

**CITY OF SEAL BEACH**

**SANITARY SEWER EMERGENCY  
OVERFLOW RESPONSE PLAN  
2018**



Submitted to  
City of Seal Beach  
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Submitted by  
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Date of Signing 2/20/18



Date of Signing: 2/20/18



Date of Signing: 2/20/18

**CITY OF SEAL BEACH  
SANITARY SEWER OVERFLOW  
EMERGENCY RESPONSE PLAN**

**Introduction**

This Sanitary Sewer Overflow Emergency Response Plan (SSOERP) has been prepared to provide the City of Seal Beach with the tools and procedures for responding to overflows efficiently and effectively, and protecting public health and the environment.

It complies with the State Waste Discharge Requirements, Order No. 2006-0003 and the Amending Monitoring and Reporting Program, Order No. WQ 2013-0058, issued by the State Water Resources Control Board.

**Certification Date:**                    **February 2018**

**Revision 1 Date:**                    \_\_\_\_\_

**Revision 2 Date:**                    \_\_\_\_\_

**Revision 3 Date:**                    \_\_\_\_\_

**Revision 4 Date:**                    \_\_\_\_\_

**CITY OF SEAL BEACH  
SANITARY SEWER OVERFLOW  
EMERGENCY RESPONSE PLAN**

**Certification**

I certify under penalty of law that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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Michael Ho  
Deputy Director of Public Works and City Engineer  
City of Seal Beach

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Date

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## SECTION 1 AUTHORITY

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The authority and responsibility for a sanitary sewer overflow emergency response plan (SSOERP) are contained in at least six (6) documents:

### 1-1 CLEAN WATER ACT

Section 301 of the Clean Water Act prohibits discharges of any wastewater to the waters of the United States.

### 1-2 CALIFORNIA WATER CODE

Sections 13260 and 13376 of the California Water Code prohibits discharges of any wastewater to surface waters of the State.

### 1-3 STATE WATER RESOURCES CONTROL BOARD (SWRCB), ORDER NO. 2006-0003, GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

Section D.13.(vi) of the Order requires the development and implementation of an overflow emergency response plan. The requirements of the order include the following:

*D.13(vi) **Overflow Emergency Response Plan** - 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 (Sanitary Sewer Overflows) 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 (Monitoring and Reporting Program), the California Water Code, other State Law, and other applicable Regional Water Board WDRs (Waste Discharge Requirements) or NPDES (National Pollution Discharge Elimination Systems) permit requirements. The SSMP should identify the officials who will receive immediate notification;*
- (d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;*
- (e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; 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.*

### 1-4 STATE WATER RESOURCES CONTROL BOARD (SWRCB), ORDER NO. WQ2013-0058-EXEC, AMENDING MONITORING AND REPORTING PROGRAM FOR STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

The amendment states that the online sanitary sewer overflow reporting procedures were updated as follows:

*In the February 28, 2008 Memorandum of Agreement between the State Water Board and the California Water and Environment Association (CWEA), the State Water Board committed to redesigning the CIWQS3 Online SSO Database to allow "event" based SSO reporting versus the original "location" based reporting. Revisions to this MRP and accompanying changes to the CIWQS Online SSO Database will implement this change by*

allowing for multiple SSO appearance points to be associated with each SSO event caused by a single asset failure.

## 1-5 CITY OF SEAL BEACH MUNICIPAL CODE CHAPTER 9.20, MUNICIPAL STORM WATER MANAGEMENT PROGRAM

**Section 9.20.005** defines prohibited discharge as:

*“any discharge that contains any pollutant, from public or private property to the storm water drainage system; any upstream flow, which is tributary to the storm water drainage system; any groundwater, river, stream, creek, wash or dry weather arroyo, wetlands area, marsh, coastal slough, or any coastal harbor, bay, or the Pacific Ocean”*

**Section 9.20.010 (A.2)** states:

*“No person shall cause, allow, or facilitate any prohibited discharge.”*

**Section 9.20.010 (A.3)** states:

*“No person shall act, cause, permit or suffer any agent, employee, or independent contractor, to construct, maintain, operate or utilize any illicit connection, or cause, allow or facilitate any prohibited discharge.”*

**Section 9.20.010 (D)** states:

*“If an authorized inspector reasonably determines that a discharge, which is otherwise within the discharge exception, may adversely affect the beneficial uses of receiving waters, then the authorized inspector may give written notice to the owner of the property or facility that the discharge exception shall not apply to the subject discharge following expiration of the 30-day period commencing upon delivery of the notice. Upon expiration of the 30-day period any such discharge shall constitute a violation.”*

## 1-6 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

In California, the NPDES Permit program is regulated by the nine (9) Regional Water Quality Control Boards to regulate the discharge of pollutants into the waters of the United States. The City of Seal Beach (City) operates under the NPDES Permit # CAS618030, the Municipal Separate Stormwater Sewer Systems (MS4) permit for Orange County.

