



Sewer System Management Plan Volume I



City of Santa Barbara
SSMP

Updated
December 2020



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Note: Appendices are located in Volume II



Abbreviations / Acronyms

BMP	Best Management Practice
Cal OES	California Office of Emergency Services
CAP	Capacity Assurance Plan
CCTV	Closed Circuit Television
CIP	Capital Improvement Plan
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System. The City uses Cartegraph OMS.
COF	Consequence of Failure
CSB	City of Santa Barbara
CSO	Collection System Operations
CWEA	California Water Environmental Association
ESRI	Environmental Systems Research Institute
ESW	Emergency Service Worker
FOG	Fats, Oils and Grease
FSE	Food Service Establishment
FTE	Full Time Equivalent
GCD	Grease Control Device
GIS	Geographical Information Systems
GPS	Global Positioning System
GWDR	General Waste Discharge Requirements
I/I	Inflow and Infiltration
KPI	Key performance indicator
LACP	Lateral Assessment Certification Program
LOF	Likelihood of Failure
LRO	Legally Responsible Official for CIWQS System Reporting
MACP	Manhole Assessment Certification Program
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
NASSCO	National Association of Sanitary Sewer Companies
NOV	Notice of Violation
NPDES	National Pollution Discharge and Elimination System
O&M	Operations and Maintenance
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services
Order	SWRCB Order No. 2006-003-DWQ adopted May 2, 2006



P3	Paradise Performance Plan used for benchmarking and performance measures
PACP	Pipeline Assessment Certification Program
PDWF	Peak Dry Weather Flows
PLSD	Private Lateral Sewage Discharge
PM	Preventative Maintenance
PWWF	Peak Wet Weather Flows
QA/QC	Quality Assurance and Quality Control
R&R	Rehabilitation and Replacement
RDI/I	Rainfall Dependent Inflow and Infiltration
RWQCB	Central Coast Regional Water quality Control Board
SCADA	Supervisory Control and Data Acquisition
SL-RAT	Sewer Line Rapid Assessment Tool (acoustic testing device)
SLIP	Sewer Lateral Inspection Program
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow (Public)
USEPA	United States Environmental Protection Agency
WCS	Wastewater Collection System
WDR	Waste Discharge Requirements
WERF	Water Environment Research Foundation
WWTP	Wastewater Treatment Plant



Executive Summary

Sanitary sewer systems experience periodic failures resulting in discharges that may affect waters of the state. There are many factors (including factors related to geology, design, construction methods and materials, age of the system, population growth, and system operation and maintenance), which affect the likelihood of an Sanitary Sewer Overflow (SSO). A proactive system-wide operation, maintenance, and management plan helps reduce the number and frequency of SSOs.

To provide a consistent, statewide regulatory approach to address SSOs, the State Water Resources Control Board (State Water Board) adopted Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems, Water Quality Order No. 2006-0003 (Order) on May 2, 2006. The WDR requires public agencies that own or operate sanitary sewer systems to develop and implement sewer system management plans (SSMP) and report all SSOs to the State Water Board's online SSO database (CIWQS).

The SSMP is a living document to facilitate proper management of the sanitary sewer system. Regular updates are made to improve system operation and maintenance with the goal of reducing the number and frequency of SSOs. The SSMP must be audited every two years, at a minimum, and updated every five years, and it must include any significant program changes. Re-certification by the City Council is required when significant updates are made to the SSMP.

Document Structure

Volume I describes how the City of Santa Barbara complies with the various provisions of the Order. Volume II contains specific information and supporting documents referenced in Volume I. The SSMP includes the following elements:

Element 1 – Goal: 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 to help reduce and prevent sanitary sewer overflows (SSOs), as well as to mitigate the impacts of any SSOs that do occur.

Element 2 – Organization: The SSMP must identify the name of the responsible or authorized representative, names and contact numbers for management, administrative, and maintenance personnel, and a chain of command for reporting SSOs.

Element 3 – Legal Authority: The Enrollee must demonstrate that it possesses the legal authority to: a) prevent illicit discharges to its sewer system; b) require that sewers be properly designed and constructed; c) ensure access for maintenance, inspection and repair; limit the discharge of materials that may cause blockages; and d) enforce violations of its sewer ordinances.

Element 4 – Operation and Maintenance Program: The SSMP must include an Operation and Maintenance (O&M) Program that includes mapping, a description of routine preventive maintenance activities, a rehabilitation and replacement plan, staff training, and an equipment list.



Element 5 – Design and Performance Provisions: The Enrollee must have design and construction standards and specifications for the installation of new and/or rehabilitated sewer systems and procedures and standards for inspecting and testing new or rehabilitated sewers.

Element 6 – Overflow Emergency Response Plan: The Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment.

Element 7 – Fats, Oils and Grease (FOG) Control Program: The Enrollee shall prepare and implement a FOG source control program if it is determined to be needed.

Element 8 – System Evaluation and Capacity Assurance Plan: The Enrollee shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity for the appropriate design storm event including an evaluation, design criteria, capacity enhancement measures and a schedule.

Element 9 – Monitoring, Measurement, and Program Modifications: The Enrollee shall maintain relevant information to establish and prioritize activities, monitor the implementation, assess the preventative maintenance program, update elements based on monitoring and evaluation, and identify and illustrate SSO trends.

Element 10 – SSMP Program Audits: The Enrollee shall conduct periodic internal compliance and effectiveness audits (at least biannually) and prepare a report.

Element 11 – Communication Program: The Enrollee shall communicate on a regular basis with the public on the development, implementation and performance of the SSMP.

