

FINAL

Sewer System Management Plan

City of Santa Barbara
Santa Barbara, California

June 25, 2013

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City Santa Barbara, Santa Barbara, California
June 25, 2013



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Introduction

Purpose

Santa Barbara's wastewater collection system management practices must comply with the following regulatory mandates:

- National Pollutant Discharge Elimination System (NPDES) Permit CA0048143 issued by the Central Coast Regional Water Quality Control Board on May 13, 2010.
- California State Water Resources Control Board adopted Statewide General Waste Discharge Requirements for Wastewater Collection System Agencies (GWDR) on May 2, 2006.

The purpose of this Sewer System Management Plan (SSMP) is to comply with both the requirements of the City's NPDES Permit and the GWDR.

Document Structure

This document describes the City's SSMP. The document includes the following sections:

Section 1 – Goals: 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.

Section 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.

Section 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.

Section 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.

Section 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.

Section 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.

Section 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.

Section 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.

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

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

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

Sewer System Facilities

The City operates and maintains approximately 254 miles of collection system gravity sewers serving a population of approximately 95,000. The gravity sewer sizes range from 4 to 42 inches in diameter. The predominant pipe material is vitrified clay, accounting for 78 percent of the collection system's total length. Polyvinyl Chloride (PVC) makes up the majority of the remaining pipe (20 percent total). Almost 90 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 7,000 access structures (manholes and clean outs) and approximately 2 miles of force main. The service area is shown on Figure I-1. The City's lift stations and force mains are shown in Figure I-2. Collection system gravity pipes and lift stations/force mains are listed in Tables I-1 and I-2, respectively.

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 by the Santa Barbara County Public Works Department and is operated and maintained by the City under a maintenance contract. The Mission Canyon Sewer District (County Service Area 12) wastewater collection system 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.

