City of Laguna Beach

Sewer System Management Plan June 2021

City Council Recertified: on January 20, 2015
Resolution No. 15.003
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Resolution No. 21.051
Enrolled: July 20, 2006
City WDID #9SSO10653

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1.0 Introduction

1.1. Sewer System Management Plan

This Sewer System Management Plan (SSMP) has been prepared by the Water Quality Department of the City of Laguna Beach with the assistance of Causey Consulting, Walnut Creek, CA. It is a compendium of the policies, procedures, and activities that are included in the planning, management, operation, and maintenance of the City's sanitary sewer system.

The State Water Resources Control Board (SWRCB) has issued statewide waste discharge requirements for sanitary sewer systems, which include requirements for development of an SSMP. The State Water Board requirements are outlined in Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated May 2, 2006 (GWDR), and Order No. WQ-2008-0002-EXEC, dated February 20, 2008, which was amended by Order No. 2013-0058-EXEC, effective September 9, 2013, which changed the Monitoring and reporting Program (MRP). Additional requirements pertaining to Municipal Separate Storm Sewer Systems (MS4s), are incorporated into this SSMP. Finally, the City is referenced as a satellite discharging to the South Orange County Wastewater Authority (SOCWA) permitted by the San Diego Regional Water Quality Control Board Order No. R9-2012-0013, effective April 11, 2012 and as amended in Order R9-2014-0098.

The structure (section numbering and nomenclature) of this SSMP follows the above referenced GWDR and MRP. This SSMP is organized by the SWRCB outline of elements; and contains language taken from the GWDR as at that beginning of each element. The GWDR uses the term "Enrollee" to mean each individual municipal wastewater agency that has completed and submitted the required application for coverage under the WDR (in this case, the Enrollee is the City of Laguna Beach). The City's waste discharger identification number (WDID) in the California Integrated Water Quality System (CIWQS) is 9SSO10653.

1.2. Sanitary Sewer System Facilities

The City operates a sanitary sewer system that serves a population of approximately 22,723 in an 8.7 square mile service area. The sewer system serves 7,688 residential connections and 355 commercial, industrial, and institutional customers as of 2014. The sewer system consists of 97 miles of gravity sewers (approximately 3164 line segments), 2937 manholes, 7 miles of force mains, and 25 lift stations. The sewers range in size from four (4) inches to twenty-seven (27) inches in diameter. The property owner is fully responsible for installation, maintenance, and repair of the parcel private sewer lateral(s).

In addition to the sanitary sewer system facilities, the City maintains a system of 25 urban water diversion units. 23 of the units are maintained by City staff, 21 of the units are located within the City's sanitary sewer system service area, Diversion units connect the storm drain system to the sewer system so that dry weather nuisance flows may be diverted away from the receiving waters

to the sanitary sewer system. These diversion units also divert SSOs within the watersheds they serve.

Intro Figure 1 contains an overview map of the City's sanitary sewer system.

Intro Table 1 and **Intro Table 2** provide the composition of the sewer piping by size and material of construction.

Intro Table 3 provides the installation age distribution of the City's collection system.

Intro Table 4 provides the system information of all siphons in the collection system.

Intro Figure 1: Laguna Beach Sewer System Map

Intro Table 1: Gravity Sewer System Size Distribution

Diameter, inches	Number of Line Segments	Pipe Length, linear feet	Portion of Sewer System, %
4	9	714	0.1
6	76	8325	1.7
8	2457	396,889	80.2
10	144	28,711	5.8
12	60	13,207	2.7

Diameter, inches	Number of Line Segments	Pipe Length, linear feet	Portion of Sewer System, %
15	64	13,874	2.8
16	3	497	0.1
18	42	9,426	1.9
21	11	3,202	0.6
24	15	7,025	1.4
27	18	5,307	1.1
Unknown	38	7,836	1.6
Total	**2,937**	**495,013**	**100%**

Source: City Infrastructure File, 10/19/20

Intro Table 2: Sewer System Materials of Construction

Material	Number of Line Segments	Pipe Length, LF	Percent of Sewer System
VCP	2,104	362,178	73.2
HC	1	92	0.0
PVC	456	70,760	14.3
CIP	34	6,816	1.4
DIP	1	178	0.0
RCP	38	9,306	1.9
CF	1	198	0.0
ACP	1	171	0.0
NCI	17	9,357	1.9
Unknown	284	35,978	7.3
Total	**2,937**	**495,013**	**100%**

Source: City Infrastructure File, 10/19/20

Intro Table 3: Inventory of Sewer Lines by Pipe Age

Age in Years	Construction Period	Percent of System	Miles of Main Sewer
0-15	2000 - current	20	18.75
16 – 35	1980 – 1999	25	23.44
36 – 55	1960 – 1979	5	4.69
56 – 75	1940 – 1959	40	37.50
76 – 95	1920 – 1939	10	9.38
95 – 115	1900 – 1119	0	0

Age in Years	Construction Period	Percent of System	Miles of Main Sewer
>115	Before 1900	0	0
Total, miles			**93.75**

Source: CIWQS Operational Performance Report 8/10/20

Intro Table 4: Inventory of Siphons in System

Pipe Diameter	CIP	VCP	RCP	PVC	Total
6	470	0	0	0	470
8	540	0	0	1,265	1,805
10	1,200	0	0	0	1,200
12	1,200	0	2,535	0	3,735
15	0	0	4,900	300	5,200
18	0	0	2,440	300	2,740
21	0	535	440	0	975
24	0	0	4,811	0	4,811
Total	**3,410**	**535**	**15,126**	**1,865**	**20,936**

Source: City Infrastructure File, 10/19/20

1.3. Definitions, Acronyms, and Abbreviations

Asbestos Cement Pipe (ACP)

Best Management Practices (BMP)

Refers to the procedures employed in commercial kitchens to minimize the quantity of grease that is discharged to the sanitary sewer system. Examples include scraping food scraps into a garbage can and dry wiping dishes and utensils prior to washing.

Building Lateral – see Private Sewer lateral

Calendar Year (CY)

California Integrated Water Quality System (CIWQS)

Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system. The electronic reporting requirement became effective on February 14, 2007 in Region 9.

Capital Improvement Plan (CIP)

Refers to the document that identifies future capital improvements to the City's sanitary sewer system.

Cast Iron Pipe (CIP)

Cast iron (CI) pipes were widely used for sewage before plastic pipes were invented. As opportunity arises, they are now being replaced by high-density polyethylene (HDPE) pipes and polyvinyl chloride (PVC) pipes. Some cast-iron pipes are still in working condition.

City

Refers to the City of Laguna Beach

Closed Circuit Television (CCTV)

Refers to the process and equipment that is used to internally inspect the condition of gravity sewers.

Computerized Maintenance Management System (CMMS)

Refers to the computerized maintenance management system that is used by the City to plan, dispatch, and record the work on its sanitary sewer system. Cartegraph is the propriety software the City uses for CMMS.

Division of Water Quality (DWQ)

Refers to the State of California Division of Water Quality of the State Water Resources Control Board.

Fats, Oils, and Grease (FOG)

Refers to fats, oils, and grease typically associated with food preparation and cooking activities that can cause blockages in the sanitary sewer system.

Feet per sec (fps)

First Responder

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

Fiscal Year (FY)

Means a 12-month periods beginning July 1st and ending June 30th.

Food Service Establishment (FSE)

Refers to commercial or industrial facilities where food is handled/prepared/served that discharge to the sanitary sewer system.

Full-time Equivalent (FTE)

Refers to the equivalent of 2,080 paid labor hours per year by a regular, temporary, or contract employee.

General Waste Discharge Requirements (GWDR)

Refers to the State Water Resources Control Board Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated 5/2/2006.

Geographical Information System (GIS)

Refers to the City's system that it uses to capture, store, analyze, and manage geospatial data associated with the City's sanitary sewer system assets.

Global Positioning System (GPS)

Refers to a field device it that is recommended to determine the longitude and latitude of sanitary sewer overflows for use in meeting CIWQS reporting requirements.

Gallons per Day (GPD)

Grease Removal Device (GRD)

Refers to grease traps and grease interceptors that are installed to remove FOG from the wastewater flow at food service establishments.

Green Book

Standard Specifications for Public Works Construction (2018 or most current version).

(HC) House Connection

House connections or private sewer lateral in Laguna Beach vary in size and material types. Orangeberg pipe is still being discovered. Pipes are to be replaced to meet the Uniform Plumbing Code and made of plastic ABS or PVC or other materials as approved by the Building Official.

High Density Polyethylene (HDPE)

Mercury (HG)

Infiltration/Inflow (I/I)

Refers to water that enters the sanitary sewer system from storm water and groundwater.

- Infiltration enters through defects in the sanitary sewer system after flowing through the soil.
- Inflow enters the sanitary sewer without flowing through the soil. Typical points of inflow are holes in manhole lids and direct connections to the sanitary sewer (e.g. storm drains, area drains, and roof leaders).

Lateral – See Private Sewer Lateral

Legally Responsible Official (LRO)

Person(s) designated by an agency to be responsible for formal reporting and certifying of all reports submitted to the CIWQS.

Lift Station (LS)

A facility that transmits and lifts sewage into the City gravity sanitary sewer collection system

Lucity

The software used by the City for computerized maintenance management prior to 2020. (CMMS)

Manhole (MH)

Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection.

Mainline Sewer

Refers to City wastewater collection system piping that is not a private lateral connection to a user.

Monitoring, Measurement, and Plan Modifications (MMPM)

Monitoring and Reporting Program (MRP)

State Water Resources Control Board WQ 2013-0058-EXEC effective September 9, 2013.

Municipal Separate Storm Sewer System (MS4)

A municipally owned storm sewer system regulated under the Phase I or Phase II storm water program implemented in compliance with Clean Water Act section 402(p).

(NCI) North Coast Interceptor

Refers to the city's primary wastewater transmission pipeline. The pipeline is comprised of sections of 24-inch reinforced concrete pipe (RCP), and 27-inch fiberglass reinforced "big-string " pipe.

Notification of an SSO

Refers to the time at which the City becomes aware of an SSO event through observation or notification by the public or other source.

Nuisance

California Water Code section 13050, subdivision (m), defines nuisance as anything that meets all the following requirements:

- Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
- Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
- Occurs during, or as a result of, the treatment or disposal of wastes.

Office of Emergency Services (OES)

Refers to the California State Office of Emergency Services.

Operations and Maintenance (O&M)

Overflow Emergency Response Plan (OERP)

Pipeline Assessment and Certification Program (PACP)

Refers to the NASSCO certification program that is used for the evaluation and condition assessment of sewer lines and appurtenances from closed circuit televising of the lines and appurtenances.

Polyvinylchloride Pipe (PVC)

Preventive Maintenance (PM)

Refers to maintenance activities intended to prevent failures of the sanitary sewer system facilities (e.g. cleaning, CCTV, repair, etc.).

Private Sewer Lateral

That portion of a private property's building sewer as defined by the plumbing code and is further defined as the piping of a drainage system that extends from the end of the building drain to the public sewer which includes the connection to the public sewer. (LBMC 17.50.020(m))

Private Lateral Sewage Discharges (PLSD)

Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

Property Damage Overflow

Refers to a sewer overflow or backup that damages a property owner's premises.

Public Works (PW)

Regional Water Quality Control Board (SDRWQCB)

Refers to the San Diego Regional Water Quality Control Board.

Reinforced Concrete Pipe (RCP)

Sanitary Sewer Backup (Backup)

A wastewater backup into a building and/or on private property caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

Sanitary Sewer Overflows (SSO)

Any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:

(i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;

(ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and

(iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

SSOs that include multiple appearance points resulting from a single cause will be considered one SSO for documentation and reporting purposes in CIWQS.

NOTE: Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned are not SSOs.

SSO Categories:

Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either:

- Reaches surface water and/or drainage channel tributary to a surface water; or
- Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.

Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either:

- Does not reach surface water, a drainage channel, or an MS4, or
- The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.

Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition.

Sanitary Sewer System or Sewer System

Refers to the sanitary sewer facilities that are owned and operated by the City of Laguna Beach.

Sensitive Areas

Refers to areas where an SSO could result in a fish kill or pose an imminent or substantial danger to human health.

Sewer Service Lateral

Refers to the piping that conveys sewage from the building to the City's wastewater collection system.

Sewer System Management Plan (SSMP)

Standard Dimension Ratio (SDR)

Refers to the ratio of pipe diameter to pipe wall thickness in plastic pipes.

Standard Operating Procedures (SOP)

Refers to written procedures that pertain to specific activities employed in the operation and maintenance of the Sanitary Sewer System.

Standard Specifications

Refers to the latest edition of Standard Specifications published by the California Department of Transportation, Caltrans.

State Water Resources Control Board (SWRCB)

Refers to the California Environmental Protection Agency, State Water Resources Control Board.

Note: The State Board is a separate entity from the San Diego Regional Water Quality Control Board, although the two agencies are closely connected.

Supervisory Control and Data Acquisition (SCADA)

Refers to the system that is employed by the City to monitor the performance of its lift stations and to notify the operating staff when there is an alarm condition that requires attention.

System Evaluation and Capacity Assurance Plan (SECAP)

Untreated or Partially Treated Wastewater

Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.

Vitrified Clay Pipe (VCP)

Water Body

Any stream, creek, river, pond, impoundment, lagoon, wetland, or bay.

Water of the State

Refers to "any surface water or groundwater, including saline waters, within the boundaries of the state." (California Water Code § 13050(e).

Water Quality Monitoring Plan (WQMP)

Work Order (WO)

Refers to a document (paper or electronic) that is used to assign work and to record the results of the work.

1.4. References

State Water Resources Control Board Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, California State Water Resources Control Board, May 2, 2006.

State Water Resources Control Board Order No. Order No. 2013-0058-EXEC, Amending Monitoring and Reporting Program For Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, September 9, 2013.

California Regional Water Quality Control Board Region 9, San Diego Region Order No. R9-2007-0005 Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region, February 14, 2007.

California Integrated Water Quality System Operational Performance Report WDID 9SSO10653

Element I: Goals

SWRCB Waste Discharge Requirement:

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

I.1: SSMP Goals

The goals of the City of Laguna Beach SSMP are:

1. To properly and safely manage, operate, and maintain all portions of the City's wastewater collection system;
2. To provide adequate capacity to convey the peak wastewater flows to the City's wastewater treatment plant. Adequate capacity, for the purposes of the SSMP, is defined as the capacity to convey the peak wastewater flows that are associated with peak summertime flows;
3. To help minimize the frequency of SSOs;
4. To help mitigate the impacts that are associated with any SSO that may occur; and
5. To help meet all applicable regulatory notification and reporting requirements.