City of Santa Barbara Collection System Overview

The City operates and maintains approximately 255 miles of collection system gravity sewers serving a population of approximately 92,000. The gravity sewer sizes range from 4 to 42 inches in diameter. The predominant pipe material is vitrified clay, accounting for approximately 81 percent of the collection system's total length. Polyvinyl Chloride (PVC) makes up the majority of the remaining pipe.

Approximately 85 percent of the pipes are either 6 inches or 8 inches in diameter. The average age of the collection system is approximately 50 years. The collection system facilities include 7 lift stations, 11 inverted siphons, 25 creek crossings, over 6,000 access structures (manholes and clean outs) and approximately 2.7 miles of force main. The service area is shown on Figure ES-1.

Property owners are responsible for the condition and maintenance of their sewer service lateral from the building drain to the sewer main, including the portion in the public right-of-way.

There is one satellite collection system serving the Mission Canyon area, which is owned, operated, and maintained by the Santa Barbara County Public Works Department. It consists of approximately 11 miles of gravity sewers and two lift stations, Andante and Vista Elevada. Santa Barbara County is responsible for preparing a Sewer System Management Plan for this collection system.

In addition, the City receives wastewater flow from the City of Montecito, but does not maintain any of the Montecito wastewater infrastructure.

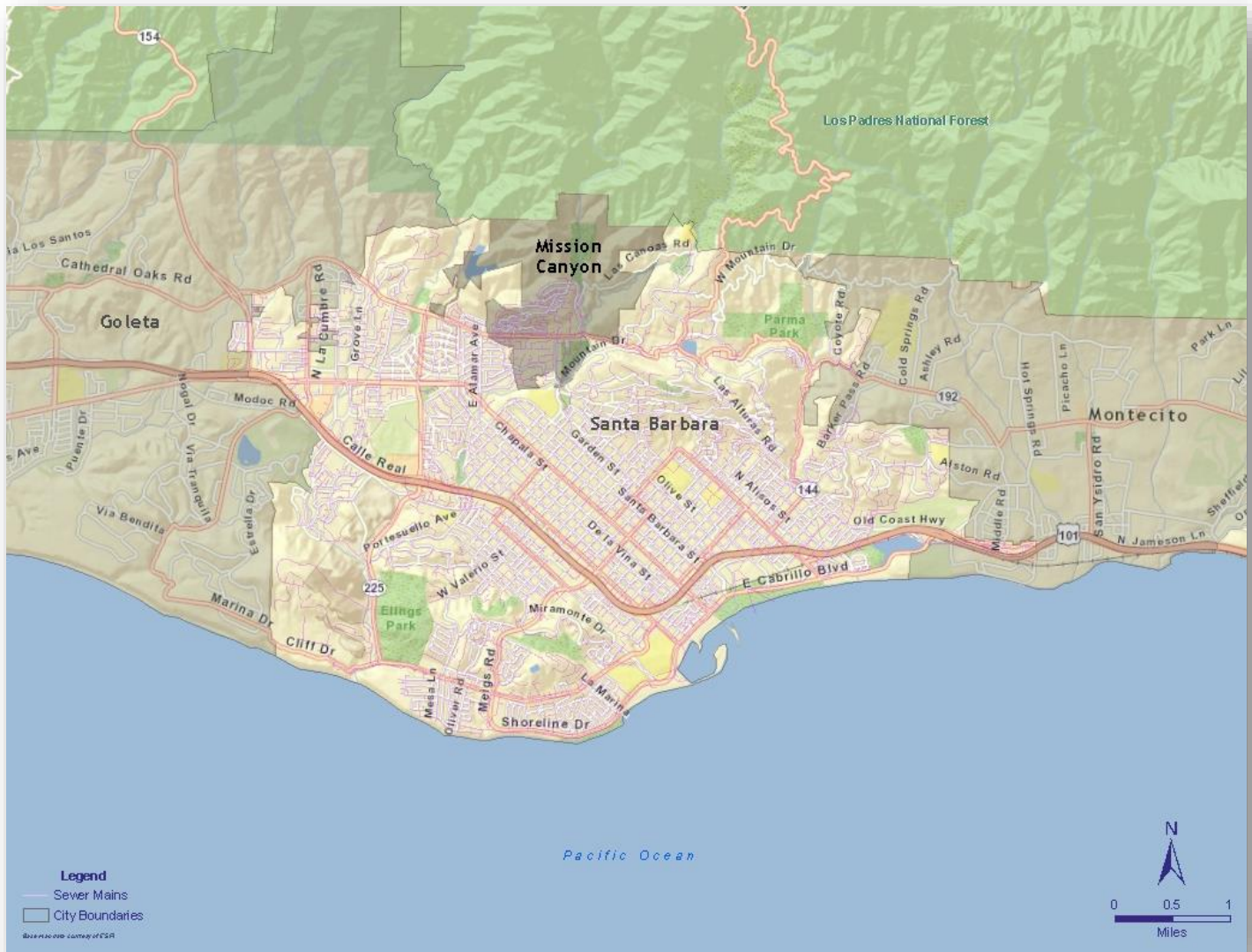


Figure ES-1. City of Santa Barbara Service Area



SSMP Element 1: Goal

WDR Requirement

D.13. (i) Goal: *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 to help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.*

Compliance

The Water Resources wastewater management program mission statement is: "Convey wastewater to the City treatment plant reliably and cost efficiently, meet all applicable state and federal requirements, and protect the environment."

To support this program's mission, the City has developed the following goals as adopted by the City Council as part of the annual Performance Measures and Objectives included in the City's budget.

The City's goals are to:

- a) Properly manage, operate, and maintain all portions of the City's wastewater collection system;
- b) Provide adequate capacity to convey the peak wastewater flows;
- c) Minimize the frequency of SSOs;
- d) Mitigate the impacts that are associated with any SSO that may occur; and
- e) Meet all applicable regulatory notification and reporting requirements.