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## SECTION 2 OVERVIEW

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### 2-1 BACKGROUND

The City of Seal Beach owns and operates a sewage collection system consisting of

- 181,300 feet (34.3 miles) of gravity sewers ranging in size from 6 inches to 24 inches
- 7,820 feet (1.5 miles) of force main ranging in size from 2 inches to 16 inches
- 7 pump stations
- 810 manholes and cleanouts

An overview of the City's sewer collection system is shown on Figure 2-1. Appendix A details the City's sewer system as well as the storm water facilities for the City and Orange County Public Works.

### 2-2 PREVIOUS STUDIES

#### Sanitary Sewer Overflow Emergency Response Plan (2003)

The previous Sewer Overflow Emergency Response Plan was prepared by the City in September 2003 to document the procedures for responding to a sanitary sewer overflow including the following:

- Notification Procedures
- Containment Procedures
- Clean-Up Procedures
- Correction Procedures
- Private Spill Response Procedures
- Spill Report

#### Sewer System Master Plan Update (2005)

The Sewer System Master Plan Update was prepared for the City by AKM Consulting Engineers in 2005 as an update to the report prepared in 1999. The scope of work for the master plan included the capacity assessment of the gravity system. A hydraulic model of the City's sewer system was developed and analyses were run to identify sewers with calculated hydraulic deficiencies. The City then developed a long-term Capital Improvement Program (CIP). The City generally performs a hydraulic analysis of its system and report every five to ten years.

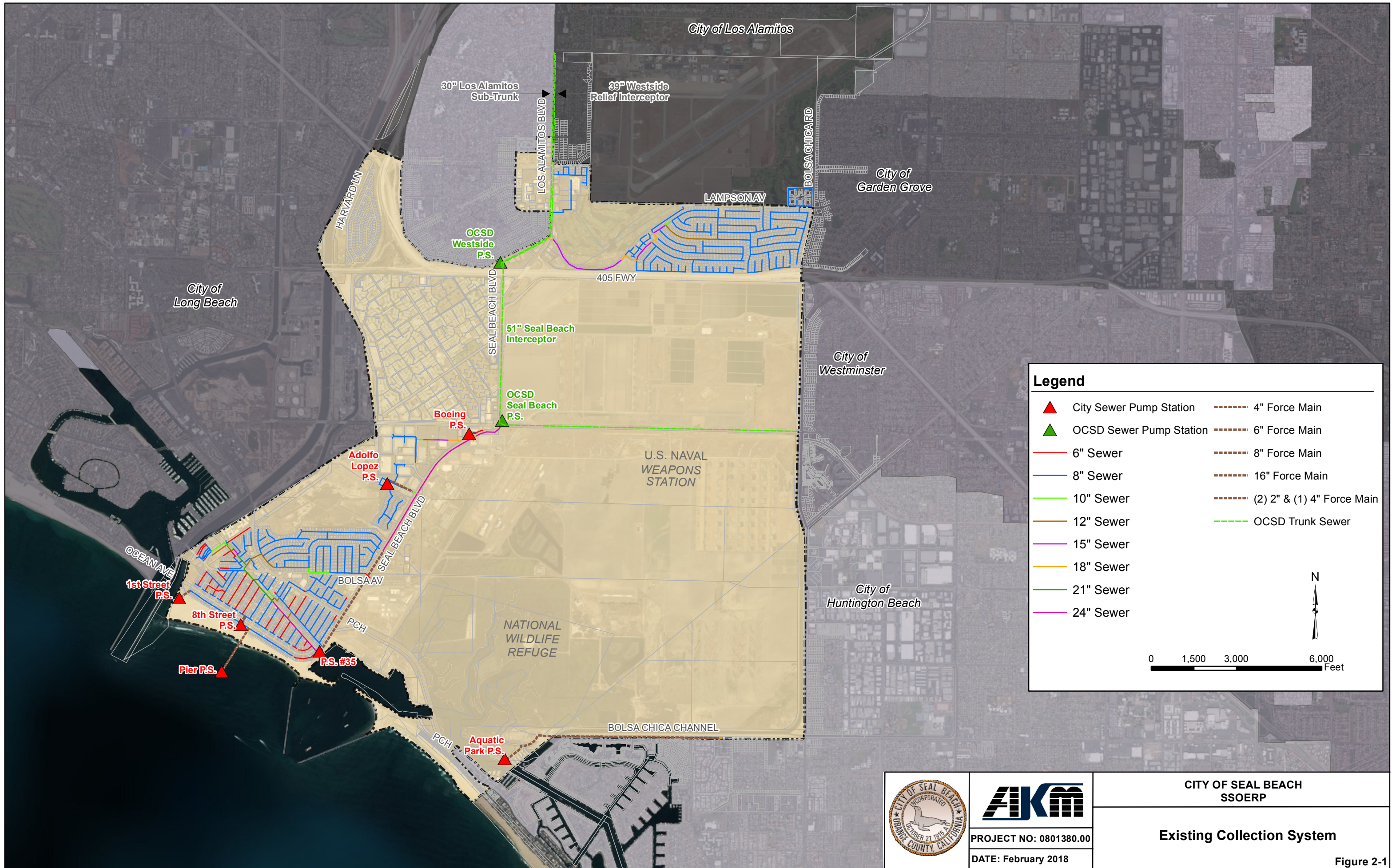
The Sewer System Master Plan include the condition assessment of the City's sewer system. CCTV inspections are conducted periodically as required by the Waste Discharge Requirements (WDR). The inspection data is reviewed to assess the conditions of the sewers. The CCTV inspections and condition assessment was initially documented in the Sewer Master Plan, completed in 2005. The City completed another series of CCTV inspections in 2013.