Element II: Organization

SWRCB Waste Discharge Requirement:

The Sewer System Management Plan (SSMP) must identify:

a. The name of the responsible or authorized representative as described in Section J of this Order.

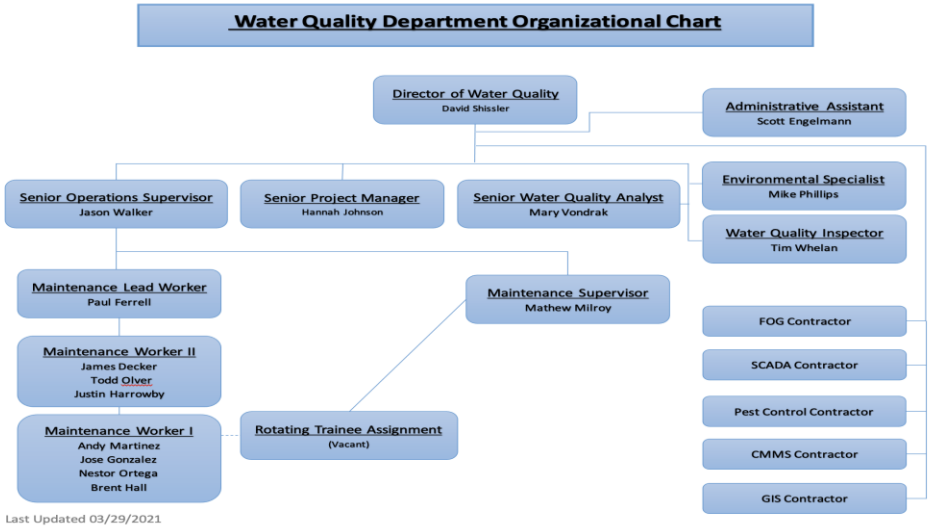
b. The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and

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

II.1: Organizational Structure

The organization chart for the management, operation, and maintenance of the City's wastewater collection system is shown below.

Figure II – 1: Laguna Beach Water Quality Department Organization Chart



II.2: Authorized Representatives

The City's *Legally Responsible Officials* (LRO) for wastewater collection system matters are identified below along with their roles and responsibilities for the collection system operations. They are authorized to submit electronic and written spill reports to the Office of Emergency Services (OES). They are the City's legally responsible officials who are authorized to certify electronic spill reports and other required submittals to the SWRCB.

Director of Water Quality - (LRO) - Oversees the overall sanitary sewer program, communicates with the City Manager, provides reports to the City Council, establishes policy, plans strategy, reviews, and certifies SSMP, allocates resources, delegates responsibility, authorizes outside contractors to perform services, and designates additional Legally Responsible Officials (LRO) to certify SSO reports. Reports to the City Manager.

Senior Water Quality Analyst – Coordinates permits, laws, and regulations related to stormwater and wastewater management. Manages the development, implementation and administration of various environmental compliance and water pollution prevention programs. Reports to the Director of Water Quality.

Senior Operations Supervisor – Data Submitter (DS) - Manages field operations and maintenance activities, provides relevant information to agency management, prepares, and implements contingency plans, leads emergency response, investigates and reports SSO's, and trains field crews. Reports to the Director of Water Quality.

Senior Project Manager – Manages and administers the capital improvement program (CIP), conducts inspections for CIP projects, ensures that new and rehabilitated assets meet agency standards. Reports to the Director of Water Quality.

Environmental Specialist – (DS) - Conducts inspections of industrial and commercial facilities, investigates the illegal discharge of wastewater to the storm drains. Reports to the Director of Water Quality.

Administrative Assistant – Assists with documentation of SSOs and dispatch of field crew.

Maintenance Lead Worker – (DS) - Responsible for maintenance and operations of the City's diversion units and collection system. Implements preventive maintenance on diversion units and the collection system and provides 24-hour emergency response. Reports to Senior Operations Supervisor.

Maintenance Supervisor – (DS) - Responsible for maintenance and operations of the City's lift stations; implements preventive maintenance at lift stations and provides 24-hour emergency response. Reports to Senior Operations Supervisor.

Maintenance Worker I – Responds to SSOs. Performs preventive maintenance activities and mobilizes and responds to notification of stoppages and SSO's. Reports to Senior Operations Supervisor.

Maintenance Worker II – Responds to SSOs. Performs preventive maintenance activities and mobilizes and responds to notification of stoppages and SSO's. Reports to Senior Operations Supervisor.

FOG Inspector (contractor) - Conducts inspections of food service establishments. Engages enforcement of the FOG Program. Reviews and certifies new kitchen plan sets for compliance with FOG municipal code requirements.

SCADA Support (contractor) – Provides support to ensure the proper operation of the City's SCADA (lift station alarm) system.

CMMS Provider (contractor) - Provides support to ensure the proper operation of the City's Computerized Maintenance Management System.

Pest Control (contractor) – Treats city sewer system manholes for pests on an annual basis.

GIS Systems (contractor) – Updates sewer system maps and GIS layers.

II.3: Responsibility for SSMP Implementation and Maintenance

The Director of Water Quality shall have the overall responsibility for, implementing, periodically auditing, and maintaining the City's SSMP. He/she may delegate these responsibilities to his/her staff.

Other 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 **Table I – 1**.

Table I – 1: Responsible Officials in Water Quality Chain of Communication

Element	Element Name	Responsible City Official	Phone	Email
	Introduction	Director of Water Quality *Alt: Sr. Water Quality Analyst*	949-497-0378	dshissler@lagunabeachcity.net *mvondrak@lagunabeachcity.net*
1	Goals	Director of Water Quality *Alt: Sr. Water Quality Analyst*	949-497-0378	dshissler@lagunabeachcity.net *mvondrak@lagunabeachcity.net*
2	Organization	Director of Water Quality *Alt: Sr. Water Quality Analyst*	949-497-0378	dshissler@lagunabeachcity.net *mvondrak@lagunabeachcity.net*
3	Legal Authority	Director of Water Quality *Alt: Sr. Operations Supervisor*	949-497-0378	dshissler@lagunabeachcity.net *jwalker@lagunabeachcity.net*
4	Operations and Maintenance Program	Director of Water Quality *Alt: Sr. Project Manager*	949-497-0378	dshissler@lagunabeachcity.net *hjohnson@lagunbeachcity.net*
5	Design and Performance	Director of Water Quality *Alt: Sr. Project Manager*	949-497-0378	dshissler@lagunabeachcity.net *hjohnson@lagunbeachcity.net*
6	Overflow Emergency Response Plan	Director of Water Quality *Alt: Sr. Water Quality Analyst*	949-497-0378	dshissler@lagunabeachcity.net *mvondrak@lagunabeachcity.net*

Element	Element Name	Responsible City Official	Phone	Email
7	Fats, Oils, and Grease (FOG) Control Program	Director of Water Quality *Alt: Sr. Project Manager*	949-497-0378	dshissler@lagunabeachcity.net *hjohnson@lagunabeachcity.net*
8	System Evaluation and Capacity Assurance Plan	Director of Water Quality Alt: Sr. Project Manager	949-497-0378	dshissler@lagunabeachcity.net *hjohnson@lagunabeachcity.net*
9	Monitoring, Measurement and Program Modifications	Director of Water Quality Alt: Sr. Water Quality Analyst	949-497-0378	dshissler@lagunabeachcity.net *mvondrak@lagunabeachcity.net*
10	Program Audits	Director of Water Quality Alt: Sr. Water Quality Analyst	949-497-0378	dshissler@lagunabeachcity.net *mvondrak@lagunabeachcity.net*
11	Communications Program	Director of Water Quality Alt: Sr. Water Quality Analyst	949-497-0328	dshissler@legunabeachcity.net *mvondrak@lagunabeachcity.net*
App A	SSMP Internal Audit Reports	Director of Water Quality Alt: Sr. Water Quality Analyst	949-497-0328	dshissler@legunabeachcity.net *mvondrak@lagunabeachcity.net*
App B	SSMP Change Log	Director of Water Quality Alt: Sr. Water Quality Analyst	949-497-0328	dshissler@legunabeachcity.net *mvondrak@lagunabeachcity.net*
	SSMP Adoption Documents	Director of Water Quality Alt: Sr. Water Quality Analyst	949-497-0328	dshissler@legunabeachcity.net *mvondrak@lagunabeachcity.net*
App D	Overflow Emergency Response Plan	Director of Water Quality *Alt: Sr. Water Quality Analyst*	949-497-0378	dshissler@lagunabeachcity.net *mvondrak@lagunabeachcity.net*
App E	Water Quality Monitoring Plan	Director of Water Quality *Alt: Sr. Water Quality Analyst*	949-497-0328	dshissler@lagunabeachcity.net mvondrak@lagunabeachcity.net

II.4: SSO Reporting Chain of Communication

The SSO Reporting Chain of Command follows the Organization Chart shown above in Figure II – 1: Laguna Beach Water Quality Department Organization Chart. The SSO Reporting process and responsibilities are described in detail in the Overflow Emergency Response Plan.

II.5: References

None.

Element III: Legal Authority

SWRCB Waste Discharge Requirement:

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:

- Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc.);
- Require that sewers and connections be properly designed and constructed;
- Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;
- Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and enforce any violation of its sewer ordinances.

III.1: Municipal Code

The Laguna Beach Municipal Code describes the City's current legal authority required for compliance with the GWDR. That authority is specifically contained within Title 17 of the Municipal Code and generally within other Municipal Code Titles that are summarized in **Table III – 1** below.

Table III – 1: Summary of Legal Authorities in the Laguna Beach Municipal Code and Other Sources

Requirement	Legal Authority Reference
Prevent illicit discharges into the wastewater collection system	17.30.200; 17.30.207, 208, 212
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	17.40 et seq.
Require that sewers and connections be properly designed and constructed	17.08.010, .020
Require proper installation, testing, and inspection of new and rehabilitated sewers	17.08.010; 17.50.100
Clearly define City responsibility and policies	17.50.020
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City	17.16.040; 17.50.100
Control infiltration and inflow (I/I) from private service laterals	25.38.051
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal	17.40; 14.64.010

Requirement	Legal Authority Reference
devices, maintenance requirements, BMP requirements, record keeping and reporting requirements	
Authority to inspect grease producing facilities	17.40.062
Enforce any violation of its sewer ordinances	17.16.060; 17.30 et seq.

Note: Additional pretreatment and FOG related authority is included in the South Orange County Wastewater Authority Agreement, with the City being a member of the Joint Powers Authority thereto.

III.2: Agreements with Satellite Agencies

The City of Laguna Beach has one satellite agency, the Emerald Bay Services District. This special district discharges to a City trunk sewer which transports that agency's sewage to the sewage treatment facilities operated by the South Orange County Wastewater Authority. Agreements are in place governing this use.

III.3: References

Laguna Beach Municipal Code Title 17 and 25

Joint Exercise of Powers Agreement Creating South Orange County Wastewater Authority, July 1, 2001, and amendments 1 to 8.

Element IV: Operations and Maintenance Program

SWRCB Waste Discharge Requirement:

The Sewer System Management Plan (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 preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventive Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;

c. Develop a 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 and maintenance and require contractors to be appropriately trained; and provide equipment and replacement part inventories, including identification of critical replacement parts.

IV.1: Collection System Mapping

The City has a Geographic Information System (GIS) that includes the information for its wastewater collection system assets. The GIS is managed through an agreement with a GIS contractor who is responsible for all appropriate updates, including adding any new system infrastructure constructed or accepted for maintenance by the City. The City also has information in its GIS for its storm drainage system. The GIS information is not currently available in City maintenance vehicles. The City provides copies of its storm drainage system in field personnel vehicles.

City staff is evaluating the need for and costs and benefits of using tablet type equipment in all collection system vehicles to provide instant access to all maps of both the sanitary and storm

water sewer systems. These tablets would also include a newly developed SSO Reporting software application (app) developed by the California Sanitation Risk Management Authority (CSRMA).

Currently the field crews use hard copy maps that are produced from the GIS. The hard copy maps are updated as changes are identified or upon acceptance of new facilities. Corrections that are identified by the field crews are given verbally and by form to the GIS Consultant who in turn transmits the corrections to the City when the corrections are completed. New facilities are incorporated into the maps during these updates.

Sewer maps are also available to the public on the Water Quality Department web page but are to be used only as advisory tools prior to specific requests for the most updated maps.

IV.2: Preventive Operation and Maintenance

The elements of the City's sewer system O&M program include:

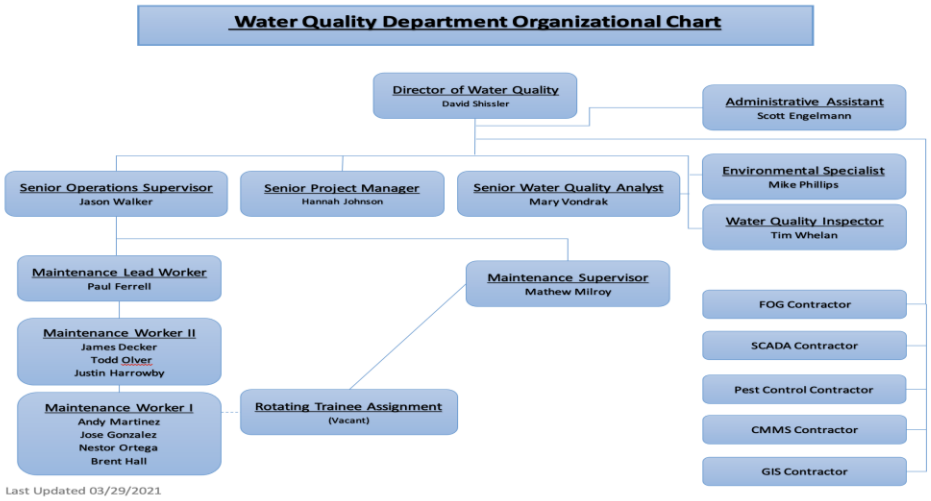
- Proactive, preventive, and corrective maintenance of gravity sewers;
- Ongoing CCTV inspection program to determine the condition of the gravity sewers;
- Rehabilitation and replacement of sewers that are in poor condition; and
- Periodic inspection and preventive maintenance for the lift stations and force mains.
- Annual inspection and maintenance of emergency bypass pumps and valves.

