

2017 Sewer System Management Plan Audit Report

Prepared by:



CITY *of* **CLOVIS**

PUBLIC UTILITIES

Table of Contents

Summary	3
Introduction	3
1. Audit of Goals – Order D.13.i	5
2. Audit of Organization – Order D.13.ii	7
3. Audit of Legal Authority – Order D.13.iii	8
4. Audit of Operation and Maintenance Program – Order D.13.iv	9
5. Audit of Design and Performance Provisions – Order D.13.v	12
6. Audit of Emergency Overflow Response Plan – Order D.13.vi	13
7. Audit of FOG (Fats, Oils and Grease) Control Plan – Order D.13.vii	15
8. Audit of System Evaluation and Capacity Assurance Plan – Order D.13.viii	17
9. Audit of Monitoring, Measurement, and Program Modification – Order D.13.ix	19
10. Audit of SSMP Program Audits – Order D.13.x	20
11. Audit of Communication Program – Order D.13.xi	21
Conclusion	21



Summary

The California State Water Resources Control Board's (SWRCB) Wastewater Discharge Requirements (WDR) adopted on May 2, 2006, requires that owners of wastewater collection systems with more than one mile of pipeline adopt and implement a Sewer System Management Plan (SSMP) to reduce the number and severity of Sanitary Sewer Overflows (SSOs). It is further required that the SSMP be audited every two years. The information contained herein is a report of the fourth required biennial audit of the City of Clovis' SSMP since its adoption in 2009 by the Clovis City Council.

Since the adoption of the WDR by the SWRCB in 2006, and the required implementation from collection system operators in 2009, there have been only minor changes to the WDR in reporting of SSOs and categorization of SSO's. The changes better reflect the physical distribution of SSO events and subsequent areas of impact. The changes in the WDR have resulted in no significant changes for operations staff.

This biennial audit of the City of Clovis' SSMP consists of sufficiency ratings on all 11 elements of the City of Clovis' SSMP. All elements were found to be sufficiently compliant during this audit. Commentary on improvements or enhancements is included in the narrative sections of pertinent section elements.

During fiscal years 2015/2016 and 2016/2017 the City of Clovis sanitary sewer collection system has undergone minimal system changes. Development within the collection system service area has continued to be steady while increasing during this audit period. Development is located primarily in the southeast service area of the City which has adequate sewer capacity and newer infrastructure is in place. Over the past two years, no new major facilities or projects have been initiated or completed. The maintenance collection system grew from 342 miles of sewer mains in August 2013, to 371 miles in August of 2015 then to 385 miles of pipeline as of August 2017.

Introduction

This fourth biennial audit report is submitted in accordance with the City of Clovis' Sewer System Management Plan (SSMP), completed in July 2009 and updated in 2014 in compliance with the State Water Resources Control Board Order Number 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WDR). The City of Clovis' SSMP *Element 10 – Internal Program Audits* requires the Utilities Manager to prepare an internal audit of the City of Clovis' SSMP. The audit shall focus on evaluating the effectiveness of, and the City's compliance with, the requirements of the City of Clovis' SSMP, including the identification of any deficiencies in the City of Clovis' SSMP and identifying steps to correct such deficiencies. The report shall include a short description of each SSMP

element, benchmark(s) for the element audit and findings for element compliance, a narrative summary, pertinent reference locations, and any recommendations for element compliance or improvement. Notification on the progress or results of the internal audit shall be posted on the City of Clovis website.

Audit of Element 1 – Goals per State Order D.13.i

This 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 as well as making improvements.

Audit benchmark: Review the SSMP to determine compliance to State Order by having goals which provide a plan to manage, operate, and maintain the City of Clovis sewer system.

Findings: The City of Clovis established a list of goals in its SSMP that complies with the WDR requirements. Below are the SSMP Element One goals.