Concurrent to this Sanitary Sewer Overflow Emergency Response Plan (SSOERP), the City is updating its Sewer Master Plan and Sewer System Management Plan (SSMP), which covers the capacity and condition assessment requirements of the WDR.

#### Sewer System Management Plan Audit (2016)

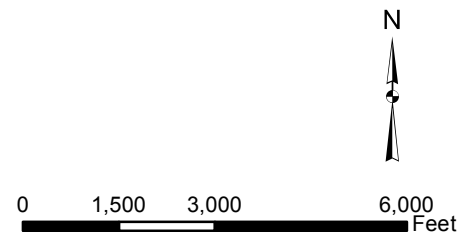
As required by Order 2006-0003-DWQ, the City has performed biennial Sewer System Management Plan (SSMP) Audit to evaluate the effectiveness of its existing SSMP document. The audit was last performed in 2016, and it includes the recommendation for the City to create a comprehensive Sanitary Sewer Emergency Overflow Response Plan (SSOERP), which will incorporate all relevant overflow response procedures into a stand-alone document.





**Legend**

- ▲ City Sewer Pump Station
- ▲ OCSD Sewer Pump Station
- 6" Sewer
- 8" Sewer
- 10" Sewer
- 12" Sewer
- 15" Sewer
- 18" Sewer
- 21" Sewer
- 24" Sewer
- - - 4" Force Main
- - - 6" Force Main
- - - 8" Force Main
- - - 16" Force Main
- - - (2) 2" & (1) 4" Force Main
- - - OCSD Trunk Sewer



**AKM**  
 PROJECT NO: 0801380.00  
 DATE: February 2018

**CITY OF SEAL BEACH  
 SSOERP**

**Existing Collection System**

Figure 2-1



### Sewer System Management Plan (2018)

The City has updated its SSMP document, which includes but is not limited to:

- Incorporation of the recommendation of the SSMP Audit 2018
- Updates to the System Evaluation and Capacity Assurance Plan
- Updates to the Sewer System Rehabilitation Plan (Comprehensive Condition Assessment of Phases 1-5)
- Updates to the Capital Improvement Plan

## 2-3 PURPOSE

The purpose of this SSOERP is to provide the City with the tools and procedures for:

- Receiving overflow reports
- Dispatching appropriate crews in a timely manner
- Responding to the overflows and minimizing their public health and environmental impacts
- Notifying appropriate authorities
- Adhering to the regulations of the State Water Resources Control Board Waste Discharge Requirements Order No. 2006-0003 and the Amending Monitoring and Reporting Program Order No. WQ 2013-0058-EXEC to reduce the possibility of enforcement action against the City.

## 2-4 OBJECTIVES

The objectives of the City's SSOERP include standardizing the following procedures:

- Receiving reports of sanitary sewer overflows and providing the information to appropriate parties for action
- Mobilizing labor, materials, tools and equipment appropriate for the nature and magnitude of the overflow
- Notification of the overflow to all appropriate agencies
- Protecting the safety of City personnel
- Containment of the overflow
- Eliminating the cause of the overflow, while protecting the sewer pipes, pump stations, and appurtenances
- Protecting public and private property
- Addressing emergency operations, such as traffic and crowd control
- Conducting clean-up of the impacted area
- Documenting the sanitary sewer overflow and the actual response activities
- Ensuring appropriate staff is knowledgeable of the SSOERP procedures, and they are appropriately trained
- Preparing reports for submittal to jurisdictional agencies and other interested parties

## 2-5 SANITARY SEWER OVERFLOW EMERGENCY RESPONSE FLOW CHART

The procedure to respond to an overflow is illustrated on Figure 2-2. The flow chart details the necessary steps to take from initial report of an overflow, to the correction procedures, to the sewage containment and clean-up activities, to the final reporting requirements.