This SSMP supports the City's existing Operations and Maintenance Program and goals by providing guidelines for all components of the program. The SSMP provides the City with a framework for effective maintenance, capacity management and SSO emergency response.



SSMP Element 2: Organization

WDR Requirement

D.13. (iii) Organization: *The SSMP must identify:*

- a) *The name of the responsible or authorized representative as described in Section J in the WDR;*
- 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 organizational chart of 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)).*

Table 2-1: Element 2 Crosswalk

Authorized Representative	Vol II, Appendix C1
Responsibilities for SSMP Implementation	Vol II, Appendix C2
	Vol II, Appendix C3
	City of Santa Barbara Municipal Code, Title 14
	City of Santa Barbara Municipal Code, Title 16
SSO Reporting Chain of Communication	Vol II, Appendix C3
	Vol II, Appendix G1, Section 3

Compliance

Authorized Representative

The City's Primary Authorized Representative in all wastewater collection system matters is the Wastewater Collection System Superintendent. This person is responsible for developing, implementing, and maintaining all elements of the City's SSMP; authorized to submit verbal, electronic, and written spill reports to the RWQCB, SWRCB, Santa Barbara County Health Department, and Cal OES; and authorized to certify electronic spill reports submitted to the SWRCB via CIWQS.

In the event the primary authorized representative is unavailable, the secondary authorized representatives would assume the primary authorized representative's responsibilities. The secondary authorized representatives are the Wastewater Collection System Manager and the Water Resources Manager, respectively.

The Wastewater Collection System Supervisor and Lead Operator are secondary authorized representatives and are able to submit verbal, electronic, and written spill reports to the SWRCB via CIWQS, RWQCB, Santa Barbara County Health Department, and Cal OES. The Wastewater Collection System Supervisor is authorized to act as the City's Authorized Representative in the Wastewater Collection System Superintendent's absence.

A list of Legally Responsible Officials and staff able to submit data to CIWQS is located in Volume II, Appendix C1.



Responsibilities for SSMP Implementation

Responsibility for inspecting and maintaining the wastewater collection system is delegated to the Water Resources Division of the Public Works Department as specified in Titles 14 and 16 of the Santa Barbara Municipal Code. Implementation of other operations and maintenance activities, including inspection, is provided by Wastewater Collection Section under Water Resources Division.

The key roles for City staff that carry out the SSMP activities are briefly states as follows:

Wastewater System Manager – Overall responsibility for managing the Wastewater Section staff and the wastewater treatment, collection and laboratory facilities. Manages the program's effectiveness by reviewing program metrics.

Wastewater Collection System Superintendent – Responsible for managing the operations and maintenance activities, and directing wastewater collection system resources. Manages the program's effectiveness by reviewing program metrics and coordination with Wastewater System Manager. Utilizes the CMMS, reports, maps, and work orders to manage the program.

Wastewater Collection System Supervisor – Directly responsible for supervising collection system field staff, including scheduling the day to day activities and training.

Wastewater System Planner/Scheduler (Cleaning and/or CCTV) – Maintains the data in the Cartegraph OMS system, ensures pipes are scheduled appropriately, reviews and QA/QC cleaning and/or CCTV results, and updates collection system asset attribute information.

Wastewater Collection System Project Coordinator (CIP and/or SLIP) – Coordinates the various activities related to contractor work for capital improvement and/or sewer lateral inspection programs, and maintains the data in the Cartegraph OMS system. Updates collection system asset attribute information from contractor submittals.

Administrative Specialist – Supports SLIP Project Coordinator on scheduling SLIP cases and file management.

Wastewater Collection System Lead Operator – Assists the Wastewater Collection System Supervisor with scheduling daily field activities and training collection system field staff.

Wastewater Collection System Field Staff - A two- or three-person crew usually assigned to sewer main cleaning activities. Responsible for physically cleaning the pipes and performing work as directed using available tasks and data in Cartegraph OMS.

Wastewater Collection System Closed-Circuit Television Inspection Staff – A two-person crew responsible for operating, maintaining and using the CCTV equipment to perform CCTV inspections via PACP standards.

Wastewater Compliance Specialist – Performs FOG inspections and manages inspection schedules/data. Responsible for public education, monitoring FSE compliance, and program reporting.

Lift Station Maintenance Staff – Responsible for operation and maintenance of the City's wastewater lift stations.

Public Works Engineering Division – Responsible for design and construction of wastewater CIP projects.

Principal Engineer – Manages subordinate Engineering staff and responsible for delivery of wastewater CIP projects.



Supervising Engineer – Supervises Engineering staff and oversees design and construction of wastewater CIP projects.

Project Engineer – Assists the Supervising Engineer with design and construction of CIP projects.

GIS Coordinator – Information System Division staff member who manages spatial data.

GIS Technician – Information System Division staff member who maintains GIS data.

Cartegraph OMS Administrator – Information System Division staff member who administers Cartegraph OMS software.

City Staff responsible for developing, implementing, and maintaining specific elements of the City's SSMP, along with their job titles and contact information, are included in SSMP Volume II, Appendix C2. The Wastewater Collection System Staff Organization Chart is included in SSMP Volume II, Appendix C3.

SSO Reporting Chain of Communication

The SSO Reporting Chain of Communication follow the Organization Chart shown in SSMP Volume II, Appendix C3. The SSO Reporting process and responsibilities are described in detail in SSO Element 6 – Overflow Emergency Response Plan. Section 3 of SSMP Volume II, Appendix G1 details the process from SSO reporting process from the receipt of the call to notification through reporting. A high-level version of the SSO response procedure flow chart, Figure 3-1, outlines the entire procedure for response to a report of an overflow; from receipt of the call to notification of the appropriate outside agencies.

