

*City of Bakersfield*  
*Public Works Department*  
*Sewer System Management Plan*



*December 2014*

# Sewer System Management Plan

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# **SEWER SYSTEM MANAGEMENT PLAN**

## **Section 1. GOALS for Sanitary Sewer Maintenance Program**

The City of Bakersfield's goals for its wastewater collection system is as follows:

To reduce and mitigate sanitary sewer overflows; ensure adequate capacity for peak flows; prevent public health hazards and unnecessary damage to public and private property; perform all operations in a safe manner to avoid personal injury; monitor and maintain the collection system by use of Closed Circuit Television (CCTV) equipment and hydro-jetter trucks on a regular basis; maintain proper documentation and records; and properly manage all parts of the wastewater collection system.

## **Section 2. Organization**

**Legally Responsible Official:** Stuart Patteson, P.E., Public Works Operations Manager, City of Bakersfield, 661-326-3781

**Sewer Maintenance Section,** 661-326-3111

*(See Appendix A, Streets Division Organizational Chart, for a detail of the hierarchy within the division.)*

**Street Maintenance Superintendent,** Mike Connor, 661-326-3111

**Sewer Maintenance Supervisor,** Brandon Stevens, 661-326-3111

When a report of a sanitary sewer overflow or potential sanitary sewer overflow is received, a sewer maintenance crew is dispatched to the location. These staff members are trained and experienced in identifying and verifying sanitary sewer overflows. If the report is verified as a sanitary sewer overflow, the Sewer Maintenance Supervisor is contacted and informed of the overflow. Depending on the extent and level of the overflow, the Sewer Maintenance Supervisor would contact their supervisor, the Street Maintenance Superintendent. Depending on the extent and level of the overflow, the Street Maintenance Superintendent would contact the Operations Manager (Legally Responsible Party) and/or the Public Works Director.

### **Section 3.                    Legal Authority**

The City of Bakersfield has legal authority to operate a wastewater collection system, with a sewer ordinance that describes how the public can and cannot use the sewer system. We have service agreements with certain agencies and districts with satellite collection systems that discharge into our lines. Currently those agencies are:

- East Niles Community Services District
- Kern Sanitation Authority (KSA) – Formerly Mount Vernon Sanitation District
- County Service Area 71 (CSA71)

The City of Bakersfield has legally binding requirements, that new sewer systems are properly designed and constructed to handle the present and any future growth for the area. The plans are carefully reviewed by a registered civil engineer before any construction can begin. Plans are checked to make sure there is adequate access for cleaning and repair equipment to get to all manholes, cleanouts and lift stations. If the manholes are on private property, the property owner must grant the City easement rights, which must be documented and recorded with the proper agency. The City of Bakersfield does have an ordinance (Bakersfield Municipal Code 14.12.220 B.9.), which provides the legal authority to prohibit discharge of excess Fats, Oils and Grease (FOG) that would cause adverse effects on the sewer system. The City has a written ordinance (BMC 14.12.), which allows City staff to enforce compliance with the ordinance when there are violations of illegal dumping into our system. Illegal dumping and FOG compliance is monitored by our Sewer Maintenance Crews and enforced by our Industrial Wastewater Treatment Plant Inspectors.

#### **Section 4.                    Operation & Management Plan**

The City of Bakersfield keeps up to date sewer maps on hand at various locations, including in the sewer maintenance vehicles and sewer cleaning vehicles. Map books are updated on a regular basis as new and replacement sewer lines are installed. If a discrepancy is found by either a hydro-jetting crew or the video inspection crew, it is given to the Sewer Supervisor who is responsible for making sure that the map books get corrected and updated. The Sewer Supervisor also works with our Geographic Information System (GIS) Division on placing the maps and manhole locations on the City's database. This allows the sewer maintenance crews to locate manholes and pipelines more quickly, and is a common reference for all Public Works Divisions. Currently, the City is divided into five geographical sections with six to eight areas in each section. There is a hydro-jetter vehicle assigned to each section that cleans lines on a daily basis. When an area is completed the hydro-jetter crews move to the next area and turn in daily logs on the lines cleaned that day, noting any problems found.

## Section 5. Design & Performance Provisions

The design and construction standards and specifications, as well as the inspection for the installation of new sanitary systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems are fully detailed in the City of Bakersfield's Engineering Subdivision Design Manual in the Standards for Sanitary Sewers, the Standards for Drainage, and the Sewer Pump Station Specification sections.