Commented [SDW1]: Added to change log 8/3/2021

The collection system organization chart for implementing the City's O&M program is shown below in **Figure IV – 1: Laguna Beach Water Quality Department Organization Chart**.

The details of the program are explained following the chart.

Figure IV – 1: Laguna Beach Water Quality Department Organization Chart

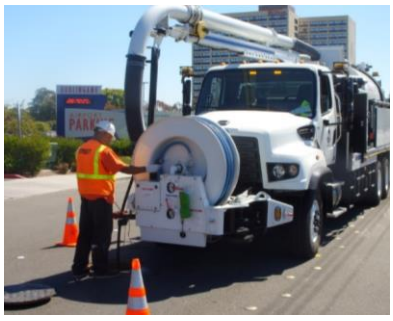


IV.3: Gravity Sewers

The City proactively cleans its entire Sanitary Sewer System at least once per year, and it preventively cleans sewers with a history of problems every three (3) and six (6) months.

The line cleaning crew evaluates cleaning results based upon the Standard Sewer Cleaning Results derived from the City's Standard Operating Procedures (SOP) Manual. Staff places line segments on these higher frequency schedules based upon past cleaning results, history of SSO events, history of cleaning results, video inspections and professional judgment. Cleaning crews operate combination cleaning units and rodders to accomplish cleaning of lines.

Summary statistics for the high frequency lines are shown in **Table IV – 1: High Frequency Lines** below. The City added additional cleaning crew in March 2021 to assure continued support for the collection system operations. The historical line and lateral cleaning results are shown in **Table IV – 2: Historical Line Cleaning Results** below. Large diameter pipes 16 inch in diameter or greater are cleaned using service contractors rather than City staff. City collection system staff maintains not only the sewer system but also many other public works infrastructure assets in the City Public Works operations.



The City also maintains 23 urban water diversion structures shown below in **Figure IV – 2: Urban Water Diversion Unit Coverage Map** that cover the highest priority watersheds. Diversions provide a final "safety net" to protect receiving waters from pollution

from storm drains and SSOs. Illicit discharges, accidental spills, groundwater inflow and nuisance water flows are all sent to the sewer system for treatment.

These diversions involve a direct connection to a wastewater lift station through valving that is closed during the winter wet weather periods when the storm water is allowed to discharge directly to the beach and ocean. The collections crews are responsible for the operation and maintenance of urban water diversion units.

Diversion maintenance includes monthly cleanings and inspections as well as wet weather activation and deactivation. An estimated 255,000 gallons of nuisance flows are cleaned and diverted to the sanitary sewer each day.

Below is an overview map of the City's Diversions unit coverage. The area in light green represents the land area that drains into an urban water diversion unit.

Figure IV – 2: Urban Water Diversion Unit Coverage Map

Table IV – 1: High Frequency Lines

Frequency	Number of Segments	Linear Feet	Annual Cleaning, Linear Feet
3 months	89	17,541	70,284
6 months	782	108,736	217,472
	TOTAL:	**126,307**	**287,756**

Table IV – 2: Historical Line Cleaning Results

Calendar Year	Line Cleaning Results, linear feet	Line Cleaning Results, miles	Percent of System
2020			
2019	677,484	128.3	131%
2018	637,434	120.7	123%
2017	647,161	122.6	125%
2016	200,486	38.0	39%
2015	289,805	54.9	56%
2014	446,212	84.5	86%
2013	444,121	84.1	98.5
2012	392,487	74.3	86.7
2011	653,397	123.7	144.3
2010	652,415	123.5	144.1
2009	752,249	142.5	166.3
Average/year	**563,460**	**107.0**	**113.8**

The City inspects all manholes annually as part of the cleaning operations. All problem conditions found are then contracted for repairs to service contractors. The City has trained its employees in the PACP condition rating systems for manholes (MACP) developed by NASSCO. In the future manholes will be rated using MACP as part of the regular cleaning operations.

The City staff has aggressively completed CCTV condition assessments on a five-year return frequency utilizing the PACP Rating System from NASSCO using outside contractors. Future assessments are based upon Figure IV-3: CCTV Return Frequency Based Upon PACP Rating. The historical results of the City CCTV efforts are shown below in **Table IV – 3: Historical Results of Closed Circuit** Television. In addition, the City also uses sonar inspections of main lines using the Sewer Line Rapid Assessment Tool (SL-RAT) to provide real-time blockage assessments in gravity sewer lines.[1]

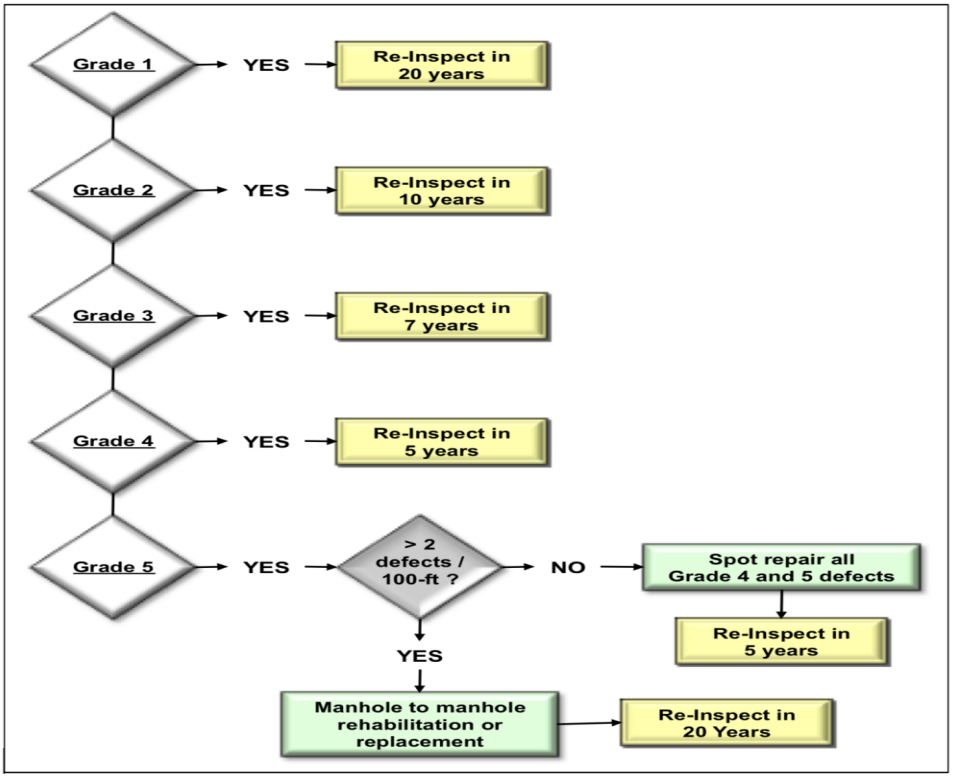
The future CCTV program will be based upon a condition-based approach with return frequencies determined according to the flow chart **Figure IV – 3: CCTV Return Frequency based upon PACP Ratings**, shown below**.**

[1] City of Laguna Beach SOP 2020_1

Table IV – 3: Historical Results of Closed Circuit Television

Calendar Year	CCTV Results linear feet	CCTV Results Miles	Percent of System
2020	107,019	20.27	21%
2019	44,987	8.52	9%
2018	105,990	20.07	21%
2017	119,164	22.57	23%
2016	0	0	0
2015	0	0	0
2014	5,673	1.07	1.2%
2013	5,646	1.07	1.1%
2012	2,090	0.40	0.4%
2011	2,795	0.53	0.6%
2010	6,582	1.25	1.3%
2009	2,835	0.54	0.6%

Figure IV – 3: CCTV Return Frequency based upon PACP Ratings



The wastewater collection system staff maintains a list of known structural deficiencies determined from the CCTV results conducted during pipeline assessments. This list is maintained in priority order by structural rating. High priority structural deficiencies, PACP rating 5, if found to exist, will be repaired as soon as possible by outside contractors.

Gravity sewer maintenance is currently scheduled using work orders generated by the City's CMMS. Completed gravity sewer maintenance is recorded using work orders.

Because of recent increased odor complaints, the City has increased its public education on odors, increased line cleaning in those areas and added oxygen injection at two of the largest lift stations. The City has spent approximately one million dollars to date attempting to resolve these issues and is committed to exploring all options and opportunities to reduce or eliminate odor issues from the collection system and lift stations.

IV.3.1: Lift Stations

The City operates and maintains 25 lift stations, as shown below in **Figure IV – 4: Lift Station Location Map**. The City conducts regular operational inspections of its lift stations. The large sanitary sewer lift stations are inspected daily while the minor stations are inspected twice per week. The wet wells are cleaned annually, and the mechanical and electrical equipment preventive maintenance is scheduled bi-annually for cleaning. The City will conduct annual comprehensive lift station condition assessments utilizing the document shown in **Appendix IV-E Lift Station Condition Assessment Checklist**.

Figure IV – 4: Lift Station Location Map

Source: Lift Station Access and Containment Map Book, October 2006

All lift stations include SCADA monitoring systems that automatically alert on-call Wastewater Division staff if unusual conditions or alarms are registered 24/7. The Maintenance Supervisor is responsible for all work scheduling and documentation for the lift stations maintenance. In addition, he/she is to provide training to other collections system staff on the operations of each lift station so that staff is familiar with emergency response procedures at the lift stations in case of emergencies. An outside service contractor specializing in this type of maintenance provides major high-voltage electrical maintenance.

The Water Quality Department has established emergency response procedures during power outages for lift station operations as well as lift station contingency plans for each of the 25 stations. These documents include important response information to protect beaches and the ocean from SSOs that might reach a beach.

The contingency plans include wet well retention times, overflow containment directions and locations and directions of overflow paths from the stations. These procedures are intended to assure the maximum protection of the City's very important beach and ocean environment areas. All emergency response employees are trained and required to understand these important procedures.

Each of the 25 lift stations discharge to force mains that are identified and described in the **Table IV – 4: Lift Station Locations and Descriptions,** shown below.

IV.3.2: Force Mains

Force main alignments will be inspected on an annual basis, and discharge locations will be surveyed for possible damage and corrosion from the release of hydrogen sulfide when the force mains discharge to the gravity collection system. **NOTE**: As of December 2020, the Victoria Lift Station #1 is under construction for a full rehabilitation and will be in service by May 2021.

Table IV – 5: Force Main Locations and Descriptions shown below lists the force main asset information. Many of the force mains were installed at the time of the original construction of the associated lift station.

Table IV – 4: Lift Station Locations and Descriptions

Pump Station Name	Location/ Construction Date	No. Pumps	Pump GPM	Pump Manufacturer	Pump HP	Standby Generation-KW
Victoria Beach #1	Victoria Beach 2021*	2	150	Reliance	10	204
Victoria Beach #2	2675 Victoria Beach 1972	2	150	Reliance	15	204
Rockledge #3	1 Rockledge 2013	1	100	Vaughn	10	None
Millers #4	2500 South Coast Highway 1932	2	200	Reliance	10	None
Pearl Street	Pearl Street/Ocean Way 1950	2	150	Reliance	7.5	None
Bluebird Canyon	Bluebird Canyon/Coast Hwy 1950	2	400	ESSCO	10	Kohler 70
Brooks Street	Brooks Street/Ocean Front 2009	2	100	ESSCO	2	None
Anita Street	Anita Street/Gaviota 1950	2	400	ESSCO	15	Kohler 70
Cleo Street	Cleo Street/Sleepy Hollow 2000	2	375	ESSCO	20	Kohler 70

Pump Station Name	Location/ Construction Date	No. Pumps	Pump GPM	Pump Manufacturer	Pump HP	Standby Generation-KW
Animal Shelter	20000 block Laguna Canyon Rd. 2019	1	150	ESSCO	1.5	None
Main Beach	187 North Coast Highway 2012	3	600	Vaughn	20	Cummins 70
Heisler Park	500 Cliff Drive 2008	1	80	ESSCO	1.5	None
Fisherman's Cove	Boat Canyon 1948	2	400	ESSCO	10	Cummins 70
Fairview	Cliff Drive/Shaws Cove 2008	2	350	ESSCO	20	Cummins 70
Crescent Bay	Barranca – Cliff Dr/Crescent Bay 2003	2	325	ESSCO	20	Kohler 70
McKnight	100 Blk. McKnight Drive 1957	2	50	ESSCO	3	None
Irvine Cove	Next to 2945 Rivera Drive 1961	2	200	ESSCO	3	None
Santa Cruz	1500 block of Santa Cruz 1961	1	100	Reliance	5	None
Bernard Court	Next to 2865 Bernard Court 1961	2	200	Reliance	10	None
Bonn Drive	3163 Bonn Drive 1964	2	250	Reliance	15	None
Arch Beach Heights	970 Oro Street 1994	2	250	Reliance	20	General 85
Old Top of the World	28954 Sommet du Monde 1987	2	120	EMU	7.5	Onan 30
Nyes Place	210 Nyes Place 1991	2	650	Reliance	10	Cummins 204
Laguna SOCWA	City Yard 2018	4	2000	Reliance (2) Fairbanks (2)	60	Detroit Diesel Allison 350
Bluebird SOCWA	1509 Glenneyre Street 2019	4	3000	Cornel (2) Fairbanks (2)	120	Detroit Diesel Allison 515

NOTE: As of December 2020, the Victoria Lift Station #1 is under construction for a full rehabilitation and will be in service by May 2021.

Table IV – 5: Force Main Locations and Descriptions

Name of Lift Station Associated with Force Main	Force Main Asset Information			Year of Construction
	Length (linear feet)	Size (inches)	Material Type	
Victoria Beach #1	115	4	PVC	1993
Victoria Beach #2	388	6	ACP	1972
Rockledge #3	388	4	CIP	2012
Millers #4	203	6	C-900 PVC	2004
Pearl Street	475	6	PVC	1998
Bluebird Canyon	471	6	PVC	1986
Brooks Street	136	4	PVC	1999
Anita Street	547	6	ACP	2015
Cleo Street	897	6	PVC	1998
Animal Shelter	176	4	PVC	1988
Main Beach	641	6 & 8	CIP	1958/2001/2012
Heisler Park	101	4	CIP	2007
Fisherman's Cove	347	6	PVC	1982
Fairview (Shaws Cove)	533	6	PVC	2006
Crescent Bay	661	6	PVC	1998
McKnight	275	4	CIP	1980
Irvine Cove	1,012	6	ACP	1961/2006
Santa Cruz	306	4	PVC	1989
Bernard Court	423	8	ACP	1961
Bonn Drive	888	4	PVC	1999
Arch Beach Heights	337	6	ACP	1970
Old Top of the World	1,021	4	PVC	1987
Nyes Place	222	8	PVC	1991
Laguna SOCWA	3,600	24 & 27	RCP & FG	1981
Bluebird SOCWA	10,760	24 & 27	RCP & FG	1981
Total	**24,923**			

IV.3.3: Private Sewer Laterals

The City has no responsibility for the installation, maintenance, operation, repair, or replacement of private sewer laterals connected to the City mains.