2017 Audit Status – Compliant

1. Cost-effectively manage, operate and maintain all parts of the wastewater collection system. **Meets Goal** Clovis continues to provide sustainable sewer service within annual budget.
2. Provide adequate capacity to serve new growth areas in the City and peak flow. **Meets Goal** Clovis does not have any current development restrictions due to capacity limitations.
3. Minimize sanitary sewer overflows to no more than one annually per 25 miles of sewer main. **Meets Goal** Clovis is averaging less than .25 per 25 miles of sewer main annually. Clovis had only two SSOs during this audit period.
4. Mitigate the impact to customers and the environment from sanitary sewer overflows. **Meets Goal** No SSOs resulted in customer damages, outages, or environmental damage requiring mitigation.
5. Maintain all lift stations such that there are no sanitary sewer overflows due to lift station failure. **Meets Goal** No SSOs were caused by lift station failures.
6. Maintain all lift station facilities and grounds to be clean and attractive. **Meets Goal** Grounds are maintained to a satisfactory level by the Parks Department maintenance staff. Wastewater collection maintenance staff continue to maintain lift station facilities and Facility Maintenance staff provide maintenance to select structures and auxiliary equipment.
7. Perform all operations in a safe manner to avoid personal injury and property damage. **Meets Goal** Some accidents or incidents have been caused by employee conduct but largely without injury or significant property damage.
8. Regularly assess the condition of sewer mains to provide timely rehabilitation and replacement. **Meets Goal** Video inspections and assessments are ongoing in providing data for the Clovis Community Investment Program(CIP) program.

9. Maintain and invest in wastewater equipment to enhance system reliability. **Meets Goal** Clovis continues to invest in quality new/replacement equipment for the maintenance and inspection of sanitary sewers.
10. Provide quick response to customer and contractor inquiries. **Meets Goal** Clovis continues to provide on-call service and track customer interactions via the Customer Relationship Management (CRM) system.

Reference: City of Clovis SSMP 2009 and 2014 update, 2016/17 City of Clovis Annual Budget.

Recommendation: None. The City of Clovis is compliant with maintaining/achieving the goals set forth in the 2009 SSMP and 2014 update. Goal maintenance is an ongoing process and is rated by its overall effectiveness in providing consistent service and minimization of SSOs. The rate of SSOs has remained very low during this evaluation period with no environmental impacts.

Audit of Element 2 - Organization per State Order D.13.ii

This section of the SSMP identifies City of Clovis staff that is responsible for implementing the 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 requirements.

Audit benchmark: Review the SSMP for compliance with the State Order demonstrating adequate representation of staff and legal authorities.

Findings: The City of Clovis has identified staff responsible to meet the requirements of the State Order.

2017 Audit Status – Compliant

Reference: City of Clovis SSMP 2009 and 2014 update, Organizational Chart, Chain of communication flow chart.

Recommendation: None. The SSMP 2009 and 2014 update provides adequate designations of authorized representatives and responsibilities of staff. Maintenance staff responsible for responding to after-hours calls, emergencies, and SSOs is provided through an “on-call” list which is updated at six month intervals. Staff is contacted through the 24-hour answering service or the Public Utilities Supervisory Control and Data Acquisition (SCADA) system. The chain of communication has not changed since the SSMP was implemented in 2009. The organizational structure of the Utilities Section has changed very little since the implementation of the SSMP to include an Associate Civil Engineer position. The Construction Manager position was changed to a Senior Engineering Inspector to provide better quality assurance of installed facilities of which the Public Utilities Department ultimately assumes ownership of. The pertinent communication and organizational charts were updated in 2014 as required by the SSMP state order five years after the plan implementation.

Audit of Element 3 – Legal Authority per State Order D.13.iii

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

Audit benchmark: Review the SSMP for compliance with the State Order demonstrating adequate legal authority for the City to operate and regulate, and control discharges within the City sanitary sewer service area.

Findings: The City of Clovis has sufficient legal authority within City policies, the City of Clovis Municipal Code, and through the City of Fresno Municipal Code via a Joint Powers Agreement to prevent, require, ensure, limit and enforce specific control of discharges. The City of Clovis also has sufficient legal authority to regulate construction of sewer facilities to City of Clovis Standard Drawings and Standard Specifications. The authority granted in the above documents meet the requirements of the State Order.

2017 Audit Status – Compliant

Reference: City of Clovis SSMP 2009 and 2014 update, City of Clovis Municipal Code, City of Fresno Municipal Code, Fresno-Clovis Joint Powers Agreement 2003, pretreatment FOG program, City of Clovis Standard Specifications and Drawings 2012, including updates.