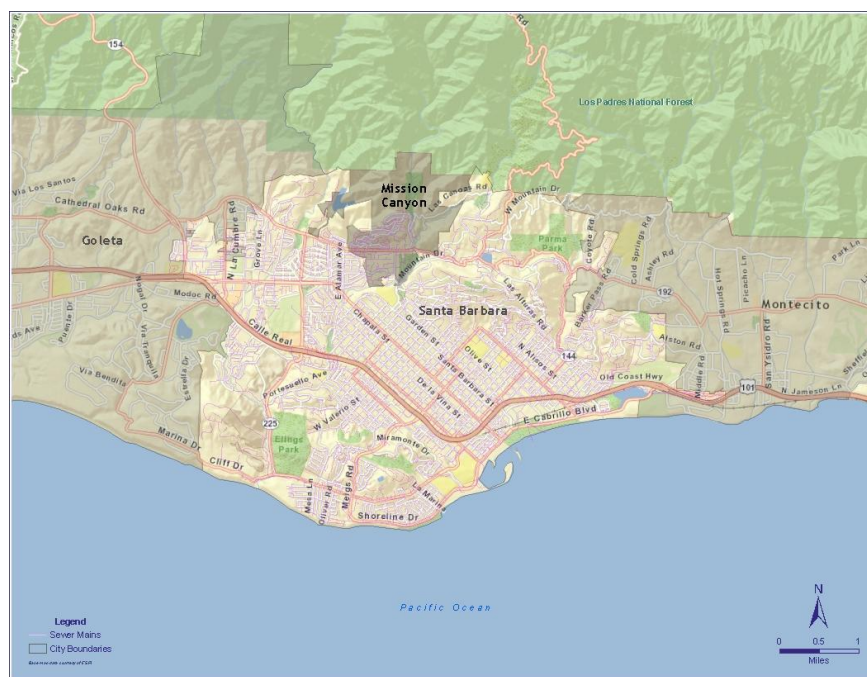


Figure I-1. City of Santa Barbara Wastewater Collection System

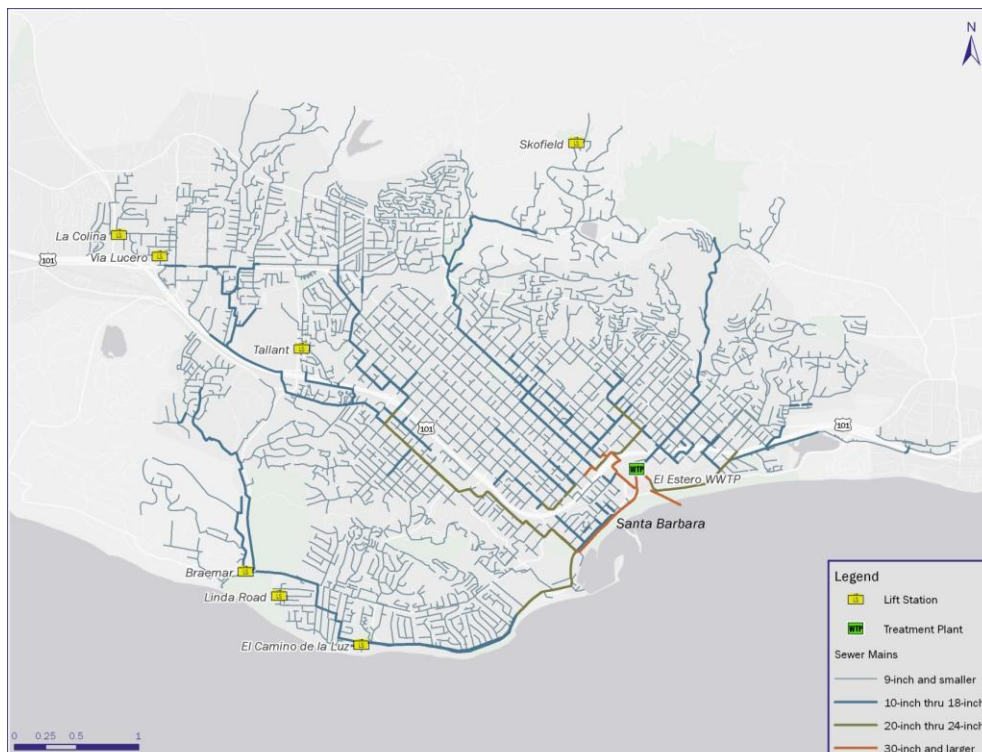


Figure I-2. City of Santa Barbara Wastewater Collection System Lift Stations and Force Mains

Table I-1. Santa Barbara Collection System Gravity Pipes							
Diameter (Inches)	Vitrified Clay	Polyvinyl Chloride ^a	Cast Iron	Other	Total Footage	Total Mileage	Percentage
4	-	123	52	-	175	0.03	0.0%
5	102	-	-	293	395	0.07	0.0%
6	424,765	75,800	1,288	4,285	506,140	95.86	37.7%
8	481,574	153,222	3,682	4,037	642,516	121.69	47.9%
10	30,320	10,748	345	548	41,960	7.95	3.1%
12	27,916	8,185	115	2,336	38,551	7.30	2.9%
14	960	1,823	-	-	2,783	0.53	0.2%
15	27,214	3,325	116	1,171	31,826	6.03	2.4%
16	3,672	4,011	95	-	7,778	1.47	0.6%
18	28,581	3,318	-	-	31,900	6.04	2.4%
20	2,357	566	-	-	2,923	0.55	0.2%
21	8,221	3,478	-	-	11,699	2.22	0.9%
24	6,315	4,503	-	341	11,159	2.11	0.8%
30	-	509	-	-	509	0.10	0.0%
33	3,000	1,425	-	1,010	5,435	1.03	0.4%
36	199	281	-	193	673	0.13	0.1%
42	-	1,809	-	2,602	4,410	0.84	0.3%

Table I-1. Santa Barbara Collection System Gravity Pipes

Diameter (Inches)	Vitrified Clay	Polyvinyl Chloride ^a	Cast Iron	Other	Total Footage	Total Mileage	Percentage
Total Footage	1,045,198	273,126	5,693	16,816	1,340,833	253.95	100%
Total Mileage	197.95	51.73	1.08	3.18	253.95	253.95	
Percentage	78%	20%	0%	1%	100%		

^aIncludes either Polyvinyl Chloride (PVC) or other "lined" pipe. In previous years, City staff labeled rehabilitated pipe as PVC in the GIS database.

Table I-2. Lift Station Inventory Information

Lift Station Name	Year Constructed	Capacity (gpm)	Force Main Diameter (in)	Force Main Material	Force Main Length (ft)	Description
Braemar	1962	1,000	10	PVC	3,100	Wet well/dry well lift station, new force main in 1994
El Camino De La Luz	1975	150	4	DIP	98	Wet well/dry well station with dry well in a "can"
La Colina	1957	400	8	DIP	3,175	Wet well/dry well lift station
Linda Road	2002	150	4	HDPE	555	Submersible lift station with chopper pumps
Skofield	1967	250	6	CIP	471	Wet well/dry well station with dry well in a "can"
Tallant Road	1999	100	2	HDPE	190	Submersible lift station
Via Lucero	1962	400	6	CIP	182	Wet well/dry well station with dry well in a "can"

Certification

The City's SSMP and program to implement the SSMP must be certified to be in compliance with the requirements set forth in the eleven program elements and presented to the City's governing board for approval at a public meeting.

The SSMP must be updated every five years, and must include any significant program changes. Recertification is required by the governing board when significant updates are made to the SSMP.

Schedule

The 2006 GWDR included a schedule for SSMP development and certification. The City's SSMP was completed in August 2008. An update to the City's SSMP must be completed by August 2013.