The City has developed a private sewer lateral reference guide that can be found on the City website at: http://www.lagunabeachcity.net/civicax/filebank/blobdload.aspx?BlobID=5139.

The City Council has also adopted a separate Ordinance to govern the responsibilities for private sewer lateral owners. The reference guide provides important information regarding the private property owner's role and responsibility for the proper use of these important sewer related facilities that may create health hazards and impact waterways and the ocean if not operated properly.

The City reports all private sewer lateral SSOs as they become aware of the overflows.

IV.3.4: Siphons

The City has established a project within the capital improvement program to address siphons. That program will include an evaluation of cleaning and condition assessment methods available in the industry, including methods for cast iron and reinforced concrete siphons. One of the siphons extends 3,200 feet and exceeds the distance with which conventional vactor-type cleaning equipment can extend. The use of remote robotics will be used to travel along the length of long siphons. The project is programmed in the City's adopted 10-year capital improvement program for FY 2022-23.

The current inventory of City siphons is included in Intro Table 4.

IV.3.5: Roach Control

The City annual hires a service contractor to provide roach control in lines that have been identified as having infestation problems. Annually they treat approximately 1000 manholes on a three (3) year treatment cycle. The program has proven to be very successful and has reduced customer complaints to a negligible number. The historical results of the root foaming program are stated in Table IV-6 below.

Table IV – 6: Historical Roach Control Results

Calendar Year	Roach Control Application Areas	Manholes Each	Percent of System
2019	North Laguna to Downtown	1000	34%
2018	Downtown south to Bluebird	1000	34%
2017	Victoria north to Bluebird and Downtown	1000	34%
2016	North Laguna to Downtown	1000	34%
2015	Downtown south to Bluebird	1000	34%

Calendar Year	Roach Control Application Areas	Manholes Each	Percent of System
2014	Victoria north to Bluebird and Downtown	1000	34%
2013	North Laguna to Downtown	1000	34%
2012	Downtown south to Bluebird	1000	34%
2011	Victoria north to Bluebird and Downtown	1000	34%
2010	North Laguna to Downtown	1000	34%
2009	Downtown south to Bluebird	1000	34%

Reference: City Infrastructure Table 10/19/20

IV.3.6: Rehabilitation and Replacement Program

The City's Capital Improvement Plan for the was developed from the CCTV inspection program in the past five (5) years that evaluated the condition of all gravity sewers, and that includes PACP condition rating of each line segment. The information gathered during the condition assessments is used to prioritize gravity sewers for repair/rehabilitation/replacement.

The City has an annual sewer rehabilitation and replacement program to rehabilitate or replace the portions of its wastewater collection system and lift stations assets where condition ratings warrant. The projects that are included in the **City's Capital Improvement Program are listed in Appendix IV-A**. The funds that support the Capital Improvement Program come from the City's sewer service charges that are based upon regular sewer service charge rate analyses.

IV.3.7: Training

The City uses a combination of in-house classes and field exercises; on the job training; conferences, seminars, OSHA classes and other training opportunities that are provided in the southern California area. The City highly recommends its wastewater collection system employees be certified in Collection System Maintenance by the California Water Environment Association. The certification process requires employees to demonstrate that they have participated in 12 hours of training every two years to renew their certificates.

The City conducts department seminars for its wastewater collection system employees on both the SSMP and OERP annually including volume estimation and SSO start time determinations. This training includes field exercises in the estimation of SSO volume and SSO containment.

In addition, the City conducts annual confined space entry and certification for all employees that might be required to enter confined spaces anywhere in the City. Finally, the City conducts weekly tailgate meetings with all collections system staff to discuss topics related to safety, operations, and performance expectations.

The City has recently appointed a new Safety Training Coordinator who is expected to develop a full range of safety related training requirements for the collection systems operations.

The City's standard service and construction contract language requires all contractors working in the wastewater collection system to provide training for their employees on the City's Sanitary Sewer Overflow Emergency Response Plan or demonstrate they have been trained on an equivalent emergency response plan of their own.

The City general provisions will be modified to include language requiring that contractors certify to the City that their emergency response plans are at least as comprehensive as the City OERP. Emergency response procedures are reviewed at all pre-construction meetings and regularly during City construction projects.

IV.3.8: Equipment and Replacement Parts

The list of the major equipment that City uses in the operation and maintenance of its sewer system is included in **Appendix IV-B: Major Sewer System Equipment Inventory**.

The City has developed a Critical Replacement Parts List. It has also developed a Replacement Parts Inventory procedure that is included in **Appendix IV-C: Critical Sewer System Replacement Parts Inventory**.

IV.3.9: Outreach to Sewer Service Contractors

The City has established a plumber's hot line that allows plumbers to call the City prior to maintenance on private sewer laterals. Once notified the City crew will be available to protect the City main lines from the deposition of root cuttings and grease into main lines by trapping and removing the lateral cleaning results from the nearest downstream manhole. This program assures that private lateral maintenance will not result in main line blockages or overflows in or from the collection system.

IV.4: References

City of Laguna Beach Standard Operating Procedures (SOP) Manual

Supplement IV – A: Renewal & Replacement Program Budget in $1000's

Project Title	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
Pipeline Rehabilitation (Zone 3)	1,070	0	0	0	0
CCTV Inspection of Collection System (Zone 5)	138	0	0	0	0
ACL and NCI Improvements Design (New)	1,500	0	0	0	0
SOCWA WWTP Projects	3,172	0	0	0	0
Pipeline Rehabilitation (Zone 5)	0	1,000	0	0	0
NCI Physical Condition Assessment Analysis	0	60	0	0	0
VFD Replacements at Laguna SOCWA and Bluebird SOCWA	0	80	0	0	0
SOCWA WWTP Projects	0	2,237	0	0	0
Forcemain Inspection Project	0	0	250	0	0
Siphon Inspection Project (Moved from Yr. 1)	0	0	500	0	0
NCI Physical Condition Assessment - Implementation	0	0	500	0	0
NCI Reach 5 Replacement	0	0	8,884	0	0
Miscellaneous Operational Improvements at Main Beach Lift Station (Moved from Yr. 2)	0	0	60	0	0
Bluebird Canyon Lift Station Reconstruction Design (Moved from Yr. 2)	0	0	250	0	0
Anita Street Lift Station Reconstruction Construction (moved from Yr. 1)	0	0	2,500	0	0
SOCWA WWTP Projects	0	0	725	0	0
Victoria II Lift Station Rehabilitation Design	0	0	0	100	0
SCADA Radio System Replacement	0	0	0	200	0
Emergency Onsite Generator Replacements at Bluebird SOCWA	0	0	0	350	0
VFD Conversions at SOCWA Lift Stations	0	0	0	250	0
Bluebird Canyon Lift Station Reconstruction Construction (Moved from Yr. 3)	0	0	0	2,500	0
5-Yr CCTV Inspection of Collection System and Manholes	0	0	0	1,000	0

Project Title	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
O2 Odor Control System Upgrades at Bluebird SOCWA	0	0	0	500	0
SOCWA WWTP Projects	0	0	0	1,870	0
Victoria II Lift Station Rehabilitation Construction	0	0	0	0	750
Crescent Bay Lift Station Design and Permitting	0	0	0	0	250
Top of the World Onsite Generator Replacement and Backup Power Extension to Bernard Court Lift Station Design	0	0	0	0	300
O2 Odor Control System Upgrades at Laguna SOCWA	0	0	0	0	150
SOCWA WWTP Projects	0	0	0	0	3,182
Totals	**5,800**	**3,377**	**13,669**	**6,770**	**4,632**

Source: Laguna Beach CIP Appendix IV-B, 3/29/21

Supplement IV – B: Major Sewer System Equipment Inventory*

Equipment Number	Major Equipment Type	Year Purchased	Location
200	Vactor Combination Truck	5/31/17	Corporation Yard
198	Rodder	9/13/15	Corporation Yard
197	Hydro Jet easement	5/3/19	Corporation Yard
191	Aquatech Combination Truck	6/30/12	Corporation Yard
ST-3	Portable Generator	2012	Corporation Yard
ST-4	Portable Generator	2008	Corporation Yard

** Equipment Inventory as of 10/19/20*

Supplement IV – C: Critical Sewer System Replacement Parts Inventory

Part Description	Number in Inventory	Location
Motorola ACE Radio	2	Office at Corporation Yard
Control Panel Replacement Parts - Fuses	various	Panels at each station
4-inch SS Sir/Vac Relief Valve	1	Shop at Corporation Yard
Emergency By-Pass Trailer	1	Corporation Yard
Aluminum Pipe and Couplings - Bypass	11 pipe, 4 elbows, 2 debris filters	Corporation Yard
Lay Flat Hose	500 ft.	Corporation Yard
Trash Pumps	2	Corporation Yard
Spare Vactor Hose – ¾ inch	1 roll	Corporation Yard
Spare Vactor Hose – 1 inch	1 roll	Corporation Yard
Spare Pump Impellers	1	Corporation Yard
Voltaic Coupling for BB SOCWA Bypass	1	Shop at Corporation Yard

Last Inventory Date: 10/19/20

Element V: Design and Performance Provisions

SWRCB Waste Discharge Requirement:

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

V.1: Design Criteria for Installation, Rehabilitation and Repair

The City's Wastewater Collection System Design Criteria are administered by the Water Quality Department of the City and its various Divisions.

V.1.1: General

The City has established standards for both new construction and renewal and replacement work associated with the collection system. These standards were formally adopted by the City Council by its adoption of Resolution No. 04-041 designating the most current Standard Plans for Public Works Construction and Standard Specifications for Public Works Construction as the basic standards for the City. These standards are commonly referred to in the industry as the "Green Book" (2018 edition or newer).

In addition, the City Engineer and the Director of Water Quality are further authorized to employ other design standards or specifications upon determination that the design objectives cannot be achieved using the Green Book. In addition, various Sections of the Municipal Code require that new collection system infrastructure conform to the requirement of the City Engineer, the Community Development Department, and the Building regulations. A hyperlink to these standards is available on the SSMP web page.

The two standards above provide for both new construction and rehabilitation and repair of all main lines sewers, trunk sewers, manholes and other collection system appurtenances.

V.1.2: Lift Station

The City requires that all new or rehabilitated lift stations be designed by a registered engineer and approved by the City Engineer or Director of Water Quality before construction and acceptance by the City Council for maintenance.

V.1.3: City Sewer System – Authorized Materials

The authorized materials that are currently accepted in the City Sewer System are shown below.

Table V – 1: Acceptable Pipe Materials for New Gravity Sewers

Material	Designation	Standard
Polyvinylchloride Pipe (PVC)	SDR-26 or better Fusible C900	ASTM D3033 or D3034 AWWA C900

V.1.4: Private Sewer Systems and Private Laterals

All private sewer systems and private sewer laterals are required to be design, installed, inspected, and accepted per the City Building Division and the appropriate Municipal code requirements therein. Designs must be prepared by a registered engineer or architect for approval by the Building Division. Private sewer laterals must conform to the requirements of the California Plumbing Code.

V.2: Inspection and Testing Criteria

The City's Wastewater Collection System Inspection and Testing Criteria are based on the State of California Standard Specifications published by the Department of Transportation. The City's inspection and testing criteria are:

V.2.1: New and Rehabilitated Gravity Sewers

a. Inspection during Construction –

All new gravity sewers will be periodically inspected during construction to ensure that the sewer is constructed using the specified materials and methods. Specific approvals will be required by the inspector prior to backfilling the trench, prior to paving, and prior to acceptance by the City. The contractor will be required to provide survey controls so that the inspector can verify line and grade (slope). Unusual conditions and special features will be recorded for future reference.

b. Leakage

All new gravity sewers will be tested to verify that they have been properly constructed. Sewers between 8 and 16 inches in diameter will be tested following Standard Specifications for Public Works Construction; Section 306-1.4.4 Air Pressure Test. Gravity sewers that fail the test shall be repaired and retested until they pass.

c. Deflection

All flexible pipe will be tested for deflection following backfill and prior to paving following Standard Specifications for Public Works Construction, Section 306-1.2.12 Field Inspection for Plastic Pipe and Fittings. Gravity sewers that fail the test shall be repaired and retested until they pass. "Re-rounding" is not allowed.

d. CCTV Inspection

All new gravity sewers will be inspected using a closed-circuit television to verify that the pipe is free from defects/damage, that the joints have been correctly constructed, and that the

sewer is free from sags that will cause future operational problems. Gravity sewers shall be cleaned prior to inspection and shall be flushed with water so that sags can be readily identified. Defects shall be recorded following the City standards. Sags that exceed one inch in depth shall be repaired.

V.2.2: New and Rehabilitated Manholes

a. Inspection during Construction

All work for new and rehabilitated manholes to be performed in compliance with "Section 5 System Rehabilitation" of the 2021 edition (or current edition) of the Green Book. Manhole lining and inspection refer to "500-2 MANHOLE AND STRUCTURE REHABILITATION".

b. Leakage

All new manholes will be vacuum tested to verify that the joints, connections, and frame/cover are tight. The vacuum test will follow ASTM C1244. The test will be conducted at a 10-inch Hg vacuum. The vacuum loss shall be less than one inch Hg for the time determined by the inspector or engineer.

Manholes that fail the vacuum test shall be repaired using materials and methods approved by the City Engineer and retested until they pass.

c. Manhole design

Manhole frame and cover within the easement areas shall be hinged type such as Pamrex brand or equal.

V.2.3: New and Rehabilitated Lift stations

a. Inspection during Construction

All new and rehabilitated lift stations will be inspected daily during construction to ensure that they are constructed using the specified materials and methods. Unusual conditions and special features will be recorded for future reference.

b. Functional Test

All systems in new and rehabilitated lift stations will be tested to ensure they function as intended. A detailed set of as-built plans, cataloged shop drawings, and startup and bypass procedures will be required for all lift station reconstruction and rehab projects.

c. Performance Test

All new and rehabilitated lift stations will be required to pass an extended performance test to ensure that they are capable of reliably meeting the design performance for a period of continuous operation without failure or alarms. The results of these performance tests will be recorded for use as a basis for evaluating future lift station performance.