Recommendation: None. Construction standards and specifications changes and updates are an ongoing process. Review of standards and specifications should continue to be a joint process between Public Utilities and the Planning and Development Services Departments. Administration and inspection of commercial service users and sampling to ensure best management practices are being observed and shall continue to be a joint effort between the cities of Clovis and Fresno.

Audit of Element 4 – Operation and Maintenance Program per State Order D.13.iv

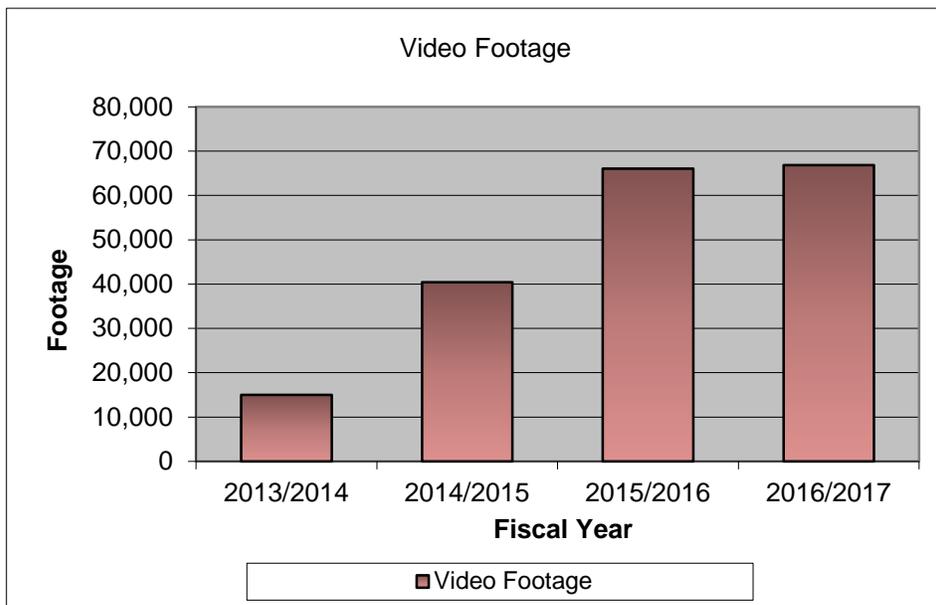
This section of the SSMP provides documentation of the City of Clovis' Operation and Maintenance Program. An essential element of this segment is the accurate mapping of the collection system and maintenance of the mapping system and its appurtenances.

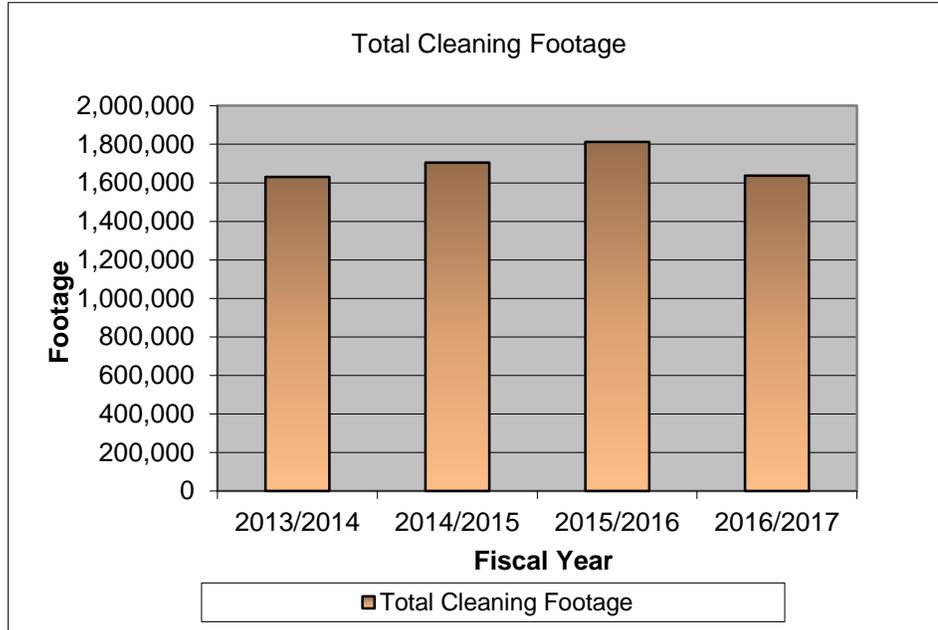
Audit benchmark: Review the SSMP for compliance with the State Order demonstrating adequate maintenance of the collection system using standard industry practices including compliance with system mapping.