Links are listed to these sections below:

Standards for Sanitary Sewers:

<http://www.bakersfieldcity.us/cityservices/pubwrks/designman/pdf/1-sewers-1.pdf>

Standards for Drainage:

<http://www.bakersfieldcity.us/cityservices/pubwrks/designman/pdf/2-drainage-1.pdf>

Appendix A – Sewer Pump Station Specification:

<http://www.bakersfieldcity.us/cityservices/pubwrks/designman/pdf/6-bibapp-1.pdf>

## Section 6. Reporting of Sewer Overflows & Emergency Response Plan

The City of Bakersfield's goals for its wastewater collection system is as follows:

To reduce and mitigate sanitary sewer overflows; ensure adequate capacity for peak flows; prevent public health hazards and unnecessary damage to public and private property; perform all operations in a safe manner to avoid personal injury; monitor and maintain the collection system by use of Closed Circuit Television (CCTV) equipment and hydro-jetter trucks on a regular basis; maintain proper documentation and records; and properly manage all parts of the wastewater collection system.

1. During normal working hours, which are from 7:00 a.m. to 4:00 p.m. Monday through Friday, calls go to the Streets Division office at (661) 326-3111. These calls can come from the public, Police Department or from other City divisions. Once the call comes in, the Clerk Typist sends the call to the Sewer Supervisor if in the office. If not, they will contact the sewer crew working that area by radio. If reports come in after hours, the recording will direct them to contact the Police Department, who has the proper phone numbers to get the quickest response to correct the problem.
2. Once the Sewer Supervisor is notified of a sewer overflow, they are to call a two-person crew, respond to the location and evaluate the needs. Additional crews will be called if needed to quickly and efficiently handle the situation.
3. Any sewage spill in excess of the 1,000 gallon "reportable quantity" (California Code of Regulations, Title 23, Section (a) ) and/or a spill that reaches a channel, storm drain, or surface water will be reported to the agencies listed below. A discharge of less than 1,000 gallons must also be reported if the discharge is (or will be):
  - To waters of the State (waters of the State include all waters within the boundaries of the State, whether public or private, whether in natural or artificial channel and whether surface or subsurface),
  - To the ground within five feet of groundwater or within 500 feet of a surface water, water well, or domestic water supply source,
  - Causing a pollution or threatened pollution,
  - Causing a nuisance,
  - A potential threat to public health.



Agencies to be notified:

- Governor's Office of Emergency Services (OES) – (916) 845-8911 or (800) 852-7550
- Kern County Environmental Health (EHS) – (661) 862-8740
- Kern County Fire Dispatch (24 hrs.) – (661) 861-2521

The OES and Kern County EHS must be notified within two hours of sewer spills that reach surface water or drainage facilities that reach surface water. The City of Bakersfield is required to certify, no later than 24 hours, that the OES and EHS were notified.

4. Once the problem is resolved, the crew leader will fill out a sewer overflow form with all the vital information and turn it into their supervisor. The Supervisor then reviews the problem, makes sure everything is filled out correctly, contacts all agencies as required, and then gives it to the Clerk Typist to enter the information into the State Water Resources Control Board Sanitary Sewer Overflow database (SSO).
5. Hydro Cleaning Trucks are to be fueled and water tanks topped off at the end of the work shift, so that they are ready to respond quickly to an emergency call that comes in after normal working hours. The Sewer Supervisor is required to make random checks of this equipment to ensure this is being done.
6. The Sewer Supervisor is required to train his employees on how to estimate the amount of spillage and the proper procedure on filling out the sewer overflow form.
7. The Sewer Supervisor is required to instruct and train his crews on the proper way to clean up a sewer overflow, and to make sure that all overflows are cleaned and disinfected as instructed.

## **Section 7. FATS, OILS & GREASE PLAN (FOG)**

The City of Bakersfield currently works with the Kern County Environmental Health Services Department to distribute a FOG pamphlet when City Wastewater Staff conducts inspections at food establishments. The Wastewater Industrial Inspection Staff has distributed over 500 BMPs (Best Management Practices) to restaurants over the last years. The goal of the City is to inspect all restaurants every year. Wastewater Treatment Plant 2 is set up as a receiving station for FOG disposal.