V.3: References

- Standard Plans & Specifications for Public Works Construction, 2021

Element VI: Overflow Emergency Response Plan

SWRCB Waste Discharge Requirement:

Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

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 Sewer System Management Plan (SSMP) should identify the officials who will receive immediate notification;

d. Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;

e. Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

f. A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

VI.1: Sanitary Sewer Overflow Emergency Response Plan

(ref. SWRCB Order No. 2006-0003-DWQ Element VI) (Laguna Beach Overflow Emergency Response Plan by DKF Solutions Group, LLC.). The Section numbering below is not the same as the separate OERP previously approved by the City Council but the narrative does contain all of the important information from that OERP to meet the WDR requirements above. Element VI does not include or incorporate the field packets from the OERP which are Appendices to that document. Please refer directly to the separately approved OERP for the specific field forms.

VI.2: Purpose

The purpose of the City of Laguna Beach Overflow Emergency Response Plan (OERP) is to support a timely, orderly, and effective response to Sanitary Sewer Overflows (SSOs). The

OERP provides guidelines for City personnel to follow in responding to, cleaning, and reporting SSOs that may occur within the City's service area. The OERP is in accordance with the GWDR.

VI.3: Policy

The City's employees are required to report all wastewater overflows and to take the appropriate action to secure the overflow area, properly report the overflow, address the cause of the overflow, and ensure that the affected area is cleaned as soon as possible to minimize potential hazards to the public and the environment. The City's objective is to respond to sewer system overflows as soon as possible following notification.

VI.4: Regulatory Requirements of the General Waste Discharge Requirements

The collection system agency shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

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 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 Monitoring and Reporting Program (MRP).

   All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;

d. Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;

e. Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

f. A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to Waters of the United States and 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.

g. A program to ensure that all timely and reasonable steps are taken to ensure that the City's emergency response team has the guidance for conducting a Biological Resources Damage Assessment whenever a spill from City owned or operated facilities has reached a drainage with biological resources.

VI.5: Goals

The City's goals with respect to responding to SSOs are:

- Work safely;
- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Prevent sewage system overflows or leaks from entering the storm drain system or receiving waters to the maximum extent practicable;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO;
- Meet the regulatory reporting requirements;
- Evaluate the causes of failure related to certain SSOs; and
- Revise response procedures resulting from the debrief and failure analysis of certain SSOs.

VI.6: Full Overflow Emergency Response Plan

The full copy of City Overflow Emergency Response Plan can be found in Appendix E along with copies of all instructions and forms in response packets referred to below. All SSO sampling and testing shall be conducted per the City Biological Resources Damage Assessment SOP which is included in Appendix E.

VI.7: Authority

- Health & Safety Code Sections 5410-5416
- CA Water Code Section 13271
- Fish & Wildlife Code Sections 5650-5656
- State Water Resources Control Board Order No. 2006-0003-DWQ
- State Water Resources Control Board Order 2013-009-DWQ effective September 9, 2013

VI.8: References

Sanitary Sewer Overflow and Backup Response Workbook

Element VII: Fats, Oils, and Grease (FOG) Control Program

SWRCB Waste Discharge Requirement:

Each 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, 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; and
g. Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.

VII.1: Nature and Extent of FOG Problem

It is the City's intent to identify controllable sources of SSO through the implementation of a FOG Program. The overall aim is to reduce the occurrence of FOG-related mainline SSOs in the service area at the low level of FOG related SSOs currently. The City focuses on food service establishments (FSEs) to effectively prevent or reduce FOG-related mainline SSOs. The City currently maintains a list of 116 FSEs that are regularly inspected and monitored for compliance with the FOG Control ordinance.

In 2008, the City modified its FOG Source Control Program to include public outreach targeting residential areas with FOG-related mainline SSOs. Significant FOG-related mainline SSO areas are categorized and mapped.

Data collected are used by City staff to identify areas or line segments of the sanitary sewer collection system prone to FOG-related stoppages, establish a prioritized or accelerated preventive cleaning, inspection, and maintenance schedule for each identified area, enforce and improve its FOG Program, and make necessary updates to its SSMP.

Table VII – 1: Historical FOG-Related SSOs below lists the total number of FOG-related mainline SSOs from 2009 through 2020.

Table VII – 1: Historical FOG-Related SSOs

Calendar Year	Number
2020	0
2019	0
2018	0
2017	1
2016	1
2015	0
2014	0
2013	0
2012	2
2011	0
2010	0
2009	0

VII.2: FOG Source Control Program & Inspections

The City's FOG Source Control Program is intended to work in conjunction with the City's preventive maintenance program to prevent FOG-related SSOs. It remains an essential component in meeting and maintaining its projected SSO reduction performance goals. The City's FOG program, its Food Services Establishment (FSE) inspections and the enforcement of the City's Green Ordinance, have been undertaken by an outside contractor known as Environmental Compliance Inspection Services (ECIS) since June 2001.

The elements of the City's FOG Source Control Program include:

- Requirement for the installation of grease removal devices (GRDs);
- Permitting food service establishments (FSE);
- Requirement for proper operation and maintenance of GRDs
- Verification of grease handling and disposal practices
- FSE inspections

- Public Education and Outreach and
- Enforcement.

The Community Development Department in cooperation with the Water Quality Department is responsible for administering the City's FOG Source Control Program. The City has contracted the actual field inspections of the FOG ordinance to ECIS. The City in conjunction with ECIS is responsible for the enforcement of the FOG Control Program. The City of Laguna Beach has sufficient staff to manage the program and administer the contract with ECIS.

The legal authority to implement, monitor and enforce the elements of the FOG Program in the service area is governed in Title 17.40 of the Municipal Code and in the California Plumbing Code. These code sections provide the legal authority to prohibit FOG discharges to the sanitary sewer collection system.

FSEs subject to the FOG Program are required to install GRDs consistent with the recommended procedures for design, construction, and installation based on the current adopted California Plumbing Code enforced by the Community Development Department. Plan check review for grease removal device installation is coordinated during the building permit application process.

FSEs subject to the FOG Program must comply with Laguna Beach Municipal Code Section 17.40.070 Grease Control which provides the legal framework to enforce the elements of the FOG Program. The discharge permit contains specific permit conditions, which require FSEs to implement FOG Best Management Practices including:

- Proper GRD operation and maintenance
- Documentation and retention of GRD pumping/cleaning activities
- Employee training on FOG handling BMPs, proper equipment cleaning, spill response clean up and control procedures
- Prohibition on the installation and use of food waste disposal grinder
- Proper disposal of grease, oils, and meat fat
- Prohibition on the use or addition of chemical or biological agent for the maintenance of GRD

The City progressive enforcement actions for various field violation scenarios include verbal and written notices of violations, cleanup requirements, and administrative and criminal penalties. Each level of corrective action includes a schedule to achieve timely compliance. Enforcement actions are coordinated and communicated with applicable City staff and ECIS to ensure timely resolution. As of December 2014, the City has experienced only two (2) FOG related SSOs in the past five years.

Public education and outreach remain an integral element of the FOG Program. Outreach is provided to FSE staff and management during routine inspection. Other materials distributed may include grease scrapers, list of grease haulers and cooking oil recyclers, and general technical

information on grease removal devices. Inspectors strive to provide educational information to ensure FSE staff and management comply with the Municipal Code. Responses to GWDR Requirements

Requirement (a):

An implementation plan and schedule for a public education outreach program should promote proper disposal of FOG.

Response:

The City is currently managing its FOG with a FOG Source Control Program and a focused preventive maintenance program (sewer cleaning). City crews provide information on proper FOG disposal to residents that have experienced a FOG-related blockage or SSO. The blockages and SSOs that are caused by FOG from residential sources are minor and infrequent.

Requirement (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.

Response:

There are several disposal sites that are used by the commercial grease haulers working within the City's service area. Many disposal facilities own grease hauler trucks. Smaller grease haulers have contracts for disposal at these larger haul/disposal facilities. In addition, some local POTWs will accept grease waste.

Requirement (c):

The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG.

Response:

The Laguna Beach Municipal Code provides the legal basis and authority (see Element 3) for the City's FOG Control Program.

Requirement (d):

Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.

Response:

The City's FOG Control Program described above, currently meets these requirements.

Requirement (e):

Authority to inspect grease producing facilities, enforcement authorities, and determination of whether the collection system agency has sufficient staff to inspect and enforce the FOG ordinance.

Response:

The City's FOG Control Program involves regular inspections by ECIS and enforcement by the City with support from ECIS (based upon their inspection findings).

Requirement (f) and (g):

Requirement (f) is an identification of sewer system sections subject to FOG blockages and the establishment of a cleaning maintenance schedule for each section, and Requirement (g) is the development and implementation of source control measures, for all sources of FOG discharged to the sewer system.

Response:

The City's FOG Source Control Program and its preventive maintenance program are currently focused on problematic grease dischargers and the FOG high frequency areas, and specifically deal with FOG related concerns identified by the cleaning and CCTV crews during normal cleaning and inspection.

Element VIII: System Evaluation and Capacity Assurance Plan

SWRCB Waste Discharge 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:

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 (a) above to establish appropriate design criteria; and

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, I/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 (a)-(c) above. This schedule shall be reviewed and updated consistent with the Sewer System Management Plan (SSMP) review and update requirements as described in Section D. 14.

VIII.1: System Evaluation - Collection System Master Plan

The City completed Sewer System Strategic Plans in 2002 and January 2009 (Strategic Plan) and is in the process of updating the Strategic Plan in 2020. This later planning effort reviewed all assets in the collection system and established priorities for the renewal and replacement of the City infrastructure assets. This review included a complete evaluation of all City pumping stations and the North Coast Interceptor and identified deficiencies in these systems and developed a complete 10-year capital program for improvement.

The Strategic Plan identified several wastewater collection system facilities that needed repairs or replacement. The City's aggressive capital program has mostly addressed these needs in the past several years. The Strategic Plan did not include any capacity analysis, as there has been no

evidence of capacity issues in the collection system to the current time. In addition, the existing City design criteria are considered conservative, and any new developments are required to evaluate the impacts on capacity of the system as part of the approval processes. Finally, many collection system pipes were designed for an expected expansion of the service area that will not now take place. Engineering analysis indicates that these larger than required pipes are more than capable of handling all expected flows including infiltration and inflow requirements from the ultimate service area.

VIII.2: Design Criteria

The capacity-related design criteria, including base wastewater flow and peaking factors, are included in Element V- Design and Performance Provisions.

VIII.3: Capacity Enhancement Measures - Capital Improvement Program

The City prepares an annual list of capital improvement projects that includes projects to address recently identified wastewater collection system capacity issues. Engineering Staff prioritize and select the projects to be included on the annual list.

As a part of the Sewer Strategic Plan, the current CIP program was revised to include a new 10-year list of capacity-related CIP projects. Alternatives are analyzed and schedules are established during the design process and updated annual with the revisions to the City's Capital Improvement Program for all city infrastructure. The City's Capital Improvement Program Budget is included as **Appendix IV-A**. The City Council has also approved a Wastewater Financing Plan & Sewer Service Charge Increases in November 2019 that established sewer rates through fiscal year 2023/24.

VIII.4: Schedule

The current schedule for the City's capacity enhancement projects does not include any capacity related improvement projects in **Appendix IV-A**. However, this list will be revised, as necessary, based upon future condition assessments and maintenance results from the field crews.

VIII.5: References

- Wastewater Financing Plan & Sewer Service Charge Increases Agenda Bill November 12, 2019

Element IX: Monitoring, Measurement, and Program Modifications

SWRCB Waste Discharge Requirement:

The Enrollee shall:

a. Maintain relevant information that can be used to establish and prioritize appropriate Sewer System Management Plan (SSMP) activities;

b. Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;

c. Assess the success of the preventive maintenance program;

d. Update program elements, as appropriate, based on monitoring or performance evaluations; and

e. Identify and illustrate SSO trends, including: frequency, location, and volume.

IX.1: Performance Measures

The indicators that the City will use to measure the performance of its wastewater collection system and the effectiveness of its SSMP are:

- Total number of SSOs;
- Number of SSOs for each cause (roots, grease debris, pipe failure, capacity, lift station failures, and other);
- Portion of sewage recovered compared to total volume spilled: and
- Volume of spilled sewage discharged to Waters of the State.

IX.2: Baseline Performance

The City has performance measures in place and it will evaluate its performance annually following the end of the fiscal year. The historical, or baseline, performance is shown separately for gravity mains/lift stations/force mains and lower laterals.

IX.2.1: Mains, Lift Stations, and Force Mains

The baseline performance and SSO trends for gravity mains, lift stations, and force mains is shown below.