## 2-6 ORGANIZATION OF SSOERP

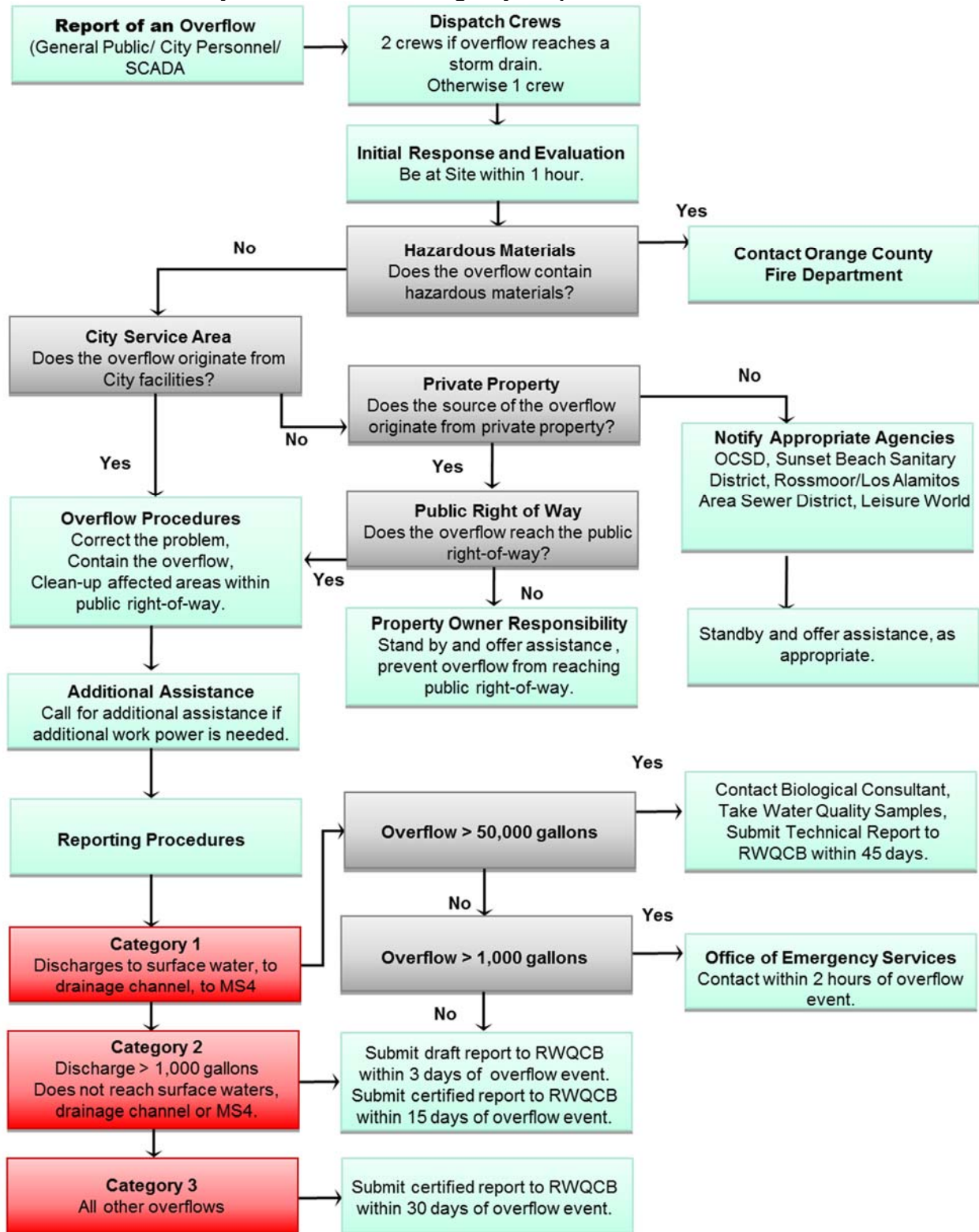
The SSOERP report includes the following:

Introduction	
Certification	
Section 1:	Authority
Section 2:	Overview
Section 3:	Initial Response Procedures
Section 4:	Notification Procedures
Section 5:	Gravity Sewer Overflow Procedures
Section 6:	Sewer Pump Station and Forcemain Overflow Procedures



Section 7: Storm Water Retarding Basin Overflow Containment Procedures  
Section 8: Reporting Procedures  
Section 9: Emergency Operations  
Section 10: Training

**Figure 2-2  
Sanitary Sewer Overflow Emergency Response Procedure Flowchart**



**SECTION 3  
INITIAL RESPONSE PROCEDURES**

**3-1 Initial Overflow Recording Procedure**

**Receipt of Information Regarding Sanitary Sewer Overflows**

An overflow may be detected and reported by City's personnel, by others, or by the pump station alarms. Sanitary sewer overflows may be reported 24 hours a day, seven days a week. The maintenance staff are available to respond to all overflows at any hour of the day. During normal business hours, an overflow can be reported to the City's Public Works Department. To report a spill during after-hours, the public can call the Police dispatch.

<b>Business Hours</b>	<b>City of Seal Beach Public Works Dept.</b>	<b>(562) 431-2527</b>
<b>After Hours</b>	<b>Police Dispatch</b>	<b>(562) 799-4100</b>
		<b>9 – 1 – 1</b>

During business hours, all reports of sanitary sewer overflows received by the Public Works Department will be forwarded to the Maintenance Services Supervisor, Director of Public Works, and other key City staff. Table 3-1 details the information on the sanitary sewer overflow initial receipt form, that is to be recorded by the Public Works Department. It shall include but is not limited to: the time and date of the call, the caller's name, the caller's telephone number, the overflow location, general description of the problem, the time the overflow was observed by the caller, whether the overflow has entered the storm drain system, and any other observations by the caller. City maintenance field staff will be dispatched to respond to the overflow report within one hour of the report.