Definitions and Acronyms

The following definitions and acronyms are used in this report and in the Appendix documents:

ArcGIS - A type of geographic information system (GIS) created by Environmental Systems Research Institute (ESRI) that runs on a computer.

BMP - Best Management Practice.

Cal EMA - California Emergency Management Agency.

Capacity Assurance Plan - A Sewer System Management Plan (SSMP) requirement that the City 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.

Cartegraph - Cartegraph refers to the computerized work order management system that is used by the City to manage its collection system maintenance and repair activities.

CIP – Cast Iron Pipe.

CIP – Capital Improvement Plan.

Category One Overflow - A spill greater than 1000 gallons in volume or one that make it to a water body of the State.

Category Two Overflow - Any other spill that does not meet the Category One criteria.

CCTV - Closed-Circuit Television used for producing video footage of the inside of wastewater pipe.

Cleaning - The process of removing any debris, roots, grease or other potential blockages that build up in the wastewater system.

Cleaning Target Date - A designated date that a pipe is scheduled for cleaning.

Cleaning Target Date Range - An acceptable date range around the cleaning target date for scheduling pipe cleaning.

Cleanout - A capped pipe that provides access to a collection system pipe.

CMMS - Computerized maintenance management system used to track and schedule maintenance activities.

Compliance Schedule - The time period allowed by the City for the User to comply with NOV conditions and requirements.

CIWQS - California Integrated Water Quality System.

Dispatch - Dispatch may refer to either Control 10 (working hours) or Control 14 (after hours).

DIP – Ductile Iron.

Easement - An area of property owned by another party that grants the City the right to install and maintain collection system facilities.

Enrollee – The organization responsible for fulfilling the SSMP requirements.

ESRI - Environmental Systems Research Institute. A company that makes GIS software.

ESW - ESW refers to the City's On Call Emergency Service Worker.

Fiscal Year - The planning and operating annual calendar for the City starting July 1st.

FOG - Fats, oils, and grease that can accumulate in a sewer pipe. A common source of FOG is food service establishments.

Force Main - A pressurized wastewater pipe that transports sewage.

FSE - Food service establishment.

FTE - Full-time equivalent. A way to express the time of a full-time worker.

GEODATAconnect - A module in Cartegraph that enables integration with ArcGIS.

GCD - Grease control device. Typically a grease trap or grease interceptor which limits the amount of FOG entering the collection system from a FSE.

GIS - Geographic Information System. A computerized mapping and spatial analysis application.

GPS - Global positioning system. A satellite-based navigation system used to locate or track the position of an object over time.

Gravity Collection System - A hydraulic system that carries wastewater to a treatment plant or other authorized point of discharge that uses gravity as the means of conveyance.

Grease Interceptor/Trap - A grease control device designed to separate and retain most fats, oils, greases, and solids, excluding sanitary wastes, before entering the sewerage system. Smaller versions of Grease Interceptors are commonly known as Grease Traps.

GWDR - General Waste Discharge Requirements.

HDPE - High Density Polyethylene Pipe.

Inverted Siphon - A depressed sewer pipe that allows wastewater to pass under an obstruction such as a river.

ITG - Information Technology Governance.

KPI - Key Performance Indicator. A metric used to evaluate the effectiveness of a wastewater collection system. Common KPI metrics include SSOs, stoppages, etc.

Lateral - An underground wastewater pipe that connects a residence or business to the City wastewater system. Lateral cleaning and maintenance is the responsibility of the homeowner or business owner.

Lift Station - A facility that pumps wastewater from a low spot to a point of higher elevation in the gravity collection system.

Manhole - The top opening to an underground maintenance vault that allows access to the collection system pipes. Used as an access point for installing, operating, and maintaining flow meters and for cleaning and inspecting sewer pipe.

MRP - Monitoring and Reporting Program.

MS4 - Municipal Separate Storm Sewer System.

NAASCO - National Association of Sewer Service Companies.

NPDES - National Pollutant Discharge Elimination System Permit.

NOV - Notice of Violation. Following the fourth NOV, the case is referred to the City Attorney and a fine can be levied.

OERP - Overflow Emergency Response Plan.

OES - Governor's Office of Emergency Services.

O&M - Operations and Maintenance.

P3 Report - Paradise Performance Plan. A document used to measure the City's progress against measurable goals.

PACP - Pipeline Assessment and Certification Program.

PLSD - Private Lateral Sewage Discharge.

POSM - Pipeline Observation System Management. A software system used to create, analyze, and manage CCTV inspection data.

Primary responder - The field crew or the On Call personnel that are the City's initial response to an SSO or other sewer system event.

PSL - Private sewer lateral.

PVC – Polyvinyl Chloride.

Quality Assurance - A process used to verify or determine whether products or services meet or exceed customer expectations.

Quality Control - A process used to ensure a certain level of quality in a product or service.