Table IX – 1: Gravity Sewer, Lift Station, and Force Main SSOs by Calendar Year

Calendar Year	Gravity Sewer SSOs	Lift station SSOs	Force Main SSOs
2010	7	2	1
2011	9	1	0
2012	7	0	0
2013	13	0	0
2014	9	0	1
2015	10	0	0
2016	14	0	0
2017	14	0	0
2018	6	0	0
2019	4	0	0
2020			

Figure IX – 1: Trend in Gravity Sewer, Lift Station, and Force Main SSOs

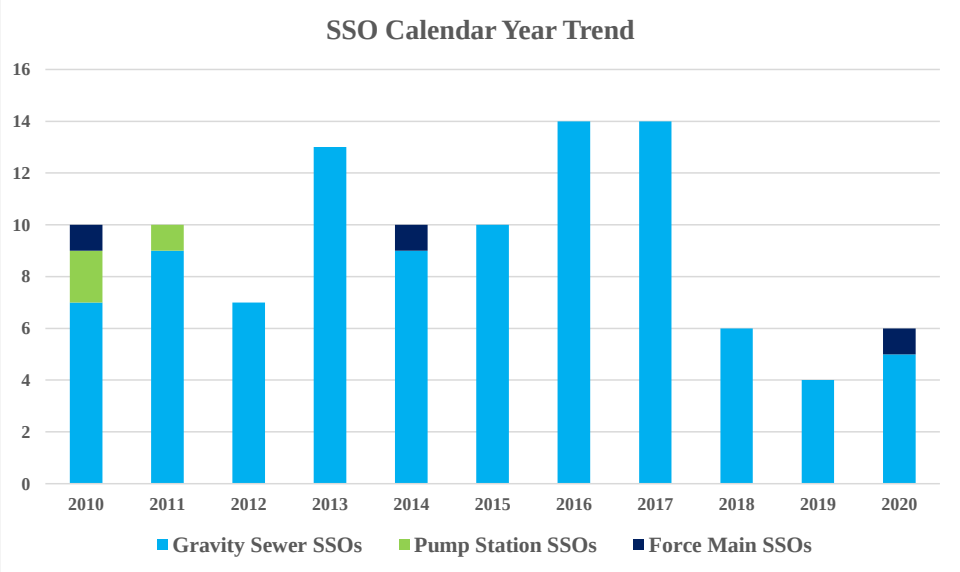


Figure IX – 2: Trend in all SSOs per Calendar Year

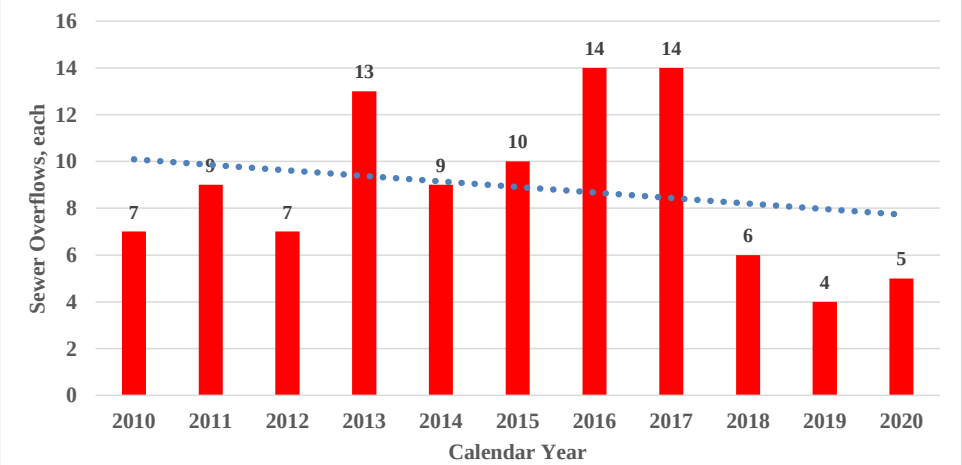
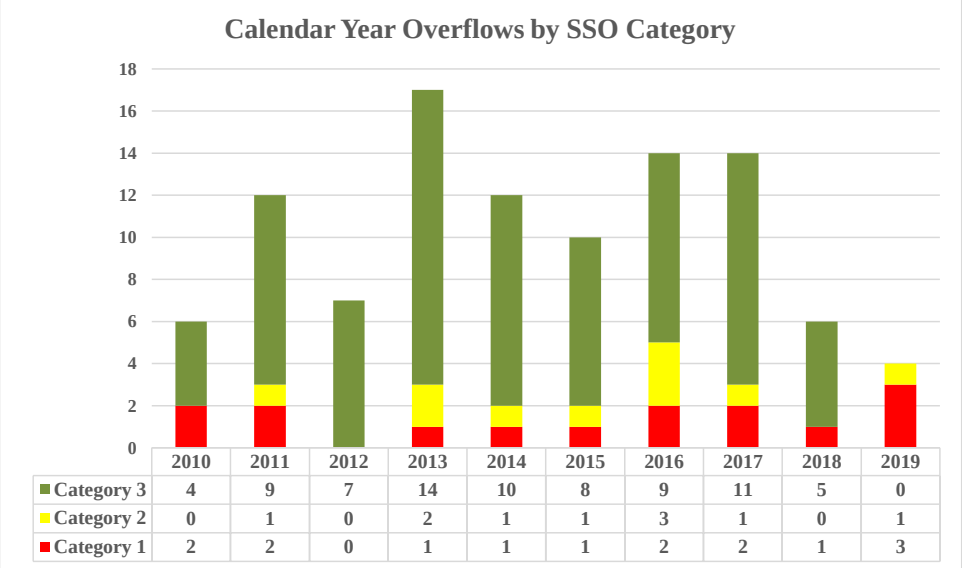


Figure IX – 3: Overflows by SSO Category



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Category 3	4	9	7	14	10	8	9	11	5	0
Category 2	0	1	0	2	1	1	3	1	0	1
Category 1	2	2	0	1	1	1	2	2	1	3

Table IX – 2: Calendar Totals for SSOs by Cause

FY	Roots	Debris	Grease	Infiltration	Construction	Pipe Failure	Power Outage	Total
2010	1	5	0	0	3	0	1	10
2011	2	4	0	1	3	0	0	10
2012	3	3	0	0	0	1	0	7
2013	5	5	2	0	1	0	0	13
2014	7	2	0	0	0	1	0	10
2015	8	2	0	0	0	0	0	10
2016	3	9	1	0	1	0	0	14
2017	8	4	1	0	0	0	0	14
2018	1	5	0	0	0	1	0	6
2019	1	2	0	0	0	0	0	4
Totals	**39**	**41**	**4**	**1**	**8**	**4**	**1**	**98**
Percent	**39.80%**	**41.84%**	**4.08%**	**1.02%**	**8.16%**	**4.08%**	**1.02%**	**100.00%**

Figure IX – 4: Trend in Gravity Sewer, Lift Station and Force Main SSOs by Cause

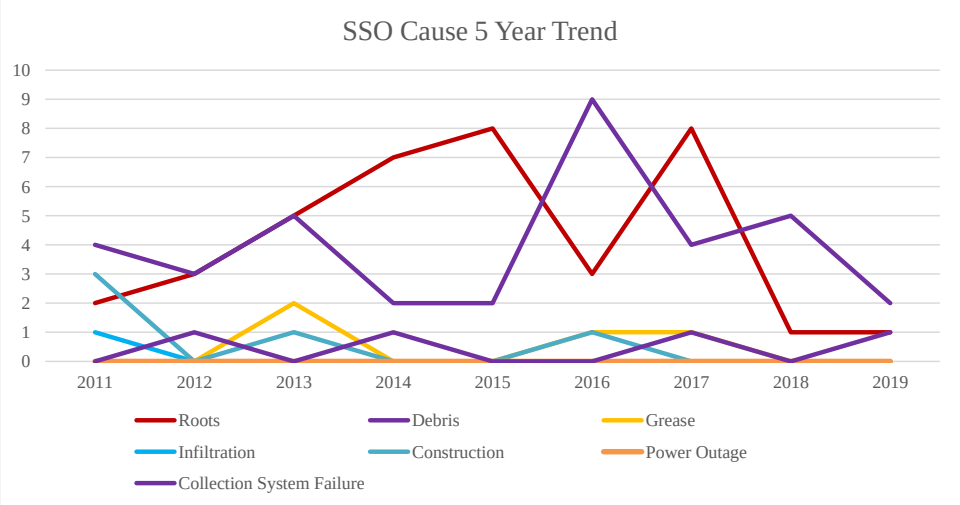


Table IX – 3: FY Totals for Sewer Mains (Volume Spilled, Portion Contained, and Volume to Surface Waters)

Calendar Year	Total Volume Spilled, gallons	Portion Contained and Returned to Sewers, %	Total Volume Entering Surface Waters, gallons
2010	1,122	722	400
2011	67,110	3010	64100
2012	1,578	1578	0
2013	2,749	2749	0
2014	3,399	3164	235
2015	3839	3839	10
2016	11045	8845	750
2017	13243	7243	5300
2018	1900	685	15
2019	1,703,000	1800	1,701,200

Figure IX – 5: Trend in Volume of Sewer Main Spills, Volume Reaching Surface Waters and Volume Recovered

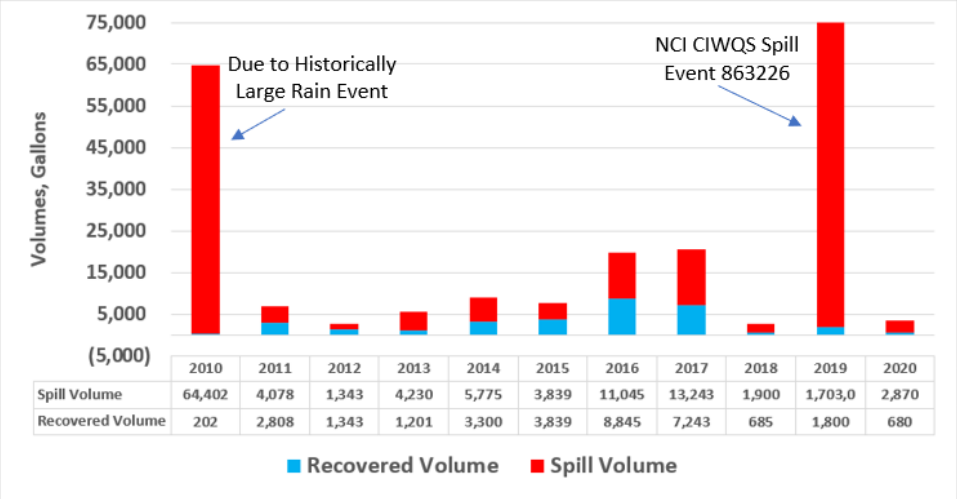
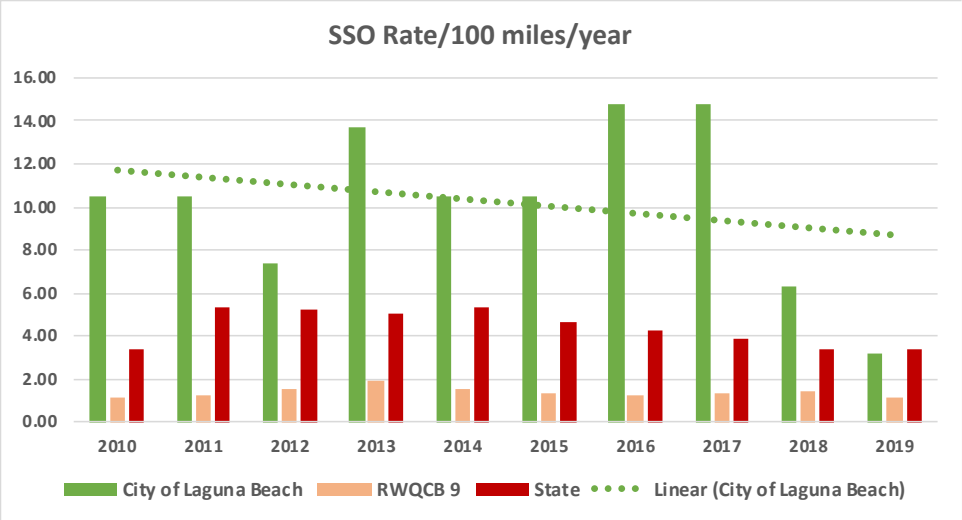


Figure IX – 6: Comparative SSO Rate/100 miles/year



IX.2.2: Private Laterals

The baseline performance and trends in the performance measures of private laterals is shown below.

Table IX – 4: Private Lateral SSOs by Fiscal Year

FY	SSOs
2010	8
2011	16
2012	5
2013	6
2014	2
2015	8
2016	3
2017	8
2018	1
2019	6

Table IX – 5: FY Totals for Private Laterals (Volume Spilled, Portion Contained, and Volume to Surface Waters)

FY	Total Volume Spilled, gallons	Portion Contained and Returned to Sewers, %	Total Volume Entering Surface Waters, gallons
2010	184	179	5
2011	863	293	570
2012	130	126	4
2013	71	13	13
2014	7	7	0
2015	324	321	0
2016	60	60	0
2017	738	738	0
2018	75	75	0
2019	165	165	0

Figure IX – 7: Trend in Private Sewer Lateral SSOs

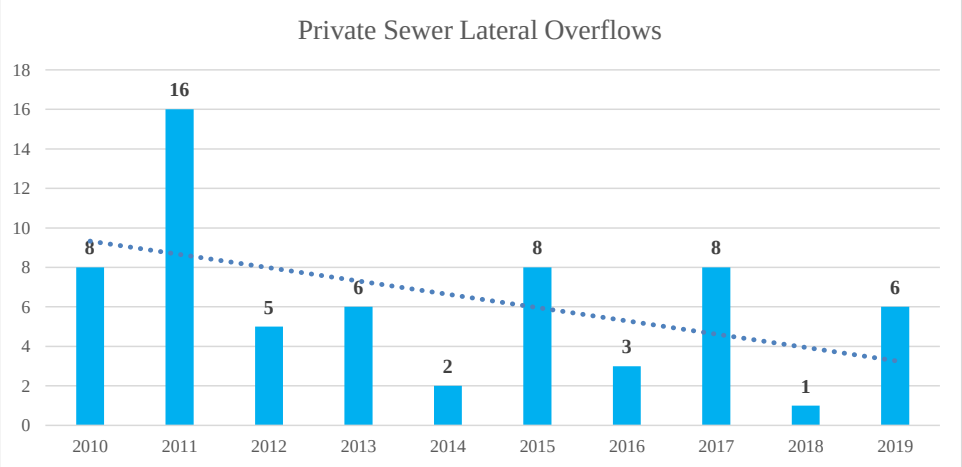
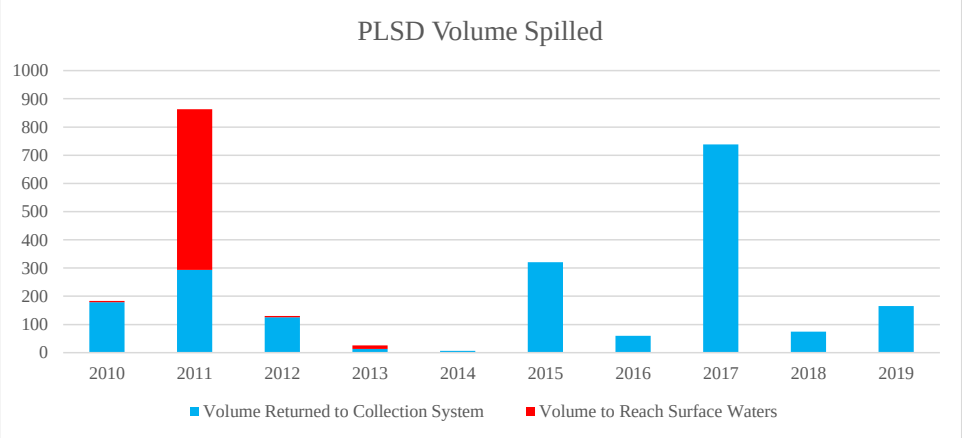


Figure IX – 8: Private Lateral Sewer Discharge Volume Spilled 5-Year Trend



IX.3: Performance Monitoring and Program Changes

The City will evaluate the performance of its wastewater collection system at least annually using the performance measures identified in this Element. The City will update the data and analysis at the time of the evaluation and will place the annual performance report in Appendix A of the SSMP.