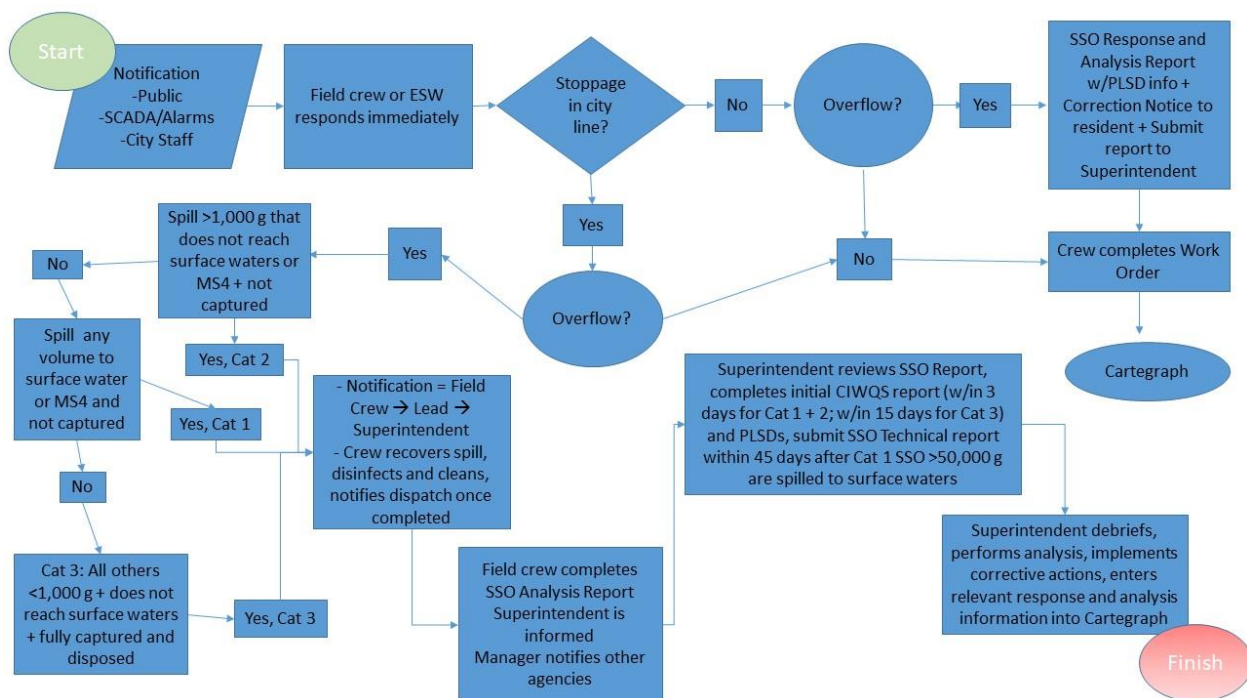


Figure 3-1: High-Level SSO Response Process



SSMP Element 3: Legal Authority

WDR Requirements

D13. (iii) Legal Authority: *Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:*

- a) *Prevent illicit discharges into its sanitary sewer system (examples may include infiltration/inflow, stormwater, chemical dumping, unauthorized debris and cut roots, etc.);*
- b) *Require that sewers and connections be properly designed and constructed;*
- c) *Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City;*
- d) *Limit the discharge of fats, oils and grease and other debris that may cause blockages; and*
- e) *Enforce violations of its sewer ordinances.*

Compliance

The City's legal authority with respect to its wastewater collection system is included in Title 14, 16, and 28 of the City of Santa Barbara Municipal Code. The Municipal Code is available on the City's Website at the following link: <https://www.santabarbaraca.gov/gov/cityhall/municode.asp>

To update the Municipal Code, the City brings proposed updates to the Ordinance Committee and the Technical Advisory Board of the Water Commission. If the proposed updates pass the Ordinance Committee, they are referred to City Council, where they will be reviewed in post and notification meetings. A 30-day comment period is held before implementation of the proposed updates. The Municipal Code is updated regularly, with the most recent update being implemented on August 4, 2020.

Relative Municipal Code Titles 14, 16 and 28 are listed below:

Title 14: Water and Sewers

14.33	Wastewater Fund
14.34	Sewer Definitions
14.36	General Provisions for Sewers
14.40	Sewer Service Charges
14.44	Sewer Connections and Use
14.48	Sewer Permits
14.52	Sewer Extensions

Title 16 Liquid and Industrial Waste Disposal

16.02	General Provisions
16.04	Regulations
16.08	Administration
16.10	Determinations and Charges
16.12	Enforcement
16.14	Abatement
16.15	Urban Pollution Controls Non-Point Source Discharge Restrictions



16.16	Severability
<u>Title 28</u>	<u>Zoning Ordinance</u>
28.87	General Provisions

WDR Item A: Prevent Illicit Discharges

The City's legal authority to prevent illicit discharges into its sanitary sewer system, such as infiltration/inflow, stormwater, chemical dumping, unauthorized debris, is specifically cited within the Municipal Code Sections in Table 3-1.

WDR Item B: Require Proper Design and Construction

The City's legal authority to require that sewers and connections be properly designed and constructed is specifically cited within the Municipal Code Sections in Table 3-1.

WDR Item C: Ensure Access

The City's legal authority to ensure access for maintenance, inspection or repairs for portions of the lateral owned or maintained by the City is specifically cited within the Municipal Code Sections in Table 3-1.

WDR Item D: Limit Discharge of FOG and Debris

The City's legal authority to limit the discharge of fats, oils and grease and other debris that may cause blockages is specifically cited within the Municipal Code Sections in Table 3-1.