Property Damage Overflow – Sewer overflow or backup that contaminates a property owner’s premises.

Rehabilitation – To perform repairs in order to bring an asset or pipe back to like-new condition.

RDI/I – Rainfall dependent infiltration and inflow. Stormwater or groundwater that enters the collection system through defects in the pipes and manholes or through direct connections.

RWQCB – Regional Water Control Board: Central Coast Regional Water Quality Control Board.

SCADA – Supervisory Control and Data Acquisition system that monitors lift station performance.

Sensitive Area – Areas where an SSO could result in a fish kill or pose an imminent or substantial danger to human health.

Sewer system – Sewer system refers to the sanitary sewer facilities owned and operated by the City of Santa Barbara.

SLIP – Sewer Lateral Inspection Program. A program requiring owners of residential, condominium or commercial properties to have their private laterals inspected at periodic intervals (every three years for residential properties and every ten years for condominium and commercial properties) in order to maintain their laterals in good working order or to complete necessary repairs to bring them back into compliance with the requirements of the Santa Barbara Municipal Code.

SSMP - Sewer System Management Plan. Document required by the State Water Resources Control Board General Waste Discharge Requirements.

SSO - Sanitary Sewer Overflow. SSO refers to the discharge of untreated or partially treated sewage at any point upstream of the treatment plant.

Stoppage - A blockage that prevents wastewater from flowing but does not produce an overflow.

SWRCB - State Water Resources Control Board.

Variance – A process that allows a FSE to bypass requirements for a GCD if they are able to meet certain conditions.

Wastewater Collection System (WCS) - Sanitary sewer collection and transport facilities owned and operated by the City of Santa Barbara.

Wastewater Treatment Plant (WWTP) – Facility owned and operated by the City of Santa Barbara that treats the wastewater transported through the collection system.

Water body – Any stream, creek, river, pond, impoundment, lagoon, wetland, bay, or the Pacific Ocean.

Water of the State – Any water, surface or underground, including saline waters, within the boundaries of California. In case of a sewage spill, storm drains are considered to be waters of the State unless the sewage is completely contained and returned to the sewer system.

Work Order - A document that provides important details about a maintenance or repair activity that must be performed.

Revision History

Version	Date	Comment	Author
1	8/15/2012	2012 draft update	Brown and Caldwell
2	8/29/2012	2012 final update	Brown and Caldwell
3	6/6/2013	2013 final update	Brown and Caldwell
4	6/17/2013	2013 final update	City of Santa Barbara

Section 1

Element 1: Goals

1.1 Regulatory Requirement

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

1.2 Appendix for Element 1: Goals

There is no appendix associated with Element 1.

1.3 Goals

The Water Resources Division's wastewater management 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's Council as part of the annual Performance Measures and Objectives included in the City's budget.

The City's goals are:

1. To properly manage, operate, and maintain all portions of the City's wastewater collection system.
2. To provide adequate capacity to convey the peak wastewater flows.
3. To minimize the frequency of SSOs.
4. To mitigate the impacts that are associated with any SSO that may occur.
5. To meet all applicable regulatory notification and reporting requirements.

This SSMP supports the City's existing Operations & 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.

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Section 2

Element 2: Organization

2.1 Regulatory Requirement

The SSMP must identify:

1. The name of the responsible or authorized representative.
2. The names and contact numbers for management, administrative, and maintenance personnel responsible for implementing specific measures of the SSMP including lines of authority.
3. The chain of command for reporting SSOs.

2.2 Appendix for Element 2: Organization

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

1. Appendix 2-1: Wastewater Collection System Staff Contact Information
2. Appendix 2-2: Wastewater Collection System Staff Organization Chart

2.3 Authorized Representative

The City's 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 OES; and authorized to certify electronic spill reports submitted to the SWRCB.

Wastewater Collection System Leads are authorized to submit verbal, electronic, and written spill reports to the SWRCB, RWQCB, Santa Barbara County Health Department, and OES. Staff are authorized to act as the City's Authorized Representative in the Wastewater Collection System Superintendent's absence.

2.4 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 and responsibilities of Wastewater Collection System staff that carry out the SSMP activities are:

- **Wastewater System Manager** – Overall responsibility for managing the Wastewater Section staff and the wastewater treatment and collection facilities. Manages the program's effectiveness by reviewing program metrics.
- **Wastewater Collection System Superintendent** – Directly responsible for managing the operations and maintenance activities and directing wastewater collection system resources. Manages the programs effectiveness by reviewing program metrics; and coordination with Wastewater System Manager. Utilizes reports, maps, and work orders to manage the program.