Findings: The City of Clovis continues to update system mapping using Geographic Information System (GIS) technology. The Public Utilities Department has dedicated staff to map the system. Public Utilities staff continues to follow standard industry practices to provide maintenance activities throughout the collection system, including the pump and lift stations. The maintenance activities for sewer main cleaning and video inspections during the audit period are included below. Video inspection production has improved over the previous audit period. Overall, the rate of video inspection to miles of pipeline remains below what the Public Utilities department would like to accomplish. A substantial investment in acquiring a new video van, camera equipment and reporting software was completed during this evaluation period. Staff have been trained on the new equipment and software which has been incorporated into our video inspection process. The new equipment has improved reliability and, thus, video inspection production has increased. Video inspection continues to be the primary method used to development of the rehabilitation and replacement program within the City's Community Investment Program (CIP). The schedule of replacements and rehabilitation continues to be a joint effort between Public Utilities and Planning and Development Services staffs.

Sewer main cleaning maintenance has been strong. Total cleaning production is slightly below a rate of complete system cleaning within a year. Routine cleaning frequency coupled with strategic cleaning is tightly connected to low SSO rates. With that in mind, efforts have been implemented to increase cleaning production. One new staff position was added to the collection maintenance staff and an additional sewer cleaning vehicle was ordered in 2017. Moving from two to three cleaning

trucks will increase cleaning production in future years and should be critical to maintaining a low SSO rate. Staff development is also a continuing process. Currently, staff remains capable of operating and maintaining the collection system at a high level of reliability. Staff continues to be highly responsive to service demands and the response to the limited number of SSOs has been quick and efficient. Regulatory compliance with training requirements is at a high level with training in key areas of safety. Required staff utilizes the City's SCADA system to look for problems with pump and lift stations and analyze pump problem trends.





2017 Audit Status – Compliant

Reference: City of Clovis Public Utilities Maintenance Log, City of Clovis Public Utilities Sanitary Sewer reports, City of Clovis GIS map system, City of Clovis Public Utilities monthly reports, Public Utilities training schedule, Community Investment Program (CIP).

Recommendation: None. The Public Utilities Department’s process of recording maintenance activities is ongoing. In the future it will be advantageous for Public Utilities to integrate its maintenance activities into a GIS mapping/tracking program. System mapping is also an ongoing process and shall continue. Public Utilities has dedicated engineering staff to continue updating and maintaining system mapping. Training is ongoing with emphasis on safety compliance.

Audit of Element 5 – Design and Performance Provisions per State Order D.13.v

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

Audit benchmark: Review the SSMP for compliance with the State Order demonstrating adequate design and performance provisions.

Findings: The City of Clovis has identified procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for identification of rehabilitation and repair projects meeting the requirements of the State Order.

2017 Audit Status – Complaint

Reference: City of Clovis SSMP 2009 and 2014 update, City of Clovis Standard Specifications and Drawings 2012 – with subsequent updates, 2016-2017 City of Clovis Annual Budget; Community Investment Program (CIP).

Recommendation: None. Construction standards and specifications changes and updates are an ongoing process. Review of standards and specifications should continue to be a joint process between Public Utilities and the Planning and Development Services Departments.

Audit of Element 6 – Emergency Overflow Response Plan per State Order D.13.vi

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

Audit benchmark: Review the SSMP for compliance with the State Order demonstrating that the City has proper procedures in place to respond to sewer overflows including employee response and notifications to the public, affected entities, and other governmental/regulatory bodies as necessary.

Findings: The City of Clovis currently complies with overflow response and reporting requirements of the State Order by following internal procedures and the City of Clovis SSMP. The City incurred no SSOs in fiscal year 2015/2016 and only two in fiscal year 2016/2017. The frequency of SSOs remains very low during this audit period. The category 2 spill was directly caused by new construction activity. This rate of SSOs is below the goal stated in the SSMP. SSOs have been reported by wastewater staff as required by the State Water Resources Control Board utilizing the on-line California Integrated Water Quality reporting system. Field staff is trained in SSO response via internal training as well as technical training provided by the California Water Environment Association. Section vehicles are equipped with SSO Field Reports and SSO contact lists.