WDR Item E: Enforce Violations

Although the City has the authority to enforce violations, the City's policy is to exhaust all other feasible options for code compliance before relying on a Municipal Code enforcement approach. The City's legal authority to enforce violations of its sewer ordinances is specifically cited within the Municipal Code Sections in Table 3-1.

Table 3-1: Summary of Legal Authority

Requirement	Reference in Santa Barbara Municipal Code	Meets WDR Requirements?	Last Updated
PREVENT ILLICIT DISCHARGES			
Prevent connections that carry roof or surface water to public sewers	Chapter 14.44.060	Yes	
Control infiltration and inflow (I/I) from private service laterals	Chapter 14.44.160	Yes	
Prevent illicit discharges into the wastewater collection system	Chapter 16.04.010	Yes	1/3/2020
Prohibit discharges into community sewers	Chapter 16.04.040	Yes	



Limit the discharge of fats, oils, and grease and other debris that may cause blockages	Chapter 16.04.100	Yes	1/3/2020
Users outside the City	Chapter 16.08.190	Yes	1989
PROPER DESIGN AND CONSTRUCTION			
Require that sewers and connection be properly designed and constructed	Chapter 14.36.030	Yes	1/3/2020
Require proper installation, testing, and inspection of new and rehabilitated sewers	14.36.040	Yes	1/3/2020
Requires work be constructed by a licensed contractor and meet approval of Public Works Director	14.36.060	Yes	
Requires house connection sewer deficiencies must be repaired within 10 days of notice	14.36.070	Yes	
Requires all plans conform to the standards of design set forth by the Public Works Department	14.36.080	Yes	
ACCESS TO LATERALS			
Clearly define City responsibility and policies	Chapter 14.44	Yes	1/3/2020
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the Agency	Chapter 14.46.030	Yes	1/3/2020
FOG SOURCE CONTROL			
General prohibitions on discharges into community sewer or POTW which causes pass through or interference	Chapter 16.04.010	Yes	
Prohibits discharge of waste from commercial garbage grinders into community sewers	Chapter 16.04.070	Yes	
Requirements to install grease removal devices (such as traps or interceptors)	Chapter 16.04.080	Yes	1/3/2020
Design standards for the grease removal devices	Chapter 16.04.080	Yes	1/3/2020



Wastewater must meet concentration-based limitations and pretreatment standards - dilution is prohibited	Chapter 16.04.120	Yes	
Maintenance requirements, BMP requirements, record keeping and reporting requirements for grease removal devices	Chapter 16.08.120	Yes	1/3/2020
Record keeping and reporting	Chapter 16.08.140	Yes	1/3/2020
Authority to inspect grease producing facilities	Chapter 16.08.150	Yes	1/3/2020
ENFORCEMENT			
Requirement for permit to construct or use public sewer, house connection sewer, or industrial liquid waste pre-treatment plant system	Chapter 14.48.010	Yes	
Enforce any violations of its sewer ordinances	Chapter 16.12	Yes	1/3/2020



SSMP Element 4: Operations and Maintenance Program

WDR Requirement

D.13. (iv) Operation and Maintenance Program: *The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:*

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

Table 4-1: Element 4 Crosswalk

Mapping and Asset Inventory	Vol II, Appendix E1
	Vol II, Appendix E2
Preventative Maintenance Program	Vol II, Appendix E3
	Vol II, Appendix E4
Rehabilitation and Replacement Program	Vol II, Appendix E6
	Sewer Lateral Inspection Program (SLIP)
Staff Training	On-the-job training
	CWEA certification
	NASSCO, PACP, MACP, and LACP certifications
Equipment and Replacement Part Inventories	Vol II, Appendix E7
	Vol II, Appendix E8



Compliance

Mapping and Asset Inventory

The City has a comprehensive ArcGIS Geographical Information System (GIS) that includes the information for its wastewater collection system assets including: gravity line segments, manholes and cleanouts, service laterals, food service establishments, and pumping facilities and pressure pipes (force mains). The GIS data is linked to the City's CMMS, Cartegraph OMS, so that data can be easily shared and displayed between the two systems. GIS maps are periodically uploaded to the City's CCTV inspection software program. The City is currently in the process of transitioning from POSM Pro software to ITPipes software. The transition is projected to be complete by January 2021. The storm water conveyance system is also available in City map books that are provided to field operation and maintenance staff.

The GIS is supported by the City's Information Services Division (ISD) in the Administrative Services Department. The data in the GIS is periodically updated as new facilities are added and existing facilities are rehabilitated or replaced. GIS updates and additions for collection system assets are performed according to the procedures specified in the Collection System Information Technology Governance Plan, provided in SSMP Volume II, Appendix E1. A map of the City's wastewater collection system is provided in SSMP Volume II, Appendix E2.

Preventative Maintenance Program

The City's wastewater collection system Cleaning and Inspection Program is located in SSMP Volume II, Appendix E3. The Cleaning and Inspection Program describes the overall cleaning plan, the logic for setting cleaning schedules, revisions to the cleaning schedules based on findings from the previous cleaning, and the general cleaning workflow. Three major aspects of the program are routine sewer cleaning, accelerated sewer cleaning, and identification of issues needing further investigation and/or repair (Maintenance Requests). Besides the City's sewer cleaning vehicles, other cleaning-related equipment used to support the Cleaning Program include the easement machine, CCTV Van, Acoustic Testing equipment, and the nozzle camera. The plan details the communication between WCS staff, teams, the Public, and other Departments. The document includes how the program's effectiveness is measured, as well as the quality assurance methods used to determine if the cleaning process is being executed effectively.