- **Wastewater System Planner/Scheduler** – Maintains the data in the Cartegraph computerized maintenance management system (CMMS), generates the weekly cleaning schedules, enters cleaning results, and updates collection system asset attribute information.
- **Administrative Specialist** – Supports the Planner/Scheduler on scheduling and data entry tasks.
- **Wastewater Collection System Lead** – Manages the day-to-day activities of the wastewater collection crews.
- **Wastewater Collection System Field Crew**- A two- or three-person crew usually assigned to sewer main cleaning or repair activities. Responsible for physically cleaning the pipes and performs work as directed using Cartegraph work orders.
- **Wastewater Collection System Closed-Circuit Television Inspection Crew** – Responsible for operating, maintaining and using the CCTV equipment, performing CCTV inspections, and reviewing the CCTV video to identify defects and issues in the collection system.
- **Public Works Engineering Division** – Responsible for the system-wide CCTV inspection program and developing annual repair or rehabilitation projects based on the CCTV inspection results. Also responsible for the flow monitoring program administration, including coordination with WCS staff for monitor installations, reviewing data and reports submitted by the contractor and developing capital improvement projects associated with RDI/I reduction projects.
- **Principal Engineer** – Manages the Public Works Engineering staff and produces the annual CIP.
- **Supervising Engineer** – Manages individual system-wide CCTV inspection efforts.
- **Project Engineer** – Assists the Principal Engineer with development of the annual CIP.
- **GIS Coordinator** – Information System Division staff member who manages spatial data associated with the wastewater collection system.
- **GIS Technician** – Maintains GIS data for various groups at the City of Santa Barbara.
- **FOG Inspector** – Performs FOG inspections and manages inspection schedules/data; Responsible for public education, monitoring restaurant compliance, and program reporting.

City Staff responsible for developing, implementing, and maintaining specific elements of the City's SSMP, along with their job titles and contact information, are shown in Appendix 2-1.

The Wastewater Collection System Staff Organization Chart is shown in Appendix 2-2.

2.5 SSO Reporting Chain of Communication

The SSO Reporting Chain of Command follows the Organization Chart shown in Appendix 2-2. The SSO Reporting process and responsibilities are described in detail in Section 6 - Overflow Emergency Response Plan.

Section 3

Element 3: Legal Authority

3.1 Regulatory Requirement

The Enrollee must demonstrate, through sanitary sewer system ordinances, service agreements, or other legally binding procedures, that it possesses the legal authority to:

1. Prevent illicit discharges to its sewer system (including infiltration/inflow (RDI/I), stormwater, chemicals, unauthorized debris, etc.).
2. Require that sewers and connections be properly designed and constructed.
3. Ensure access for maintenance, inspection and repair for portions of the lateral owned or maintained by the City.
4. Limit the discharge of fats, oils and grease (FOG) and other debris that may cause blockages.
5. Enforce violations of its sewer ordinances.

3.2 Appendix for Element 3: Legal Authority

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

1. Appendix 3-1: City of Santa Barbara Municipal Code – Title 14.
2. Appendix 3-2: City of Santa Barbara Municipal Code – Title 16.
3. Appendix 3-3: National Pretreatment Program 40CFR 403.8(f)(1)

3.3 Legal Authority

The City's legal authority with respect to its wastewater collection system is included in Title 14 and 16 of the City of Santa Barbara Municipal Code. Specific codes with respect to the Element 3 requirements are listed in the tables below and in Appendix 3-1, 3-2 and 3-3.

1. Ability to control infiltration and inflow from connections, including satellite systems.

Section	Section Title
14.44.035	Connection to Private System-Written Agreement Required
14.44.060	Connections Letting Roof, Etc., Water Into Sewers
14.44.160	Maintenance of Private Systems, Etc.
14.44.170	Inspections - Access to Premises
16.04.020	Prohibitions on Storm Drainage and Ground Water
16.04.030 A	Prohibition on Unpolluted Water
16.08.075	Users Outside City

2. Ability to require that sewers and connections are properly designed and constructed.

Section	Section Title
14.36.030	Conformance of Facilities to Title - New Facilities
14.36.040	Conformance - Remodeling
14.36.060	Who May Do Work Under Title - Work to be Subject to Inspection and Approval
14.36.070	Notice to Remedy House Connection Sewer Deficiency
14.36.080	Standards for Plans - Approval

3. Ability to ensure proper installation, testing, and inspection of new and rehabilitated sewers (such as new or rehabilitated collector sewers and new or rehabilitated service laterals).

Section	Section Title
14.36.030	Conformance of Facilities to Title - New Facilities
14.36.040	Conformance - Remodeling
14.36.080	Standards for Plans - Approval
14.48.010	Required Generally
14.48.020	Connection Permit - Application

4. Private Sewer Lateral Inspection Program – Administrative Guidelines. This section explains when inspection is required; outlines the administrative process used to notify property owner of inspection requirement; and details the timeline for compliance. Ability to ensure proper installation, testing, and inspection of new and rehabilitated service laterals.