<u>Event ID</u>	<u>Cert Step</u>	<u>Version</u>	<u>Region</u>	<u>Type</u>	<u>Category</u>	<u>Spill Volume</u>	<u>Collection System</u>	<u>WDID</u>	<u>Spill Start</u>	<u>Location Name</u>	<u>Address</u>
833142	Certified	1.1	5	SSO	Category 3	750	Clovis City CS	5SSO11214	2017-02-23 09:30:00	Peach and Ashlan	CA
833210	Certified	1.4	5	SSO	Category 2	7920	Clovis City CS	5SSO11214	2017-02-24 17:00:00	Chennault Ave.	CA

2017 Audit Status – Compliant

Reference: City of Clovis SSMP 2009 and 2014 update, City of Clovis SSO report log, City of Clovis SSO contact list, City of Clovis SSO checklist, City of Clovis organizational chart. <https://ciwqs.waterboards.ca.gov/ciwqs/ssoSearch>.

Recommendation: None. The City of Clovis is compliant with the State Order.

Audit of Element 7 – Fats, Oil, and Grease (FOG) Control Plan per State Order D.13.vii

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

Audit benchmark: Review the SSMP for compliance with the State Order demonstrating the existence of a FOG program including public education, inventory of Food Service Establishments (FSE), regulations to control the discharge of FOG, and authority to inspect and intercede if necessary. Adequate legal authority for the City to operate, regulate, control discharges within the City sanitary sewer service area.

Findings: As decades-long partners in the Fresno-Clovis Regional Wastewater Treatment Facility, the City of Clovis and the City of Fresno have developed a pre-treatment partnership. Per the Joint Powers 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. The City of Clovis has sufficient legal authority within city policies, the City of Clovis Municipal Code, and through the City of Fresno Municipal Code via the Joint Powers Agreement to prevent, require, ensure, limit and enforce specific control of discharges. The authority granted in the above documents meet the requirements of the State Order. The City of Clovis, 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 sections 6-321.1. This program requires a FOG Wastewater Discharge Permit for all FSEs. 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.

2017 Audit Status – Complaint

Reference: City of Clovis SSMP 2009 and 2014 update, City of Clovis Municipal Code, City of Fresno Municipal Code, Fresno-Clovis Joint Powers Agreement 2003, pretreatment FOG program, City of Clovis Standard Drawings 2012.

Recommendation: None. In the Joint Powers Agreement between the City of Clovis and the City of Fresno 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 a majority of 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. Clovis will continue to follow up with FSEs based on data acquired by City of Fresno environmental officers.

Audit of Element 8 – System Evaluation and Capacity Assurance Plan per State Order D.13.viii

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

Audit benchmark: Review the SSMP for compliance with the State Order, demonstrating adequate system capacity and systematic evaluation of the system's capacity as well as detect any hydraulic deficiencies

Findings: The City of Clovis has a current Master Plan which meets the requirements of the State Order. 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. 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. 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. A review of all SSOs occurring during the past ten years revealed none due to capacity or hydraulic conditions regardless of weather. If deficiencies are found in the system design or capacity, the City will prioritize replacement projects within the CIP budget. There have been no significant changes to the collection system capacity since adoption of the SSMP in 2009 and the 2014 update. City of Clovis staff from Public Utilities, Planning and Development Services, along with outside engineering consulting services, have continued to plan for future growth. In 2017 a Wastewater Master Plan Update: Phase 3 Draft Plan was produced for comment and review. This update includes capacity a study for new growth areas such as the Northwest Service Area which will begin to develop in the near future. Current development in the Southeast Service Area- Loma Vista has increased since 2014/2015. Designed major infrastructure facilities for the Southeast Service Area has been in operation from many years and continues to operate well below design capacities. Build out

of the Southeast Service Area is not anticipated to be completed in the next few years. Treatment capacities at the City of Clovis WRF remains below the daily capacity of phase one of the facility. Capacity changes in the Fowler trunk service area have been minor with some continued development in the Fowler II Service Area Northeast Service Area along with infill growth in multiple service areas.