**Table 3-1  
Sanitary Sewer Overflow Initial Receipt Form**

<b>Date</b>	
<b>Time of Overflow Call</b>	
<b>Time Overflow Started (If known)</b>	
<b>Caller's Name</b>	
<b>Caller's Address</b>	
<b>Caller's Telephone No.</b>	
<b>Location of Overflow</b>	
<b>Has the spill reached a catch basin or is in close proximity</b>	
<b>Description of Problem</b>	
<b>Additional Information</b>	
<b>Time Maintenance Staff Called</b>	
<b>Name of Maintenance Staff Called</b>	

### 3-2 Initial Notification to City Staff

The contact information for the City's key wastewater staff is included in Table 3-2.

**Table 3-2  
Maintenance Staff Contact Information**

Name	Position	Telephone Number
Steve Myrter	Director of Public Works	(562) 431-2527 Ext. 1321
Michael Ho	Deputy Director of Public Works/City Engineer	(562) 431-2527 Ext. 1322
David Spitz	Associate Engineer	(562) 431-2527 Ext. 1331
Dave Fait	Maintenance Services Supervisor	(562) 431-2527 Ext. 1431

Upon receipt of a sanitary sewer overflow report, Public Works Department staff will fill out the initial receipt form. He/she will inform the Maintenance Services Supervisor, Director of Public Works, and responding maintenance staff of the initial report of the overflow. City staff will respond to the overflow location within 1 hour of the initial notification.

If it has been indicated that the overflow has reached the storm drain system, two crews shall be notified to respond to the overflow site.

The Maintenance Services Supervisor will be informed of the sanitary sewer overflow, and he/she will act as the Responsible Staff that is to be contacted should the responding maintenance staff experience delays or conflicts or require additional resolution toward responding to the notification.

If the Maintenance Services Supervisor is unavailable, the Director of Public Works shall act as the Responsible Staff.

**After hours**, all reports of overflows will be directed to Police Dispatch. In the event of a sanitary sewer overflow report, an operator will contact the standby maintenance staff. If the standby maintenance staff member is unresponsive, the operator will go down the maintenance staff contact list until someone from the department is informed of the overflow report.

**On-Call Personnel Mobile: (562) 577-3962**

Whether the notification of an overflow occurs during normal business hours or after hours, the City shall respond to the notification, **within one hour** of receipt of the information. He/she will then take the necessary steps to respond to the reported overflow.

### 3-3 Initial Notification of Sanitary Sewer Overflows at Pump Stations

If alarms for pump failures, power failures, high wet well level, high temperature, and/or generator failure are detected, the dialer system will notify the Police Dispatch. Dispatch will then contact the City's Maintenance Yard and the Maintenance Services Supervisor or other on-call staff.

The City shall provide adequate response to emergencies at all times. During after hours, the police dispatch will notify the standby staff of any report of a sewer overflow or station alarm. Based on the information provided, the maintenance staff will obtain the necessary equipment and work power to address each type of emergency. He/she will respond to the notification within one hour of the initial notification.

There are several maintenance staff members that live within a short distance of the City's maintenance yard. The City rotates the standby duties evenly among these staff members, who are to be available during after-hours to respond a sewer overflow report. The standby shifts are set for week-long periods.

When assigned standby duties, the maintenance staff are responsible to remain reachable by mobile phone. It is their responsibility to:

1. Verify that the assigned cell phone is functional;
2. Check the combination trucks to assure that the fuel tanks are full, all tools are present and that all equipment, including traffic control devices, are functional;
  - a. All traffic control devices installed on the truck are functional and the vehicle is safe to operate;
  - b. The service truck is stocked with the following:
    - Safety Equipment
      - Hard hats
      - Safety glasses
      - Neoprene gloves
      - Work gloves
      - Ear plugs
      - Face shields
      - Ear muffs
      - Rubber boots
      - Fall protection
      - Gas detectors
      - Caution tape
      - Traffic control devices
    - Hand Tools
      - Shovels
      - Push broom
      - Sledge hammers
      - Picking bars
      - Picking bar
      - Picks
      - Manhole hooks
      - Manhole lifter
      - Hand tools (various)
      - Pipe wrenches
      - Flashlights
      - Measuring wheel
      - Tape measures
    - Sewer Cleaning Nozzles (PSI Hydro)
      - Bull-dog rotating
      - Standard cleaning
      - Grenade bomb
      - Chisel point
    - Maps
      - Sewer System
      - Storm Drain System
    - Sand bags
    - Sewer plugs/rubber cover
    - Sanitary Sewer Overflow Emergency Response Plan (SSOERP) document
    - Camera
    - Calculators
    - Smart phones

**SECTION 4**  
**NOTIFICATIONS PROCEDURE**

**4-1 State of California Water Resources Control Board (SWRCB) Order No. WQ 2013-0058-EXEC**

SCWRCB identify sanitary sewer overflows by the following categorization:

**Table 4-1**  
**SWRCB Notification and Reporting Summary**

Type of Spill	Initial Notification Timeframe*	Agency to Notify by Phone	Report Timeframe
<p><b>Category 1</b> – Discharges of untreated or partially treated wastewater resulting from an enrollee’s sanitary sewer system failure or flow condition that:</p> <p>A. Reach surface water and/or reach a drainage channel tributary to a surface water; or</p> <p>B. Reach a municipal separate storm sewer system (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the municipal separate storm sewer system is considered to have reached surface water unless the storm drain system discharges to a dedicated <b>Greater than or equal to 1,000 gallons</b>, notify the OES and obtain a notification control number.</p>	As soon as practical within 2 hours of becoming aware	<p>Cal OES<sup>1</sup></p> <p>OCHCA<sup>2</sup></p> <p>OC Public Works<sup>3</sup> and City</p>	<p>- Submit Draft report within 3 business days of becoming aware of the SSO.</p> <p>- Certify within 15 calendar days of SSO end date. SSO Technical Report:</p> <p>- Certify within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater is spilled to surface waters.</p>
<b>Category 1 – any volume &lt; 1000 gallons</b>	As soon as practical	OCHCA <sup>2</sup>	
<p><b>Category 2</b> – Discharges of untreated or partially treated wastewater of <b>1,000 gallons or greater</b> resulting from an enrollee’s sanitary sewer system failure or flow condition that <b>do not</b> reach surface water, a drainage channel, or a municipal separate storm sewer system unless the entire SSO discharged to the storm drain</p>	As soon as practical	OCHCA <sup>2</sup>	<p>- Submit Draft report within 3 business days of becoming aware of the SSO.</p> <p>- Certify within 15 calendar days of SSO end date.</p>
<p><b>Category 3</b> – All other discharges of untreated or partially treated wastewater resulting from an enrollee’s sanitary sewer system failure or flow condition.</p>	As soon as practical	OCHCA <sup>2</sup>	- Submit Certified report within 30 calendar days after the end of month in which
<p><b>Private lateral</b> – Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee’s sanitary sewer system or from other private sewer assets.</p>	As soon as practical.	<p>OCHCA<sup>2</sup></p> <p>OC Public Works<sup>3</sup> and City</p>	- PLSDs that the enrollee becomes aware of may be voluntarily reported to the CIWQS Online SSO Database.
<b>SSO Notification Contacts</b>			
OES (Office of Emergency Services)			

\*Updates should be provided as necessary

<sup>1</sup> Water Code section 13271

<sup>2</sup> Health and Safety Code

<sup>3</sup> NPDES Stormwater Regulations and local Water Quality Ordinance

## 4-2 Responsible Staff

Once the responding maintenance staff verifies an overflow, he/she will notify the Utilities Maintenance Manager of his/her findings at the earliest opportunity.

If the Utilities Maintenance Manager is unavailable and the maintenance staff experiences delays or conflicts or requires additional resolution toward responding to the overflow, the Maintenance Services Supervisor shall be contacted to provide direction.

**Maintenance Services Supervisor: (562) 431-2527 Ext. 1431**  
**Director of Public Works: (562) 431-2527 Ext. 1321**

In the event of a Category 1 or Category 2 overflow, the **Responsible Staff** shall be prioritized in the following order.

- Maintenance Services Supervisor
- Director of Public Works

The Responsible Staff will be in charge of contacting and/or delegating a designee to contact all regulatory agencies as necessary.

## 4-3 Regulatory Agency Initial Notification Requirements

### Category 1, Greater than 1,000 Gallons

In the event that a sanitary sewer overflow is greater than 1,000 gallons and is categorized as SWRCB Category 1 overflow, in that the overflow has reached surface waters, a drainage channel tributary to a surface water, and/or an MS4, the Responsible Staff will notify the Following Agencies:

**Office of Emergency Services (OES)**  
**(800) 852-7550**

**Orange County Health Care Agency (OCHCA)**

**Office Staff: (714) 433 – 6419**  
**Dan Yokoyama: (714) 433 – 6288**  
**Larry Brennier: (714) 433 – 6284**  
**Juan Anzora (714) 433 - 6287**  
**After Hours: (714) 628 – 7008**

**Orange County Public Works (OCPW)**

**Business Hours: (714) 955 – 0600**  
**After Hours: (877) 897 – 7455**

The SCWRCB Order No. WQ 2013-0058-EXEC Amendment (7) indicates that by California Water Code Section 13271, Cal OES shall notify the appropriate regional board, the local health officer, and the director of environmental health of the discharge. It is the policy of the Regional Water Quality Control Board, Santa Ana Region for the City to contact the OCHCA in the event of a Category 1 spill.