The City may use other performance measures in its evaluation. The City will prioritize its actions and initiate changes to this SSMP, its operations and maintenance practices, and any related programs based on the results of the evaluation. This will be done as part of the annual self-audit (see Element X).

IX.4: References

The data used in this section were taken from the references:

- City records
- CIWQS SSO data as of November 7, 2020

Element X: SSMP Program Audits

SWRCB Waste Discharge Requirement:

As part of the Sewer System Management Plan (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.

X.1: Audits

Remove or modify, as applicable: The City will audit its implementation and compliance with the provisions of this SSMP every two years in the future as suggested by the WDR. The next audit will be conducted and completed no later than January 2023 and presented to the City Council for consideration and approval after which it will be included in Appendix A and placed on the City SSMP webpage. The audit will be conducted by a team consisting of City Staff selected from the Water Quality Department. The audit team may include members from other areas of the City, outside agencies, or contractors. It is also recommended that at the same time the City conduct an audit of its SSO files to assure that that the files are complete, contain all required records as stated in the MRP and that the files contain no extraneous or conflicting documents that are not adequately reviewed and explanations provided.

The Sewer System Management Plan Audit Report Form (Table X-1) is used to guide the audit process and includes the GWDR requirements for each SSMP element. The results of the audit, including the identification of any deficiencies and the steps taken or planned to correct them will be included in an Audit Report. Upon completion of the audit, the City will include a copy of the report in Appendix A, Sewer System Annual Audit Reports of this SSMP. Modifications and changes to the SSMP will be identified and tracked in Appendix B, SSMP Change Log.

The audit should contain information about successes in implementing the most recent version of the SSMP and identify revisions that may be needed for a more effective program. Information collected can be used in preparing the audit. Tables and figures or charts can be used to summarize information about these indicators. An explanation of the SSMP development, and accomplishments in improving the sewer system, should be included in the audit, including:

- How the sewer system agency implemented SSMP elements in the past year;
- The effectiveness of implementing SSMP elements;
- A description of the additions and improvements made to the sanitary sewer collection system in the past reporting year; and

- A description of the additions and improvements planned for the upcoming reporting year with an estimated schedule for implementation.

X.2: SSMP Updates

The City will recertify its SSMP at least every five years from City Council adoption and approval or when substantial changes are made in the SSMP. The City will determine the need to update its SSMP more frequently based on the results of the audits and the performance of its wastewater collection system using information from the Monitoring and Measuring Program. In the event that the City decides that an update is warranted, the process to complete the update will be identified. The City will complete the update and take the revisions to the City Council within one year of identifying the need for the update.

Table X – 1: SSMP Audit Checklist

City of Laguna Beach
SSMP Audit Checklist
Report Form

The purpose of the SSMP Audit is to evaluate the effectiveness of the City of Laguna Beach's SSMP and to identify any needs for improvement. The information identified here will be used to inform the findings and necessary information to be evaluated during the biannual Internal Audit of the City SSMP.

Directions: Please rank each item below utilizing the following sufficiency ranking system and add any comments to explain the ranking to the Comment Section of each SSMP Element:

- *Complies (C) – complies with all WDR objectives*
- *Substantially Complies (SC) – complies mostly with all WDR objectives*
- *Partially Complies (PC) – complies with basic WDR objectives*
- *Marginal Compliance (MC) – complies minimally with basic objectives of the WDR*
- *Does Not Comply – does not comply with WDR objectives*

Element 0 – Introduction/Executive Summary	
A.	
B.	
C.	
D.	
Element I – Goals	**Rating**
A. Are the goals stated in the SSMP still appropriate and accurate?	
Discussion:	
Element II – Organization	**Rating**
A. Is the List of City Staff Responsible for SSMP Elements current?	
B. Is the Sanitary Sewer Overflow Responder List current?	
C. Is the City Organization Chart current?	

D. Are the Staff position descriptions an accurate portrayal of staff responsibilities?	
E. Is the Chain of Communication for Reporting and Responding to SSOs section/flow chart accurate and up-to-date?	
Discussion:	

Element III – Legal Authority	**Rating**
Does the SSMP contain current references to the Laguna Beach Municipal Code documenting the City's legal authority to:	
A. Prevent illicit discharges?	
B. Require proper design and construction of sewers and connections?	
C. Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City?	
D. Limit discharges of fats, oils, and grease?	
E. Enforce any violation of its sewer ordinances?	
F. Were any changes or modifications made in the past year to City Sewer Ordinances, Regulations, or standards?	
Discussion:	

Element IV – Operations & Maintenance	
Collection System Maps	**Rating**
A. Does the SSMP reference the current process and procedures for maintaining the City's wastewater collection system maps?	
B. Are the City's wastewater collection system maps complete, current, and sufficiently detailed?	
C. Are storm drainage facilities identified on the collection system maps? If not, are SSO responders able to determine locations of storm drainage inlets and pipes for possible discharge to waters of the state?	
Prioritized Preventive Maintenance	**Rating**
D. Does the SSMO describe current preventive maintenance activities and the system for prioritizing the cleaning of sewers?	

E. Based upon information in the Annual SSO Report, are the City's preventive maintenance activities sufficient and effective in minimizing SSOs and blockages?	
Scheduled Inspections and Condition Assessments	**Rating**
F. Is there an ongoing condition assessment program sufficient to develop a capital improvement plan addressing the proper management and protection of infrastructure assets? Are the current components of this program documented in the SSMP?	
Contingency Equipment and Replacement Inventory	**Rating**
G. Does the SSMP list the major equipment currently used in the operation and maintenance of the collection system and documents the procedures of inventory management?	
H. Are contingency and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?	
Training	**Rating**
I. Does the SSMP document current training expectations and programs?	
Outreach to Plumbers and Building Contractors	**Rating**
J. Does the SSMP document currently outreach efforts to plumbers and building contractors?	
Discussion:	
Element V – Design and Performance Standards	**Rating**
A. Does the SSMP reference current design and construction standards for the installation for new sanitary sewer systems, pump stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?	
B. Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines?	

Discussion:	
Element VI – Overflow and Emergency Response Plan	**Rating**
A. Does the City's Sanitary Sewer Overflow Emergency Response Plan establish procedures for the emergency response, notification, and reporting of SSOs?	
B. Is City staff and contractor personnel appropriately trained on the procedures of the Sanitary Sewer Overflow Emergency Response Plan?	
C. Considering SSO performance data, is the Sanitary Sewer Overflow Emergency Response Plan effective in handling SSOs in order to safeguard public health and the environment?	
D. Are all SSO and claims reporting forms current or do they require revisions or additions?	
E. Does all SSO event recordkeeping meet the SSS GWDR requirements? Are all SSO event files complete and certified in the CIWQS system?	
F. Is all information in the CIWQS system current and correct? Have periodic reviews of the data been made during the year to assure compliance with SSS GWDR? Have all Technical Report and Water Quality Sampling requirements been met and uploaded to the CIWQS data management system?	
Discussion:	
Element VII – Fats, Oils and Grease (FOG) Control Program	**Rating**
A. Does the FOG Control Program include efforts to educate the public on proper handling and disposal of FOG?	
B. Does the FOG Control Program identify sections of the collection system subject to FOG blockages, establish a cleaning schedule, and address source control measures to minimize these blockages?	
C. Are requirements for grease removal devices, best management practices (BMP), record keeping, and reporting established in the City's FOG Control Program?	

D. Does the City have sufficient legal authority to implement and enforce the FOG Control Program?	
E. Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system?	
F. Was required training on SSMP and OERP completed and documented? Were field exercises with field staff on SSO volume estimation conducted and documented?	
G. Did all public improvement plans and specifications that could impact collection system operations include requirements for OERP training or were contractor OERP programs at least as stringent as the City OERP? Were regular items included in project meeting agendas to discuss emergency response procedures and communications?	
Discussion:	

Element VIII – System Evaluation and Capacity Assurance Plan	**Rating**
A. Does the City of Laguna Beach Sanitary Sewer Master Plan evaluate hydraulic deficiencies in the system, establish sufficient design criteria, and recommend both short and long-term capacity enhancement and improvement projects?	
B. Does the City's Capital Improvement Plan (CIP) establish a schedule of approximate completion dates for both short and long-term capacity improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity completed?	
Discussion:	

Element IX – Monitoring, Measurement and Program Modifications	**Rating**
A. Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?	
B. Is the City able to sufficiently evaluate the effectiveness of the SSMP elements based on relevant information?	
C. Do the performance metrics properly support the Goals in Element 1?	

Discussion:	
Element X – SSMP Audits	**Rating**
A. Will the SSMP Audit be completed, reviewed, and filed in Appendix B?	
B. Was the final Audit Report presented to the governing body at a publicly noticed meeting?	
Discussion:	

Element XI – Community Program	**Rating**
A. Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and continue to address any feedback?	
B. Did the City Council receive and review the Annual Sewer System Report?	
Was the annual report uploaded to the City Sewer Section website and added to Appendix C?	
C. Did City staff conduct and document meetings with satellite collection systems?	
D. Are all agreements with satellite systems current or are changes necessary to these agreements?	
Discussion:	

Change Log	**Rating**
A. Is the SSMP Change Log current and up to date?	
Discussion:	

Audit Team:		**Date:**	
Prepared By:		**Date:**	
Reviewed By:		**Date:**	
Certified By:		**Date:**	
	Approved for Filing On	**Date:**	

Element XI: Communication Program

SWRCB Waste Discharge Requirement:

The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its Sewer System Management Plan (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.

XI.1: Communication during SSMP Development and Implementation

The City, at least annually, communicates with the City Council at public meetings that allow for input from the public about the implementation and results of the collection system operations. The City initiated a sewer lateral inspection and replacement program that required substantial public education and outreach. This program is intended to reduce infiltration and inflow and reduce the treatment related expenses at the SOCWA plant.

The City has developed a private lateral maintenance webpage and Reference Guide to Maintenance Measures that Property Owners Need to Know that clearly defines the property owners' responsibilities for the ownership, maintenance, and replacement of the private lateral. In addition, as the main lines are televised if problems are seen in the lateral such as roots and grease, letters are sent to the property owner recommending necessary actions and potential assistance with the problem.

Other information provided upon request to interested parties includes: a copy of completed sections of the SSMP, brochures and materials regarding collection system operations and maintenance, and contact information and/or opportunities for input into the development and implementation process.

The City provides information for customers regarding plumbers available to assist with the maintenance of the private sewer facilities. In addition, the City had developed a Plumbers Hot Line that allows plumbers to contact the City prior to the maintenance of a private sewer lateral to assist with the disposal of all debris, roots, and grease from the lateral cleaning operation at the next closest manhole downstream of the private lateral. This program protects the main line sewer system from the disposal of lateral debris that could cause blockages or overflows in the collection system downstream of the lateral maintenance.

XI.2: Communicating Sanitary Sewer System Performance

Council annually at a regularly scheduled meeting receives collection system performance information that is included in the minutes of that public meeting. The performance information will include the performance measures listed in Element IX: Monitoring, Measurement, and Program Modifications and will be compiled in an annual collection system performance report.

XI.3: Communication with Satellite Wastewater Collection Systems

The City has one small agency that discharge to the City collection system. This system is the Emerald Bay Services District. The system contains 6.7 mile of pipes and therefore is a satellite agency to the District as defined by the WDR. The City works with the District to develop regular communications with Emerald Bay to assure that that system does not produce any sewage or debris that could be detrimental to the City collection system operations or the treatment plant. They both also participate in the SOCWA Sewer Committee related to the treatment and disposal of sewage from these two agencies.

Appendices

Appendix A: Sewer System Management Plan Audit Reports

Appendix B: Log of Sewer System Management Plan Changes

Log of SSMP Changes

Date	SSMP Element #	Description of Change/Revision Made	Person Authorizing Change
5/12/23	Update	Receipt of Preliminary Final SERP documents from Causey Consulting, LLC	David Shissler

Appendix C: Sewer System Management Plan Council Adoption Documents

RESOLUTION NO. 15.003

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LAGUNA BEACH CALIFORNIA ADOPTING THE CITY OF LAGUNA BEACH 2015 SEWER SYSTEM MANAGEMENT PLAN PER THE STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENT

WHEREAS, The City of Laguna Beach owns and operates a sanitary sewer collection system serving a population of approximately 22,700 customers in a 8.7 square miles service area that consists of 85.71 miles of gravity sewers, 2,674 manholes, 9.44 miles of force mains, and 25 lift stations; and

WHEREAS, the State Water Resources Control Board (SWRCB) adopted Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (GWDR), in May 2006; and,

WHEREAS, all federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California and are not otherwise discharging pursuant to their own separate waste discharge requirements or under a National Pollutant Discharge Elimination System ("NPDES") permit, are required to comply with the terms of this Order; and,

WHEREAS, the GWDR of the Order requires the City to develop and adopt a Sewer System Management Plan (SSMP) with the purpose of providing proper and efficient management, operation, and maintenance of the City's sanitary sewer system in order to minimize the number and impact of sanitary sewer overflows throughout the State; and,

WHEREAS, the SSMP shall be updated every five years, must include any significant program changes and be approved at a public meeting by the City Council; and

WHEREAS, the City has updated its SSMP, which updated SSMP remains subject to the City Council's review and approval; and

WHEREAS, the City's updated SSMP is in compliance with the requirements set forth in the GWDR and is ready for adoption and certification; and

-1-

WHEREAS, the City Council was presented with the updated SSMP at a public meeting on January 20, 2015.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Laguna Beach approves the adoption and certification of the City of Laguna Beach Sewer System Management Plan dated January 2015.

