports. These reports are based upon data gathered daily by the section leadworker. This is where detailed data on sewer footage cleaning, lift station repairs, sewer line repairs, video inspections, and complaints are logged. This is largely tabular production data based upon the activities of section maintenance personnel. Sewer cleaning data is gathered from sectional cleaning routes developed upon the GIS system mapping for the collection system. In addition to cleaning sections, the Department also more frequently cleans particular routes which are considered problematic due to age, pipe material, condition, or the type of discharges contained in these segments.

Mobile equipment such as maintenance vehicles and high velocity cleaning/vacuum machines are maintained by the City's Fleet Maintenance Department. The fleet section uses computer software to track vehicle maintenance repairs and expenses on all vehicles. This system includes an inventory of spare parts matched to specific vehicles.

A primary monitoring tool for the collection system is video inspection. The City has historically made significant investments in this technology. The City has owned Closed Circuit Television Inspection equipment for over twenty years. Lines are videoed on a routine schedule to detect problems in their early stages as well as in response to information gained from sewer cleaning crews. Line segments are scored according to the level of problems detected. The scoring allows problem lines to be queried for needed repair or increased cleaning. In 2000 the City purchased a new video van and has made improvements in this system in the past few years. These recent improvements have included upgraded software to store video and reports in a digital format on the City's network computer. The software upgrade included licensing to allow the City Engineering Division access to all data collected. This has enhanced the ability to plan and design sewer main replacement projects for the Capital Improvement Program. In 2008 the department purchased a second camera to increase the

video system reliability and limit downtime when the primary camera is out for vendor repairs.

Effectiveness is also evaluated in the City's annual budget. The budget includes performance measures for each department. These are broad goals which measure productivity, efficiency and effectiveness. The budget measures include such goals as sewer footage cleaning and limits on complaints and stoppages.

Element 10 – Internal Program Audits

This section of the SSMP provides documentation of the City of Clovis' Internal Program Audits.

10.1 Regulatory Requirements for Internal Program Audits

The City shall conduct periodic internal audits, appropriate to the size of the system and the number of Sanitary System Overflows. At a minimum, the City must conduct audits every two years and a report must be prepared and kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and the City's compliance with the requirements of the SSMP. The audit shall also include the identification of any deficiencies in the City's SSMP and identify steps to correct such deficiencies.

10.2 Element 10 Appendix

There is no appendix associated with Element 10.

10.3 Internal Program Audits Discussion

The department shall conduct audits of the Sanitary Sewer Management System on a two year basis as required. The self audits will be conducted by the utilities manager with assistance from the section leadworker. The audit report will then be reviewed by the assistant director of public utilities. The report will be presented in a format consistent with a department staff report and shall include a brief summary followed by significant system events, improvements, accomplishments, and deficiencies. A copy of the final bi-annual audit will be included with the SSMP as an attachment. The schedule of the bi-annual internal audit report shall correspond with the completion schedule of the SSMP and be completed in August of odd numbered years. The primary method of notification on the progress or results of internal audits shall be the City of Clovis website.

Currently the City collection system does not include any satellite collection systems to include in the bi-annual audit.

Element 11 – Communications Program

This section of the SSMP provides documentation of the City of Clovis' Communications Program.

11.1 Regulatory Requirements for Communications Program

The City shall communicate on a regular basis with the public on the development, implementation and performance of its Sanitary Sewer Management Plan. The communication system shall provide the public the opportunity to provide input to the City as the program is developed and implemented. The City shall also create a plan of communication with tributary or satellite systems that are connected to the City's sanitary sewer collection system.

11.2 Element 11 Appendix

Supporting information for Element 11 is included in Appendix I. This appendix includes the following document:

1. [Public Utilities Wastewater Web Page](#)

11.3 Communication Program Discussion

In the absence of satellite system partners, the communication plan of the City of Clovis SSMP focuses on the relationship between the City and its citizens. The primary tool of outreach will be through the City of Clovis website.

Element 12 – Plan Certification

This section of the SSMP provides documentation of the City of Clovis' Final Sewer System Management Plan Certification.

12.1 Regulatory Requirements for Plan Certification

The Sanitary Sewer Management Plan and the City's program to implement the SSMP must be certified by the City to be in compliance with the requirements set forth above and must be presented to the City of Clovis Council for approval at a public meeting. The City shall certify that the SSMP, and subparts thereof, are in compliance with the general Waste Discharge Requirements within the required time frame. The City's authorized representative must complete the certification portion in the on-line SSO database questionnaire by checking the appropriate milestone box, printing and signing the automated form, and sending the form to the State Water Board.

12.2 Element 12 Appendix

There is no appendix associated with Element 12.

12.3 Plan Certification Discussion

The City of Clovis Council approved the Plan as developed at a public meeting on July 20, 2009. The City's authorized representative completed the certification in the on-line SSO database questionnaire by checking the appropriate milestone box, printing and signing the automated form, and sent the form to the State

Appendices

1. ***Appendix A – Element 2: Organization***
2. ***Appendix B – Element 3: Legal Authority***
3. ***Appendix C – Element 4: Operation and Maintenance Program***
4. ***Appendix D – Element 5: Design and Performance Provisions***
5. ***Appendix E – Element 6: Emergency Overflow Response Plan***
6. ***Appendix F – Element 7: Fats, Oil, Grease Control Plan***
7. ***Appendix G – Element 8: System Evaluation and Capacity Assurance Plan***
8. ***Appendix H – Element 9: Monitoring, Measurement and Program Modifications***
9. ***Appendix I – Element 11: Communications Program***