The City is in the process of developing methods to track the maintenance of critical easements for sewer cleaning purposes. To verify the cleaning needs of pipes with difficult access, the City inspects these pipes with a CCTV truck to determine if there are defects and what steps will take place after the information has been gathered and reviewed. This activity is categorized as an inspection event in Cartegraph OMS.

The City's wastewater collection system Lift Station and Force Main Preventative Maintenance Plan is located in SSMP Volume II, Appendix E4. The Lift Station and Force Main Preventative Maintenance Plan describes the overall preventative maintenance plan, the logic for setting preventative maintenance schedules, the general workflow, and the most recent Condition Assessment. The City hired a consultant in 2012 to perform a Lift Station and Force Main Condition Assessment (Lift Station Report). The Lift Station Report describes lift station and force main maintenance and inspection, and provides a condition assessment of the City's Lift Stations and Force Mains. The Lift Station Report has been subsequently updated by WCS staff to reflect work complete since the initial assessment and future projects.



Rehabilitation and Replacement Plan

The City's wastewater collection system CCTV pipe inspection and repair, rehabilitation and replacement program is described in SSMP Volume II, Appendix E6 and includes a two distinct components: 1) a risk-based, prioritized CCTV inspection plan (criticality ratings established for each pipe) that is the basis of the initial inspection program; and 2) a process for identifying a shortlist of potential pipes for repair, rehabilitation or replacement that utilizes industry-standard NASSCO PACP® standard defect codes and considers other known information such as repair and cleaning history. The Engineering Division uses information from CCTV inspections to design and construct capital improvement projects.

The current list of the City's line segments requiring repair, rehabilitation or replacement is available upon request.

In addition to the Rehabilitation and Replacement Plan for the City's Public Sewer System, the City also implemented a Sewer Lateral Inspection Program (SLIP) that addresses private sewer laterals. This program has the legal authority to require owners of residential, commercial, and condominium properties in the City of Santa Barbara to have their private lateral periodically inspected (every 3 years for residential, every 10 years for commercial/condominium properties, or immediately if there is a suspected defect or overflow) and to require mandatory repairs to bring any defective lateral into compliance with the requirements of the Santa Barbara Municipal Code. More information can be found here: <https://www.santabarbaraca.gov/gov/depts/pw/resources/slip/default.asp>.

Staff Training

The City uses a combination of in-house classes, on-the-job training, conferences, seminars, and other training opportunities to train its wastewater collection system staff. Training is tracked via sign in sheets and training logs.

The City requires its wastewater collection system employees to be certified in Collection System Maintenance by the California Water Environment Association. Certified employees are required to demonstrate that they have participated in twelve hours of training every two years in order to renew their certificates. Employee certifications and expiration dates are tracked in Cartegraph OMS.

City staff (and contractors) involved with CCTV investigations of sewer lines have completed NASSCO, PACP, MACP, and LACP certifications. PACP is the North American Standard for pipeline defect identification and assessment, PACP provides standardization and consistency to the methods in which pipeline conditions are identified, evaluated and managed. MACP and LACP refer to the manhole and lateral elements of the program.

Equipment and Replacement Part Inventories

The City's wastewater collection system equipment list is included in SSMP Volume II, Appendix E7. The Critical Replacement Parts List and Inventory Procedure is included in SSMP Volume II, Appendix E8



SSMP Element 5: Design and Performance Provisions

WDR Requirements

D.13. (v) Design and Performance Provisions:

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

Table 5-1: Element 5 Crosswalk

Design and Construction Standards	Vol II, Appendix F1
Inspection and Testing Standards	Vol II, Appendix F2

Compliance

Design and Construction Standards

The City's design standards are used by the Public Works Engineering Division for the design of new and rehabilitated sewer system facilities. The standards are communicated to design engineers and developers at the start of a project when outside designers are employed.

The City's construction standards are addressed in its specifications for sewer construction projects, project-specific amendments to the specifications, and Standard Specifications for Public Works Construction (also known as the Greenbook).

Some sewer facilities may require telemetry equipment to be incorporated into the design of the facilities. The Wastewater staff provides specific information for incorporating the telemetry communication necessary for sewer lift stations, and other facilities as appropriate.

City Design and Performance Provisions are provided in SSMP Volume II, Appendix F1.

Inspection and Testing Standards

The City's Wastewater Collection System Standards for Construction, Inspection and Testing are The Standard Specifications for Public Works Construction, 2018 Edition, as modified by the City's Standard Specifications. The City's Construction Standard Details are provided in SSMP Volume II, Appendix F2.



SSMP Element 6: Overflow Emergency Response Plan

WDR Requirement

D13. (viii) Overflow Emergency Response Plan: *The Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, the plan must include the following measures:*

- 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 (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;*
- 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.*
- 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.*

Table 6-1: Element 6 Crosswalk

Proper Notification Procedures to First Responders and Regulatory Agencies	Vol II, Appendices G1, G2, and G3
Response Program	
Proper Notification Procedures to Regulatory Agencies and Affected Entities	
Staff Training and Awareness	
Emergency Operations	
Containment and Monitoring Program	

Compliance

The City's Overflow Emergency Response Plan is a document that describes the process and procedures that the City follows to respond to an SSO event, including public and regulatory notification, dispatching and initial response, remedial action, recovery and cleanup, water quality sampling and testing, documentation and investigation, reporting, and training.

In response to the need to significantly reduce the number of maintenance related SSOs and system stoppages, the City has implemented many improvements in its proactive cleaning program. Key elements of the City's proactive cleaning program include:



- Refocusing on main cleaning objectives;
- Altering cleaning rates to produce more effective results;
- Improving and standardizing the overall cleaning procedures;
- Better performance monitoring activities (e.g. using global positioning system (GPS) units to track location of vehicles and duration on-site) and improved documentation of cleaning activities and findings;
- Better planning strategies; and
- Augmentation by contract cleaning to increase cleaning rates.