OES, OCHCA, and OCPW will be notified immediately, but no longer than (2) hours from the verification of the overflow. The following information will be provided at minimum:

- a. Name and phone number of person notifying OES
- b. Estimated SSO volume in gallons
- c. Estimated flowrate of discharge (gpm), if the overflow is ongoing



- d. Overflow description including: brief narrative, on-site contact and phone number; date and time the City became aware of the overflow; name of the agency that is causing the overflow, cause of the overflow
- e. Status of the overflow containment
- f. Indication that the overflow has reached surface waters or an OCPW stormwater facility
- g. Name of surface waters impacted
- h. Indication of whether any drinking water supply has been affected by the overflow
- i. Any other overflow impacts.
- j. Address, city, state, and zip code of overflow incident.

Upon the initial notification to OES, OCHCA, and OCPW, the Responsible Staff will provide updates regarding any changes to the initial report, such as estimated volume of overflow, overflow containment status, etc.

**4-4 On-Call Contractor**

The City's maintenance staff are well trained in performing the majority of the work necessary to mitigate a sanitary sewer overflow. Based upon the site assessment, the responding maintenance staff may request additional crews, equipment, and/or On-Call Contractors. Tasks that may require the use of on-call contractors include but are not limited to; replacement of large diameter pipes, replacement of deep pipes, requirement for shoring with sheet piling, dewatering, bypass pumping, additional Vacon trucks, and open excavation extending past one day. A list of on-call contractors is included in Table 4-2.

**Table 4-2  
List of On-Call Contractors**

<b>Contractor</b>	<b>Services</b>	<b>Telephone Number</b>
JIMNI Systems, Inc.	Electrical/Control Systems	(949) 770-7654
Doty Bros.		(562) 864-6566
Empire Pipe Cleaning and Equipment, Inc.	Pipe Cleaning/Repair	(714) 639-8352
National Plant Services, Inc.	Spill Containment Equipment	(562) 437-3574
Rain-for-Rent	Spill Containment	(800) 559-8208
Charles King Co.	Bypass Pumping	(562) 426-2974

**4-5 Hazardous Materials**

Hazardous materials can be detected by odor, foamy residue, or oil sheen. Maintenance staff shall inform the Responsible Staff of any suspicious material on the ground or suspicious odors, which may be similar to gasoline. If the maintenance staff suspects that the overflow may involve hazardous materials, he/she will notify the Orange County Fire Department for assistance. Since the suspicious material may be flammable, it is advised that all maintenance staff keep a safe distance until the Fire Department has assessed the situation.

**Orange County Fire Department: (714) 744-0455**

**9 – 1 – 1**

**4-6 Orange County Department of Public Works**

If the overflow has entered the Orange County Department of Public Works (OCPW) storm drain system, the responding maintenance staff will notify OCPW.

**Orange County Public Works**

**Business Hours: (714) 955 – 0600**

**After Hours: (877) 897 – 7455**



**4-7 Orange County Sanitation District (OCSD)**

If an overflow originates from an OCSD sewer, the responding maintenance staff will immediately notify OCSD.

**Orange County Sanitation District**  
**(714) 593 – 7025**

**4-8 Southern California Edison (SCE)**

If the overflow has been determined to have been caused by an electrical outage at a City pump station, the responding maintenance staff will contact Southern California Edison (SCE) to expedite the repair.

**Southern California Edison**  
**(800) 611 – 1911**

**4-9 Nearby Sewer Agencies**

If the overflow originates from another agency's sewer system, the responding maintenance staff will immediately notify the responsible agency.

**Table 4-3**  
**Nearby Sewer Agencies**

Sewer Agency	Telephone Number
Orange County Sanitation District	(714) 593-7025
City of Long Beach	(562) 570-2300
Rossmoor/Los Alamitos Area Sewer District	(562) 431-2223
Sunset Beach Sanitary District	(562) 493-9932
Leisure World	(562) 431-6586
Garden Grove Sanitary District	(714) 741-5375

Should the overflow originate from another agency, City maintenance staff will provide emergency services if there is the potential that the overflow may pose a threat to the public health, waters of the State, public property, or private property. City maintenance staff will assist the nearby agency, as needed or requested, and shall remain at the site until the responsible party arrives to take over the responsibility of the overflow.

**4-10 Private Sewer**

If an overflow is originating on private property and has neither reached the public right-of-way nor shows signs of imminent danger of it reaching public right-of-way, then the responding maintenance staff will inform the property owner or manager of his/her responsibility to contain the overflow, eliminate the cause, and clean up the overflow. While the overflow is the responsibility of the property owner, the maintenance staff shall perform the containment and/or clean-up activities when an overflow from a private facility enters the public right of way. The property owner will be advised not to use water until the overflow has been resolved. If necessary, the Orange County Fire Department will be contacted to shut off the private water supply.

The maintenance staff will inform the private property owner of his/her responsibility to hire a private contractor or plumber to correct the cause of the overflow, at the property owner's expense. If the contractor or plumber is unable to correct the cause, the maintenance staff may take the necessary action to correct the cause of the overflow, at the expense of the private property owner.

In the event that a private sanitary sewer overflow is greater than 1,000 gallons and is categorized as SWRCB Category 1 overflow, in that the overflow has reached surface waters, a drainage channel tributary to a surface water, and/or an MS4, the Responsible Staff will notify Cal OES, OCHCA, and OCPW, as detailed in Section 4-3. The SWRCB strongly encourages agencies to report private overflows. The City will clarify that the overflow is from a private lateral, and will provide the private property owner's contact information. The City will also communicate to the property owner that these agencies have been notified.