Section	Section Title
14.46.040.A	Health And Safety Inspections
14.46.040.B	Events Requiring An Inspection of Residential Sewer Laterals
14.36.040.C	Inspection of Commercial Properties, Condominiums And Other Common Interest Developments
14.48.0040.D	Exemptions-Sewer Lateral Inspections Will Not Be Required Under the Following Conditions
14.46.050	Qualified Inspection Companies
28.87.220	Zoning Information Report Preparation

5. Ability to limit fats, oils, and grease and other debris that may cause blockages in the collection system.

Section	Section Title
16.04.010	General Prohibitions on Discharges
16.04.050 A	Limitations on the Use of Commercial Garbage Grinders
16.04.060	Requirement for Interceptors
16.04.100 B	Local Limitations on Wastewater Strength
16.14.030	Damage to Facilities

6. Ability to implement the National Pretreatment Program authorities specified under 40CFR 403.8(f)(1). Note: The full text of 40CFR 403.8 (f)(1) is included in Appendix 3-3.

Section	Section Title
14.48.160	Permit - Revocation, Etc., in Case of Industrial Waste Connection
14.48.170	Permit - Approval of Pre-Treatment Facility Plans, Etc.
16.04.010	General Prohibitions on Discharges
16.04.040	Limitations on Radioactive Wastes
16.08.020	Wastewater Discharge Permits
16.14.070	Termination of Service
16.08.050	Pre-Treatment
16.08.060	Protection from Accidental Discharge
16.08.075	Users Outside City
16.08.080	Special Agreements
16.12.010	Non-Complying Discharges
16.04.100	Local Limitations on Wastewater Strength
16.08.010	Discharge Reports
16.08.015	Certification Requirement
16.08.030	Monitoring Facilities
16.08.040	Inspection and Sampling
16.14.034	Administrative Penalties
16.14.040	Civil Penalties
16.14.050	Criminal Penalties
16.12.020	Issuance of Cease and Desist Orders
16.12.030	Submission of Time Schedule
16.08.070	Confidential Information

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Section 4

Element 4: Operation and Maintenance Program

4.1 Regulatory Requirement

The SSMP must include an Operation and Maintenance (O&M) Program that includes:

1. Up-to-date mapping of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, force mains and valves, and applicable stormwater conveyance facilities.
2. A description of routine preventive maintenance activities including a schedule for regular maintenance and cleaning and targeted maintenance performed at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities such as work orders.
3. A rehabilitation and replacement plan to identify and prioritize system deficiencies including CCTV inspections.
4. Staff training.
5. Equipment and replacement part inventories, including identification of critical replacement parts.

4.2 Appendix for Element 4: Operation and Maintenance Program

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

1. Appendix 4-1: Information Technology Governance Plan
2. Appendix 4-2: Sanitary Sewer System Map
3. Appendix 4-3: Cleaning and Inspection Plan
4. Appendix 4-4: Lift Station Maintenance, Inspection and Condition Assessment Plan
5. Appendix 4-5: Flow Monitoring Plan
6. Appendix 4-6: CCTV, Rehabilitation and Replacement Plan
7. Appendix 4-7: Exfiltration Abatement Plan
8. Appendix 4-8: Line Segments Requiring Repair, Rehabilitation or Replacement
9. Appendix 4-9: Wastewater Collection System Equipment List
10. Appendix 4-10: Wastewater Collection System Replacement Parts
11. Appendix 4-11: Wastewater Collection System Replacement Parts Inventory Procedure

4.3 Mapping

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, pumping facilities and pressure pipes (force mains). The GIS data is linked to the City's CMMS,

Cartegraph, 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, POSM.

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 Document, provided in Appendix 4-1. A hardcopy map of the City's wastewater collection system is provided in Appendix 4-2.

4.4 Preventative Maintenance Program

The City's wastewater collection system cleaning program is described in Appendix 4-3. This report 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. The City's overall preventive maintenance program includes:

- Routine sewer cleaning
- Accelerated sewer cleaning
- Identification of issues needing further investigation and/or repair (Maintenance Requests).

A report describing the City's lift station and force main maintenance, inspection and condition assessment program is provided in Appendix 4-4.

A report describing the City's wastewater collection system flow monitoring program is provided in Appendix 4-5.

A description of the City's FOG program is provided in Section 7 of this SSMP.

4.5 Rehabilitation and Replacement Plan

The City's wastewater collection system CCTV pipe inspection and repair, rehabilitation and replacement program is described in Appendix 4-6 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 this information to develop capital improvement projects.

The City has an additional short-term rehabilitation program, the Exfiltration Abatement Plan program, which seeks to reduce any potential for pipeline exfiltration of sanitary flow into nearby storm drains. This program will end prior to April, 2017. This program is referenced in Appendix 4-7. The current list of the City's line segments requiring repair, rehabilitation or replacement is available upon request.