These elements have reduced the number of SSOs encountered in the City since 2009. The City desires to continue to improve performance and effectiveness by implementing a system-wide cleaning program that aligns individual pipe cleaning frequencies with previous cleaning results. This approach has many benefits:

- The program continually adjusts to focus on problem areas while not over-cleaning less problematic pipes;
- Every pipe will be cleaned at least once in a 5 year period; and
- Resources will be refocused from pipe cleaning to address other maintenance activities such as repairs, inspections, and rehabilitation.

Responsibility for maintaining the wastewater collection system is delegated to the Water Resources Division of the Public Works Department as specified in Title 14 and 16 of the Santa Barbara Municipal Code. Operations and Maintenance (O&M) activities, including response and remedial actions associated with reports of SSOs, is provided by the Wastewater Collection Section under the Water Resources Division.

A copy of this document is provided in SSMP Volume II, Appendix G1. Copies of the Lift Station and Waterfront Department SSO Response Plans are provided in SSMP Volume II, Appendix G2 and G3, respectively.



SSMP Element 7: Source Control Program

WDR Requirements

D.13 (vii) Fats, Oils, and Grease (FOG) Control Program: *The Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:*

- 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 sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area.*
- 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 traps or interceptors), design standards for the removal devices, maintenance requirements, best management practice (BMP) requirements, record keeping and reporting requirements.*
- e) *Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance.*
- f) *An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section.*
- g) *Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (6) above.*

Table 7-1: Element 7 Crosswalk

Public Education and Outreach, FOG Disposal Plan and Schedule, Legal Authority, Grease Removal Device Standards, Inspection and Enforcement Authority, Maintenance Schedule, Source Control Measures	Vol II, Appendix H1
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Compliance

The City's FOG Program, presented in SSMP Volume II, Appendix H1, addresses public education and outreach, the legal authority to prohibit FOG discharges, requirements for grease removal devices, authority to inspect FOG producing facilities, identification of staff responsible for inspections, identification of sewer pipes subject to FOG blockages, and development of source control measures. The City also has a FOG receiving station that accepts FOG from a local grease hauler for disposal. In the event of a spill from a residential FOG blockage, the City will follow up with physical door hangers or paper postings. The City will begin to use the online notification application called NextDoor to notify the public



regarding proper disposal of FOG. A FOG blockage caused by an FSE would trigger an inspection by the Wastewater Compliance Specialist and action by the FSE operator.



SSMP Element 8: System Evaluation and Capacity Assurance Plan

WDR Requirement

D.13. (viii) System Evaluation and Capacity Assurance Plan: *The Enrollee shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:*

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

Table 8-1: Element 8 Crosswalk

Evaluation, Design Criteria, and Capacity Enhancements	Vol II, Appendix I1
	Vol II, Appendix E5
	Wastewater Collection System Master Plan (WCSMP) – Sections 4.2, 6, and 7.2.
Capital Improvement Plan and Schedule	Vol II, Appendix I2

Compliance

Evaluation, Design Criteria and Capacity Enhancements

In December 2014, the City completed a Wastewater Collection System Master Plan. The plan was developed to identify and mitigate existing and future capacity deficiencies, and includes a capacity evaluation, system performance and design criteria, and proposed capacity enhancements. This Master Plan is provided in SSMP Volume II, Appendix I1.

A report describing the City’s wastewater collection system flow monitoring program is provided in SSMP Volume II, Appendix E5.

Capital Improvement Plan and Schedule

The City prepares an annual list of capital improvement projects that includes projects to address known collection system capacity issues and defective pipes. Public Works Engineering Staff manage design



consultants and construction contractors for wastewater CIP projects. Alternatives are analyzed and schedules are established during the design process. A copy of the City's current Capital Improvement Plan is provided in SSMP Volume II, Appendix I2.

Table 8-2 is an excerpt from Table 13 of the Wastewater Collection System Master Plan, SSMP Volume II, Appendix I1, which identifies nine pipelines within the City to address existing capacity constraints. Both Nopal Street and Quarantina Street are part of the Santa Barbara Junior High Capacity Improvement Project which is scheduled to be completed in 2023 at the earliest.

Table 8-2: Proposed Pipeline Improvements

Phase	Area	Description	Length (ft)	Diameter (in)	Planning-Level Estimated Project Cost
1	Castillo Street	This project would divert flow from the existing trunk sewer on the west side of Highway 101. The new pipeline would follow Castillo Street from Pedregosa Street to Haley Street, where it would reconnect to the existing system.	7,600	18	\$3,201,000
1	Gutierrez Street	An existing inverted siphon with two 8-inch pipes carries flow under Mission Creek. If the Castillo Street project described above were constructed, this siphon would not have capacity for the additional flow.	250	18	\$105,000
1	State Street	This project would provide additional capacity in State Street in front of La Cumbre Plaza and would address the restriction in the current siphon under Arroyo Burro	1,400	12	\$541,000
1	Milpas Street	This project would provide relief for an existing 6-inch pipe between Alphonse Street and Ortega Street	260	8	\$82,000
1	Quarantina Street	This project would start near the intersection of Ortega Street and the extension of Nopal Street. It would provide capacity to carry flow southwest in Ortega Street and	1,040	12	\$402,000



		then southeast in Quarantina Street.			
1	Nopal Street	At Nopal Street and De La Guerra Street, a short reach of 6-inch pipe is a hydraulic bottleneck; this project would provide a parallel pipe.	100	10	\$35,000
2	Olive Street	This project would provide relief for an existing 8-inch pipe in Olive Street from Cota Street to Haley Street. The existing pipe is a hydraulic bottleneck.	550	8	\$174,000
2	Ortega Street	Between Laguna Street and Garden Street, an existing 6-inch pipe is a hydraulic bottleneck; this project would provide a parallel pipe.	340	8	\$107,000
3	Various	This placeholder is for all Phase 3 segments; not all are expected to require a relief project.	33,000	Varies	\$13,000,000