Bakersfield Municipal Code (BMC) 14.12.220 B.9 provides the legal authority to prohibit discharge of excess FOG that would cause adverse effects on the sewerage system. The City Building Department enforces and inspects that all requirements of the uniform plumbing code and City standards are followed for new City sewer connections. City Industrial Waste Inspectors conduct new construction inspections and enforcement per BMC 14.12. Sewer Maintenance crews report any locations or areas of heavy FOG during routine or specific cleaning operations. These locations are reported to the Sewer Maintenance Supervisor who may decide that a CCTV inspection is warranted. The Supervisor will contact the Industrial Waste Inspection Division for possible investigation of the dischargers. These locations or areas are placed on a "HOT SPOT" list that is cleaned on a regular basis until the problem is corrected.

## **Section 8. System Evaluation and Capacity Assurance Plan**

The City of Bakersfield Public Works Design Engineering Division provides the sewer collection system evaluation and capacity services. The City's collection system contains approximately 1,069 miles of sewer main, six inches in diameter and greater. The system also contains 55 pump and lift stations. Overflows in the City of Bakersfield are the result of FOG and other causes of clogging or plugging of lines. There are no known pipeline capacity problems that result in sewer overflows.

There are known structural problems with certain sewers. These pipeline or manhole deficiencies are discovered during Closed Circuit Television (CCTV) inspections of the sewer lines. Pipelines that are discovered with structural deficiencies are recommended for repair, rehabilitation, or replacement. These types of projects are included in the City's 5-year Capital Improvement Program.

## **Section 9. Monitoring & Program Modifications**

### **Performance Measures**

The indicators that the City will use to measure the performance of its Wastewater Collection System and the effectiveness of its Sewer System Management Plan (SSMP) are:

- SSO Rate (SSOs/100 miles/year);
- Number of SSOs for each cause (roots, grease, debris, pipe failure, capacity, lift station failures, etc.);
- Average SSO volume (gallons);
- Percentage of SSOs greater than 100 gallons;
- Percentage of SSOs reported as Category 1;
- Percentage of total spilled sewage discharged to surface water.

### **Historical and Baseline Performance**

The City maintains information relevant to the performance of the collection system in its records. This historical performance data is for the performance measures described. The City has been reporting SSOs using California Integrated Water Quality System (CIWQS) since 2007. CIWQS data will be used as the City's historical performance data.

### **Performance Monitoring and Program Changes**

The City will evaluate the performance of its Wastewater Collection System annually using the performance measures identified above. The City will update the data and analysis in this section at the time of the evaluation. The City may use other performance measures in its evaluation. The City will prioritize its actions and initiate changes to this SMP and the related programs based on the results of the evaluation.

### **SSMP Updates**

The City will update its SSMP at least every five years. The City will determine the need to update its SSMP more frequently based on the results of

the annual audit and the performance of its Sanitary Sewer System. In the event that the City decides that an update is warranted, the process to complete the update will be identified at that time. The City will complete the update within one year following identification of the need for the update.

City staff will seek approval from the City Council for any significant changes to the SSMP. The authority for approval of minor changes such as employee names, contact information, or minor procedural changes is delegated to the Public Works Operations Manager.

The City will certify that it has completed the annual audit using CIWQS.

## **Section 10.            Program Audits**

This section outlines the auditing method that the City will follow to evaluate the effectiveness of the SSMP to identify updates that may be needed for a more effective program.

The City will audit its implementation and compliance with the provisions of this SSMP on an annual basis. The audit will be conducted by staff from the Public Works Department. The audit team may include members from other areas of the City, as needed. The scope of the audit will cover each of the major sections of the SSMP.

The results of the audit, including the identification of any deficiencies and the steps taken or planned to correct them, will be included in the SSMP Audit Report. The SSMP Audit Report will focus on the effectiveness of the SSMP program, compliance with the WDR requirements, and identification of any deficiencies in the SSMP. The SSMP Audit Report will identify revisions that may be needed for a more effective program. Information collected as part of Section 9 – Monitoring and Program Modifications will be used in preparing the audit.

## Section 11.

### Communication Program

#### Communication with the Public

The Public Works Department website contains Wastewater Collection and Industrial Waste program information with contact numbers:

<http://www.bakersfieldcity.us/cityservices/pubwrks/wastewater/index.htm>

As described in this Plan, the City reports SSOs electronically to the California Integrated Water Quality System (CIWQS). The electronic SSO data, as well as information regarding regulatory actions is available at:

[http://www.waterboards.ca.gov/water\\_issues/programs/ciwqs/publicreports.shtml](http://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.shtml).

The website will be updated to include a link for customers to the State Water Resources Control Board (SWRCB) Sanitary Sewer Overflow Program (CIWQS) website. The link to the SWRCB website will enable citizens to review for themselves all the SWRCB WDR and SSMP requirements that the City is being mandated to develop and implement.