4.6 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.

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.

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.

4.7 Equipment and Replacement Part Inventories

The City's wastewater collection system equipment list is included in Appendix 4-9. The Critical Replacement Parts List is included in Appendix 4-10. The City's Replacement Parts Inventory procedure is included in Appendix 4-11.

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Section 5

Element 5: Design and Performance Provisions

5.1 Regulatory Requirement

The Enrollee must have:

1. Design and construction standards and specifications for the installation of new and/or rehabilitated sewer systems.
2. Procedures and standards for inspecting and testing new or rehabilitated sewers.

5.2 Appendix for Element 5: Design and Performance Provisions

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

1. Appendix 5-1: City of Santa Barbara Design and Construction Standards
2. Appendix 5-2: City of Santa Barbara Design and Construction Standard Details

5.3 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 Department will provide specific information for incorporating the telemetry communication necessary for treatment facilities, sewer lift stations, and metering stations.

City Design and Performance Provisions are provided in Appendix 5-1.

5.4 Inspection and Testing Standards

The City's Wastewater Collection System Standards for Construction, Inspection and Testing are The Standard Specifications for Public Works Construction, 2006 Edition, as modified by the City's Standard Specifications. The City's Construction Standard Details are provided in Appendix 5-2.

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Section 6

Element 6: Overflow Emergency Response Plan

6.1 Regulatory Requirement

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:

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

6.2 Appendix for Element 6: Overflow Emergency Response Plan

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

1. Appendix 6-1: SSO Response Plan
2. Appendix 6-2: Lift Station SSO Response Plan
3. Appendix 6-3: Waterfront Department SSO Response Plan

6.3 Overflow Emergency Response Plan

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. A copy of this document is provided in Appendix 6-1. Copies of the Lift Station and Waterfront Department SSO Response Plans are provided in Appendix 6-2 and 6-3, respectively.

Section 7

Element 7: Source Control Program

7.1 Regulatory Requirement

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:

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

7.2 Appendix for Element 7: Source Control Program

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

1. Appendix 7-1: FOG Control Work Plan
2. Appendix 7-2: FOG Disposal Facilities

7.3 FOG Source Control Program

The City's FOG Program, presented in Appendix 7-1, 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. Appendix 7-2 includes a list of acceptable FOG Disposal Facilities.

Pretreatment inspections of industrial users are the responsibility of the City Wastewater Treatment Plant (WWTP) laboratory and are not included in this program. There are eleven industrial facilities that are under the industrial program.

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Section 8

Element 8: System Evaluation and Capacity Assurance Plan

8.1 Regulatory Requirement

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:

1. **Evaluation:** Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events.
2. **Design Criteria:** Where design criteria do not exist or are deficient, undertake the evaluation identified in (1) above to establish appropriate design criteria.
3. **Capacity Enhancement Measures:** The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, 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.
4. **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.

8.2 Appendix for Element 8: System Evaluation and Capacity Assurance Plan

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

1. Appendix 8-1: Wastewater Collection System Master Plan
2. Appendix 8-2: Capital Improvement Plan

8.3 Evaluation, Design Criteria and Capacity Enhancements

The City recently completed a Wastewater Collection System Master Plan. The plan, developed to identify and mitigate existing and future capacity deficiencies, includes a capacity evaluation, system performance and design criteria, and proposed capacity enhancements. This Plan is provided in Appendix 8-1.

8.4 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. Public Works Engineering Staff prioritize and select the projects to be included on the annual list. Alternatives are analyzed and schedules are established during the design process. A copy of the City's current Capital Improvement Plan is provided in Appendix 8-2.

Section 9

Element 9: Monitoring, Measurement and Program Modifications

9.1 Regulatory Requirement

The Enrollee shall:

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

9.2 Appendix for Element 9: Monitoring, Measurement and Program Modifications

There is no appendix associated with Element 9.

9.3 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
- Total number of service calls
- 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
- Percent of SSOs resolved within 2 hours

The City maintains and tracks this information. 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..

9.4 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.

Section 10

Element 10: SSMP Program Audits

10.1 Regulatory Requirement

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, including identification of any deficiencies in the SSMP and steps to correct them.

10.2 Appendix for Element 10: SSMP Program Audits

Supporting information for Element 10 is included in Appendix 10. This appendix includes the following documents:

1. Appendix 10-1: 2010 SSMP Audit
2. Appendix 10-2: 2012 SSMP Audit (To be completed by December 2012)

10.3 Internal Audits

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. The results of the audit, including the identification of any deficiencies and the steps taken to correct are included in the subsequent Annual Summary Report to the RWQCB.

Audits from 2008, 2010 and 2012 are included in Appendix 10-1, 10-2 and 10-3, respectively. Future audits will be added to this section of the SSMP. Because major updates in Wastewater Collection System work plan documents were completed during 2012, the City postponed the 2012 SSMP to 2013.