ADOPTED this 20th day of January 2015,

Robert Whalen, Mayor

ATTEST:

City Clerk

I, LISETTE CHEL-WALKER, City Clerk of the City of Laguna Beach, California, do hereby certify that the foregoing **Resolution No. 15.003** was duly adopted at a Regular Meeting of the City Council of said City held on January 20, 2015 by the following vote:

AYES: COUNCILMEMBER(S): Boyd, Iseman, Zur Schmiede, Dicterow, Whalen

NOES: COUNCILMEMBER(S): None

ABSENT: COUNCILMEMBER(S): None

City Clerk of the City of Laguna Beach, CA

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RESOLUTION NO. 21.051

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LAGUNA BEACH ADOPTING THE CITY OF LAGUNA BEACH 2021 SEWER SYSTEM MANAGEMENT PLAN PURSUANT TO THE STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS

WHEREAS, the City of Laguna Beach owns and operates a sanitary sewer collection system serving a population of approximately 22,723 customers in a 8.7 square mile service area that consists of 97 miles of gravity sewers, 2,937 manholes, 7 miles of force mains, and 25 lift stations; and

WHEREAS, the State Water Resources Control Board (SWRCB) adopted Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (GWDR), in May 2006, and Order No. WQ-2008-0002-EXEC, dated February 20, 2008, which was amended by Order No. 2013-0058-EXEC, effective September 9, 2013 (collectively, the Order); and

WHEREAS, all federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California and are not otherwise discharging pursuant to their own separate waste discharge requirements or under a National Pollutant Discharge Elimination System (NPDES) permit, are required to comply with the terms of the Order; and

WHEREAS, the GWDR of the Order requires the City to develop and adopt a Sewer System Management Plan (SSMP) for the purpose of providing proper and efficient management, operation, and maintenance of the City's sanitary sewer system in order to minimize the number and impact of sanitary sewer overflows throughout the State; and

WHEREAS, the City's SSMP is required to be updated every five years, must include any significant program changes and be approved at a public meeting by the City Council; and

WHEREAS, the City has updated its SSMP, which remains subject to the City Council's review and approval; and

WHEREAS, the City's updated SSMP is in compliance with the requirements set forth in

the GWDR and is ready for adoption and certification; and

WHEREAS, the City Council was presented with and reviewed the updated SSMP at a public meeting held on June 29, 2021.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LAGUNA BEACH, DOES HEREBY RESOLVE to adopt the City of Laguna Beach 2021 Sewer System Management Plan attached hereto as Exhibit A and incorporated herein by this reference.

ADOPTED this 29th day of June, 2021.

Bob Whalen, Mayor

ATTEST:

Ann Marie McKay, City Clerk

I, ANN MARIE MCKAY, City Clerk of the City of Laguna Beach, certify that the foregoing **Resolution No. 21.051** was duly adopted at a regular meeting of the City Council of said City held on June 29, 2021 by the following vote:

AYES:	COUNCILMEMBERS:	Blake, Iseman, Weiss, Kempf, Whalen
NOES:	COUNCILMEMBERS:	None
ABSTAIN:	COUNCILMEMBERS:	None
ABSENT:	COUNCILMEMBERS:	None

Ann Marie McKay, City Clerk

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Appendix D: Overflow Emergency Response Plan

Appendix D_REVISED_FINAL D

Appendix D_REVISED_FINAL DRAFT_SERP_5-3-23.pdf

Appendix D-1 SERP Workbook_FINAL DI

Appendix D-1 SERP Workbook_FINAL DRAFT_5-3-23.pdf

Appendix E: Biological Resources Damage Assessment SOP

South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

SOP
Biological Resources Damage Assessment For Treated and Untreated Wastewater Spills

April 2017

Prepared by

DentonMudry
Environmental & GIS Services, LLC
Laguna Niguel, CA
949-315-9322

Contact: Jim Burror,
Director of Operations,
SOCWA

CONTENTS

SOP
Biological Resources Damage Assessment
For
Treated and Untreated Wastewater Spills

1.0 INTRODUCTION

South Orange County Wastewater Authority (SOCWA) owns and operates facilities under four NPDES permits issued by the Regional Water Quality Control Board (RWQCB) San Diego Region: R9-2012-0012 and R9-2012-0013 for facilities utilizing the San Juan Creek and Aliso Creek ocean outfalls, respectively. The NPDES permits require reporting of any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater. Overflows include:

- Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;
- Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
- Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly/federally-owned portion of a sanitary sewer system.

Spills are reported to the California Office of Emergency Services, RWQCB San Diego Region, and the Orange County Health Department via the California Integrated Water Quality System (CIWQS) electronic reporting system. If the spill reaches a drainage with biological resources the RWQCB, in cooperation with the California Department of Fish and Wildlife (CDFW), may request that a Biological Resources Damage Assessment be prepared to document impacts to biological resources.

The purpose of this Standard Operating Procedure (SOP) is to provide SOCWA with guidance for conducting a Biological Resources Damage Assessment whenever a spill from a SOCWA owned or operated facility has reached a drainage with biological resources.

2.0 FACILITIES AND POTENTIAL IMPACT AREAS FOR BIOLOGICAL RESOURCES[1]

SOCWA's service area encompasses the Aliso Creek and San Juan Creek watersheds. and includes the following facilities that could be the source of reportable spills. SOCWA facilities, potential spill materials, and potential watershed impact areas are summarized in Table 1, below.

The location of SOCWA facilities and ease of spills to impact biological resources is highly variable. Least likely to impact biological resources are those facilities that not adjacent to biological resources or are isolated in some way from those resources, such as the Jay B. Latham (JBL) Treatment Plant. JBL is isolated from San Juan Creek by the flood control berm and the surrounding area is highly urbanized with little or poor quality habitat and limited biological resources. In addition, San Juan Creek is concrete lined, offering little in the way of habitat or non-marine biological resources that could be damaged by a spill. The Regional Treatment Plant (RTP) and the Coastal Treatment Plant (CTP), in contrast, are surrounded by

[1] SOCWA Strategic Plan 2015

and adjacent to biological resources with few barriers preventing direct flow of spills that could impact these resources. Similar comparisons can be made for the linear facilities: the San Clemente Land Outfall is primarily located in urban areas, whereas the CTP Sludge Force Main and Effluent Transmission Main (Reach B/C/D) are almost entirely located within and adjacent to high quality biological habitat. Table 1 provides a summary of the likely spill material and the watershed potentially impacted by spills from each SOCWA facility.

Table 1. SOCWA Facilities, Potential Spill Materials, and Potential Watershed Areas Impacted

SOCWA Facility	Spill Material	Watershed Impacted
San Juan Creek Watershed		
Jay B. Latham Treatment Plant (JBL)	Raw sewage, treated and partially treated wastewater	San Juan Creek
3A Treatment Plant	Raw sewage, treated and partially treated wastewater	Oso Creek
3A Effluent Transmission Main	Treated wastewater	Oso Creek, San Juan Creek
San Clemente Land Outfall	Treated wastewater	San Juan Creek
San Juan Creek Ocean Outfall (Landside)	Treated wastewater	San Juan Creek
Aliso Creek Watershed		
Regional Treatment Plant (RTP)	Raw sewage, treated and partially treated wastewater	Sulphur Creek, Sulphur Reservoir, Aliso Creek
Coastal Treatment Plant (CTP)	Raw sewage, treated and partially treated wastewater	Aliso Creek
Effluent Transmission Main (Reach B/C/D)	Treated wastewater	Aliso Creek
Effluent Transmission Main (Reach E)	Treated wastewater	Sulphur Creek, Sulphur Reservoir, Aliso Creek
North Coast Interceptor (NCI)	Raw sewage	Aliso Creek
Aliso Creek Ocean Outfall (Landside)	Treated wastewater	Aliso Creek
CTP Sludge Force Main (to RTP)	Sludge	Aliso Creek, Sulphur Creek, Sulphur Reservoir

3.0 IMPACT ASSESSMENT METHODS

There are no specific guidance documents or established protocols for conducting an assessment of damage to biological resources resulting from a sewage or treated wastewater spill to a drainage. As noted above, the RWQCB or CDFW may request that a Biological Resources Damage Assessment be prepared and their request may include specific parameters that should be included in the assessment and report. Any delay in conducting the field assessment following a reported spill may not clearly identify the impact area or fully capture the potential biological impacts of the spill. Therefore, the following impact assessment methods outlined below are intended to provide SOCWA with a methodology that can be immediately implemented to collect useful data for assessing potential damage to biological resources while awaiting direction from the RWQCB or CDFW.

3.1 Delineation of Potential Impact Area

A reconnaissance survey should be conducted as soon as possible after discovery of the spill to locate the probable extent of the impact area and select impacted drainage locations or habitat types for detailed study. Based on the description and volume of material released to the impacted drainage, the reconnaissance survey should include examination of the bank, riparian vegetation, and water interface for signs of impact indicators (collected debris, vegetation or soil impacted by the release) and presence of visible pollutants, odors, or other indications of impacts. The reconnaissance survey needs to:

- Delineate the maximum area and downstream extent of the suspected impact area.
- Identify sample sites within the impact area that are representative of the habitats and vegetation in the impact area.
- Identify one or more control sites (usually upstream of the spill site) that have not been impacted and may be used for comparison with the suspected impact area.
- Relative conditions of the impact area at the time of the survey for comparison with the conditions noted at the time of the release (i.e., rainfall, stream flow, etc.).

The number of impact sample sites for detailed study is variable, depending on the drainage area/length impacted and types of habitat impacted. Three impact sample sites plus one control site would likely be the minimum needed to provide a reasonable estimate of the potential impacts.

3.2 Background Data Collection

Damage assessment to biological resources from a spill needs to consider both impacts to vegetation communities (habitat) as well as to protected or sensitive plant and animal species. Once the extent of the spill has been determined by the reconnaissance survey it is very important to complete a rapid review of available information on the impact area to determine what sensitive biological resources may be present and need special attention during the site surveys. Knowledge of the protected and sensitive biological resources of the impact area will help focus the site surveys and will provide important supporting information for any conclusions or recommendations included in the damage assessment report.

Sensitive plants include those listed, or candidates for listing, by the U.S. Fish and Wildlife Service (USFWS) and CDFW, species considered sensitive by the California Native Plant Society (CNPS), and species of local interest. Sensitive wildlife species include those species listed as endangered or threatened, candidates for listing by USFWS or CDFW, and species of special concern to USFWS or CDFW.

3.3 Site Inspection Methods

Spills from SOCWA facilities that enter drainage systems are likely to be either very obvious, in the case of spilled raw sewage or sludge, or difficult to detect, as in the case of spilled treated or partially treated wastewater. Determination of damage to biological resources from a spill is likewise highly dependent on the type or concentration of spilled material as well as the type and condition of the receiving waters. Spills to standing water or slow flowing streams may have very different consequences than spills that occur during heavy rainfall or high stream flow conditions. Site inspection methods will need to be adjusted to the specific spill and environmental conditions. Following a consistent data collection checklist at each sample or control site will help to provide comparable information useful for assessing potential damage.

Depending on the drainage characteristics and ease with which the spill can be detected, the sample and control sites may consist of a transect or plot within which the observations can be made. Transects may be "top of bank" from one side of the stream to the other. Plots may be a length of stream (20 m, for example) from the wetted surface up to the top of bank. In either case transects or plots should be selected to be representative of the vegetation within the spill impact area.

Table 2, below, provides a list of suggested data points that may be used to develop and describe the characteristics of the sample and control locations (see Appendix A for sample field data sheet). Direct observations of spill constituents and associated damage is possible and should be noted, but it is also important to record receiving water characteristics, presence or absence of sensitive species, animal behavior, and similar data points that may be useful in determining or describing spill damage to biological resources.

Table 2
Data Useful for Determining Potential Impacts to Biological Resources

Gross estimation of pollutants
- Visible pollutants
- Unusual Odor
- Organic matter
- Surface film or foam
- Water clarity
- Algae growth/bloom
- Other indications of residual spill

Vegetation
- Estimated percent coverage of rooted plants
- Vegetative class
- Vegetative type
- Species composition
- Discoloration or stress

Substrate
- Estimated percent composition of stream substrate type (sand, gravel, cobble)

Flow
- Stream flow, if available
- Estimated flow

Channel
- Bank to bank width
- Wetted channel width
- Average stream channel depth

Animals (Use a uniform observation time at each site, 10 minutes for example)
- Insects
- Fish
- Reptiles, Amphibians
- Birds
- Mammals
- Species observed; Activity observed
- Mortality

Human Development or Influence (concrete channels, construction activity, etc.)
Photographs

3.4 Special Conditions

Sulphur Reservoir is an OCParks facility used for recreational fishing where fish caught in the reservoir are allowed to be kept and consumed. The proximity of the reservoir to SOCWA facilities indicates there is a potential for contamination of the reservoir by spills from the RTP, or from breaks or leaks from the CTP sludge force main or the RTP effluent pipeline. Whenever spills are detected that have entered the drainage system leading to the reservoir, water quality samples, including coliform counts, should be collected of the spilled water and receiving water upstream and downstream of the spill site. Water samples should also be collected in the reservoir following the spill and as long as necessary to support any conclusions regarding the safety of fish being consumed.

4.0 BIOLOGICAL RESOURCE DAMAGE ASSESSMENT REPORT OUTLINE

The Biological Damage Assessment Report may be a file report to document the spill event, or it may be requested by the RWQCB and/or the CDFW to support the CIWQS Online SSO Database documentation. In either case, Table 3 provides a suggested outline for the Biological Damage Assessment Report:

Table 3
SAMPLE TABLE OF CONTENTS

Appendix A
Sample Field Data Sheet

Site ID_____ Time_____ Date_____ Observer _____

Gross estimation of pollutants	Present	Notes
Visible pollutants		
Unusual Odor		
Organic matter		
Surface film		
Water clarity		
Algae growth/bloom		
Other indications of residual spill		
Drainage Description		
Dry when observed		
Marsh, pond, still water		
Flowing water		
Vegetation		
Ground cover: bare, leaf litter, grasses, etc.		
Estimated % coverage of rooted plants		
Vegetative type(s)		
Species composition		
Discoloration or stress		
Substrate		
Est. % substrate type (sand, gravel, cobble)		
Stream Flow		
Measured stream flow, if available		
Estimated flow		
Channel		
Bank to bank width at high water mark		
Wetted channel width		
Average stream channel depth		
Human Development or Influence		
Animals		
Insects		
Fish		
Reptiles, Amphibians		
Birds		
Mammals		
Species observed (attach list)		
Activity observed (Note 1)		
Mortality		
Photographs		

Notes: 1. Use a uniform observation time at each site, 10 minutes for example

Appendix F: SOCWA Sewer Spill Emergency Response

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Spill Response Plan

Administrative Offices:
34156 Del Obispo,
Dana Point,
CA 92629
Phone 949.234.5400 • Fax 949.489.0130

Revised June 2022

TABLE OF CONTENTS

1.0 Purpose

The South Orange County Wastewater Authority (SOCWA) has developed the Spill Response Plan (SRP) to ensure the protection of the environment and the public's health and safety; to comply with its NPDES permit, and California Water Code requirements. This document replaces the previous SRP, approved in February 2003. This document will provide the necessary guidelines for SOCWA staff to respond to a spill event at any of the SOCWA operated facilities.