2017 Audit Status – Compliant

Reference: City of Clovis SSMP 2009 and 2014 update, 2008 Clovis Wastewater Collection System Master Plan (CWCSMP) and Wastewater Collection System Phase 3 Master Plan draft final report, City of Clovis Standard Specifications and Drawings 2012, 2016-2017 City of Clovis Annual Budget; Community Investment Program.

Recommendation: None. The Clovis Wastewater Collection System Master Plan (CWCSMP) remains a living document which is currently in the process of updating. The Wastewater Master Plan Update – Phase 3 Master Plan draft final report was presented for review and comment in 2017. Adoption of the updated plan is expected in 2018. The master planning process consisted generally of developing design criteria, defining wastewater service areas, developing wastewater flow projections, and working with outside engineering consultants, to analyze and design collection system pipelines, and summarize results. The Wastewater Master Plan Update, Phase 3 addresses planned urban growth in the context of the 2014 Clovis General Plan and 2014 Master Service Plan. Wastewater flow generation and sewer flow calculations for the Master Plan Phase 3 Update were done using a Geographic Information System (GIS) based hydraulic modeling software package.

Audit of Element 9 – Monitoring, Measurement and Program Modification per State Order D.13.ix

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

Audit benchmark: Review the SSMP for compliance with the State Order demonstrating that the City collects and maintains data relevant to be used in review of the City's SSMP, evaluating the effectiveness of the SSMP, monitoring the effectiveness of maintenance activities, collecting trend data on SSOs, and implementing changes as appropriate.

Findings: The City of Clovis collects data sufficient to meet the requirements of the State Order. Data is collected and maintained in various formats with the Bi-Weekly and Monthly Public Utilities reports being the primary source of public documentation. SSOs are reported and cataloged in the California Integrated Water Quality System (CIWQS) on-line reporting system, as well as an internal department database. Complaints are collected in the City's Customer Relationship Management (CRM) system where they can be tracked. Report records for sewer main video inspections are maintained in a database with access to engineering and maintenance staffs. 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 measurements include such goals as sewer-footage cleaning and limits on complaints and stoppages.

2017 Audit Status – Compliant

Reference: City of Clovis SSMP 2009 and 2014 update, City of Clovis Bi-Weekly reports, City of Clovis Monthly reports, Public Utilities databases, Customer Relationship Management (CRM), CUES GraniteNet database, 2016-2017 City of Clovis Annual Budget, and the California Integrated Water Quality System (CIWQS).

Recommendation: None. Data documentation can be improved in the future with the purchase and implementation of a Geographic Information System (GIS) maintenance mapping program. Such a program could improve data collection of maintenance activities and integrate current systems used by the wastewater collection system staff such as CUES GraniteNet software.

Audit of Element 10 – Internal Program Audits per State Order D.13.x

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

Audit benchmark: Review the SSMP for compliance with the State Order demonstrating biennial audits as required. The audits shall focus on the effectiveness of the SSMP, compliance with the State Order, and identify deficiencies in the SSMP.

Findings: The City of Clovis Public Utilities Department has conducted audits as required by the State Order. A copy of the final biennial audit has been included with the SSMP as an attachment.

2017 Audit Status – Compliant

Reference: City of Clovis SSMP 2009 and 2014 update, 2011 SSMP Audit, 2013 SSMP Audit, and 2015 SSMP Audit.

Recommendation: None. A copy of the final biennial audit will be included with the SSMP as an attachment and posted to the City of Clovis website.

Audit of Element 11 – Communications Program per State Order D.13.xi

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

Audit benchmark: Review the SSMP for compliance with the State Order.

Findings: The City of Clovis is in compliance with this element of the State Order.

2017 Audit Status – Compliant

Reference: City of Clovis SSMP 2009 and 2014 update, City of Clovis website: www.ci.clovis.ca.us/

Recommendation: None.

Conclusion

The City of Clovis wastewater collection system is in good-to-exceeding standards operational condition. Field operations, management, and support staff routinely demonstrate a high level of dedication to maintaining all components of the system. The Public Utilities Department continues to invest in equipment and training to maintain system reliability. Sanitary Sewer Overflows have been low in number and have not negatively impacted the environment. Overall, City growth and service demands are moderate and within planned growth areas. Collection and Treatment systems operate below design capacities with available capacity for growth. There are no immediate plans for changes to major facilities. No major collection system facilities changes are anticipated between now and the next Sanitary Sewer Management Plan renewal or internal audit.