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Section 11

Element 11: Communication Plan

11.1 Regulatory Requirement

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.

11.2 Appendix for Element 11: Communication Plan

There is no appendix associated with Element 11.

11.3 Communication Plan

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

11.3.1 Regional Water Quality Control Board (RWQCB)

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

11.3.2 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.

11.3.3 Mission Canyon Sewer District (County Service Area 12)

The Mission Canyon sewer system is the City's only satellite collection system. The City provides operation and maintenance services to the Santa Barbara County Public Works Department. The City is aware of the current performance of this sewer system because of its role in operations and maintenance. The City has regular and ongoing communications with the County to provide them with information on the performance of the collection system.

11.3.4 Public

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

<http://www.santabarbaraca.gov/Resident/Water/Wastewater/WWCollectionSystem.htm>

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)
- Other Programs to Prevent Spills

Following the completion of this SSMP update, the document will be posted to this website.

The current SSMP and annual Infiltration/Inflow and Spill Reduction Reports are available for public review at the City's Wastewater Treatment Plant, 520 E. Yanonali, (805) 568-1010.

Additional discussion about the City's Communication Plan is provided in Appendix 4-3, Cleaning and Inspection Plan and Appendix 6-1, SSO Response Plan.

Limitations

This document was prepared solely for City of Santa Barbara in accordance with professional standards at the time the services were performed and in accordance with the contract between Santa Barbara and Brown and Caldwell dated June 7, 2011. This document is governed by the specific scope of work authorized by Santa Barbara; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Santa Barbara and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information. Brown and Caldwell does not provide any guarantee of results, disclaims any and all warranties, express and implied, and, except to the extent expressly stated herein, does not make any representations as to City's compliance with consent decrees or other judicial requirements. As to conditions reported either by Brown and Caldwell or by others that are relied upon and used as a basis for the information contained herein, those conditions only reflect conditions reported, observed, detected, or analyzed at the particular location and at the particular time: Conditions at other locations or at other times may differ substantially, and no representation is implied or intended as to such other locations and times.

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Appendix 2: Organization

Appendix 2-1: Wastewater Collection System Staff Contact Information

Appendix 2-2: Wastewater Collection System Staff Contact Organization Chart

Information contained in this Appendix is available upon request. Please contact:

Chris Toth

Wastewater System Manager

City of Santa Barbara

1-805-564-5412

CToth@SantaBarbaraCA.gov

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Appendix 3: Legal Authority

Appendix 3-1: City of Santa Barbara Municipal Code – Title 14.

Appendix 3-2: City of Santa Barbara Municipal Code – Title 16.

Appendix 3-3: National Pretreatment Program 40CFR 403.8(f)(1)

Information contained in this Appendix is available upon request. Please contact:

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Appendix 4: Operation and Maintenance Program

Appendix 4-1: Information Technology Governance Plan

Appendix 4-2: Sanitary Sewer System Map

Appendix 4-3: Cleaning and Inspection Plan

Appendix 4-4: Lift Station Maintenance, Inspection and Condition Assessment Plan

Appendix 4-5: Flow Monitoring Plan

Appendix 4-6: CCTV, Rehabilitation and Replacement Plan

Appendix 4-7: Exfiltration Abatement Plan

Appendix 4-8: Line Segments Requiring Repair, Rehabilitation or Replacement

Appendix 4-9: Wastewater Collection System Equipment List

Appendix 4-10: Wastewater Collection System Replacement Parts

Appendix 4-11: Wastewater Collection System Replacement Parts Inventory Procedure

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Wastewater System Manager

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Appendix 5: Design and Performance Provisions

Appendix 5-1: City of Santa Barbara Design and Construction Standards

Appendix 5-2: City of Santa Barbara Design and Construction Standard Details

Information contained in this Appendix is available upon request. Please contact:

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Appendix 6: Overflow Emergency Response Plan

Appendix 6-1: SSO Response Plan

Appendix 6-2: Lift Station SSO Response Plan

Appendix 6-3: Waterfront Department SSO Response Plan

Information contained in this Appendix is available upon request. Please contact:

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Appendix 7: Source Control Program

Appendix 7-1: FOG Control Work Plan

Appendix 7-2: FOG Disposal Facilities

Information contained in this Appendix is available upon request. Please contact:

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Appendix 8: System Evaluation and Capacity Assurance Plan

Appendix 8-1: Wastewater Collection System Master Plan

Appendix 8-2: Capital Improvement Plan

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Chris Toth

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Appendix 10: SSMP Program Audits

Appendix 10-1: 2010 SSMP Audit

Appendix 10-2: 2012 SSMP Audit (To be completed by December 2012)

Information contained in this Appendix is available upon request. Please contact:

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