SSMP Element 9: Monitoring, Measurement and Program Modifications

WDR Requirement

D.13. (ix) Monitoring, Measurement and Program Modifications: *The Enrollee 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 preventative maintenance program.*
- d) *Update program elements, as appropriate, based on monitoring or performance evaluations.*
- e) *Identify and illustrate SSO trends, including: frequency, location, and volume.*

Table 9-1: Element 9 Crosswalk

Monitoring and Measurement	KPIs
	Vol II, Appendix J1
Program Modifications	KPIs

Compliance

Monitoring and Measurement

The City currently uses a number of key performance indicators (KPIs) and the SSMP elements to measure the performance of its wastewater collection system and the effectiveness of established programs. Examples of KPIs include:

- Total number of SSOs
- Total number of stoppages (blockages)
- Number of SSOs related to each cause (roots, FOG, pump station failure, capacity limitations, and other)
- Portion of sewage contained compared to total volume spilled
- Annual production for each maintenance activity compared to goals
- Total number of gravity pipe miles cleaned;
- Percentage of system cleaned annually; and
- Number of restaurants inspected for compliance with grease trap requirements.

The City maintains and tracks this information for evaluation and analysis. Reports are prepared at least quarterly and are reviewed by the management team. The KPIs are compared to established goals so that program modifications can be made if needed.

Additionally, the City prepares Annual Reports, which evaluates the effectiveness of the program, examines trends in SSOs, and identifies changes to the program with the goal to decrease the number and



frequency of SSOs. The current Annual Report and is located in Volume II, Appendix J1 . Prior year reports are available upon request.

Program Modifications

The City evaluates the performance of its wastewater collection system at least annually using the performance measures identified above. The City initiates changes to this SSMP and its related programs based on the results of the evaluation.



SSMP Element 10: SSMP Program Audits

WDR Requirements

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

Compliance

The City performs internal SSMP audits every two years. Audits are conducted by a team consisting of City Staff selected from the Public Works Department. The audit team may have members from other areas of the City, outside agencies, consultants, or contractors. The scope of the audit covers each of the SSMP sections.

Table 10-1 below identifies SSMP Audits and updates. The most recent audit report is located in Volume II, Appendix K1. Audit reports from prior years are available on request.

Table 10-1. SSMP Audits and Updates

Date	Comment	Author
August 2008	Adoption of SSMP by City Council	
August 2012	2012 SSMP Update	Brown & Caldwell
May 2013	2013 Audit	Brown & Caldwell
June 2013	2013 SSMP Update	Brown & Caldwell
June 2013	Recertification by City Council	
October 2015	2015 Audit	Brown & Caldwell
June 2018	2018 Audit and Update	Brown & Caldwell
January 2019	Recertification by City Council	
June 2020	2020 Audit and Update	HDR

In 2012, the City made major updates to its Wastewater Collection System work plan documents and postponed the 2012 SSMP audit to 2013.

In 2017, the City spent several months performing a detailed review of its business practices in conjunction with its Computerized Maintenance Management System (CMMS) upgrade. As a result, changes were made to the City's business practices as part of the software upgrade, which was launched in January 2018. In addition, an analysis of the trends of SSOs over the past six years was performed to look at the



effectiveness of the City's Operation and Maintenance Programs. Due to these two work efforts, the City postponed the 2017 SSMP audit to 2018 to incorporate the changes into the SSMP

City Council recertified the last update to the City's SSMP on January 29, 2019.



SSMP Element 11: Communication Plan

WDR Requirement

D.13 (xi) Communication Program: *The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.*

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

Compliance

The City's communication plan with other agencies and the public is provided in the following sections.

Regional Water Quality Control Board (RWQCB)

The City regularly communicates with the RWQCB as issues related to its wastewater collection system arise.

Santa Barbara County Health Department

The City notifies the Santa Barbara County Health Department when SSO events occur that meet the following criteria:

- SSOs over 1,000 gallons;
- SSOs that enter waters of the State; and
- SSOs that occur where public contact is likely.

Mission Canyon Sewer District (County Service Area 12)

The Mission Canyon sewer district discharges to the City but is not maintained by the City of Santa Barbara. The Santa Barbara County Laguna County Sanitation District has been in charge of operations and maintenance of the Mission Canyon sewer district since July 1, 2015, and maintains an on-call contract with local sewer contractor to respond to emergencies. The City has regular and ongoing communications with the County to exchange information on the performance of the collection system.

Montecito Collection System

There is a small section of the Montecito Collection System where there is a flow exchange between the City of Santa Barbara and the City of Montecito. There are about forty homes in Montecito that discharge to Santa Barbara's collection system and about twenty Santa Barbara homes that discharge to the Montecito system. Montecito Sanitary District maintains their own infrastructure and communication is on an ad-hoc basis as situations arise.

City Website

To keep the general public informed on SSMP activities and performance, the City maintains a website at the following location:

<https://www.santabarbaraca.gov/gov/depts/pw/resources/wastewater/collectsys/default.asp>

This website provides general information about City wastewater collection system activities and is also used to communicate the following City wastewater collection systems programs:



- Sewer Lateral Inspection Program (SLIP)
- FOG Control Program
- Other Programs to Prevent Spills

Following the completion of SSMP updates, the most current document is posted to this website.