**4-11 FOG Control Program Enforcement**

The leading cause of private overflows within the City service area has historically been Fats, Oils, and Grease (FOG). In the event of a private overflow that has been caused by FOG, City staff will send the City's FOG consultant, ECIS, Inc. and its NPDES consultant, John L. Hunter, Inc., to the site to determine if violations have occurred and what further steps are necessary to prevent a repeat occurrence. These consultants will provide all pictures, videos, and field notes regarding the overflow to the City's Code Enforcement Department. If the property owner is determined to be in violation of the City's FOG Control Program, the Code Enforcement Department and the Public Works Director will determine the necessary enforcement actions. To prevent future overflows, the City will provide the property owner the City's FOG Control Program and/or any informational handouts.

**4-12 Laboratory**

If the overflow has reached the waters of the State, the City approved laboratory (**Truesdail Laboratories**) will be contacted by the Responsible Staff to sample the receiving waters.

**Truesdail Laboratories**  
**(714) 730-6239**

**4-13 Environmental Consultant**

If the overflow has reached the waters of the State, the City approved environmental consultant (**John L. Hunter & Associates**) will be contacted by the Responsible Staff.

**John L. Hunter & Associates**  
**(562) 802-7880**

**4-14 Traffic Control**

If an overflow extends to the public right of way, traffic control will be set up to direct the public and vehicle traffic around the overflow location. The City of Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

**City of Seal Beach Police Department: (562) 799-4100**

**4-15 Public Advisory**

The City will provide any signage and/or other public notification to educate the public of the overflow, as required by the California Operation of Emergency Services (OES) or the Orange County Health Care Agency.

**4-16 Media Notification**

The Orange County Health Care Agency, in coordination with City staff, will determine if and when the media will be informed of an overflow incident.

**Orange County Health Care Agency**

**Office Staff: (714) 433 – 6419**

**Dan Yokoyama: (714) 433 – 6288**

**Larry Brennier: (714) 433 – 6284**

**Juan Anzora (714) 433 - 6287**

**After Hours: (714) 628 – 7008**

**4-17 Resource Phone List**

All contact information can be found in the Resource Phone list, summarized in Table 4-4.

**Table 4-4  
Resource Phone List**

<b>Contact</b>	<b>Business Number</b>	<b>Secondary Number</b>
On-Call Personnel		(562) 577-0301
Maintenance Service Supervisor	(562) 431-2527 Ext 1431	(562) 370-3483
Director of Public Works	(562) 431-2527 Ext 1321	
Deputy Director of Public Works/City Engineer	(562) 431-2527 Ext 1322	(562) 370-3661
<b>Laboratory and Environmental Consultant</b>		
Truesdail Laboratories	(714) 730-6239	
John L. Hunter & Associates	(562) 802-7880	
<b>Emergency Contacts</b>		
Fire Department	(714) 744-0455	9-1-1
Police Department	(562) 799-4100	9-1-1
<b>On-Call Contractors</b>		
<b>Contact</b>	<b>Business Number</b>	<b>Secondary Number</b>
JIMNI Systems, Inc.	(949) 770-7654	
Doty Bros.	(562) 864-6566	
Empire Pipe Cleaning and Equipment, Inc.	(714) 639-8352	
National Plant Services, Inc.	(562) 437-3574	
Rain-for-Rent	(800) 559-8208	
Charles King Co.	(562) 426-2974	
<b>Notification Agency</b>		
<b>Contact</b>	<b>Business Number</b>	<b>After Hours</b>
State of California, Office of Emergency Services	(800) 852 - 7550	
Orange County Health Care Agency	(714) 433 - 6419	(714) 628 - 7008
Dan Yokoyama	(714) 433 - 6288	
Larry Brennier	(714) 433 - 6284	
Juan Anzora	(714) 433 - 6287	
Orange County Public Works (OCPW)	(714) 955 - 0600	(877) 897 - 7455
Southern California Edison	(800) 611 - 1911	
<b>Nearby Sewer Agency</b>		
<b>Contact</b>	<b>Business Number</b>	<b>Secondary Number</b>
Orange County Sanitation District	(714) 593-7025	
City of Long Beach	(562) 570-2300	
Rossmoor/Los Alamitos Area Sewer District	(562) 431-2223	
Sunset Beach Sanitary District	(562) 493-9932	
Leisure World	(562) 431-6586	
Garden Grove Sanitary District	(714) 741-5375	

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## SECTION 5

### GRAVITY SEWER OVERFLOW RESPONSE PROCEDURES

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#### 5-1 General

The assigned maintenance staff will respond to a notification of a sewer overflow within 1 hour. If the overflow requires additional assistance, the responding maintenance staff will request additional work power and/or equipment. He/she will notify the police, fire, or other on-call contractors, as necessary. Once the overflow has been contained and the cause has been corrected, the maintenance staff will clean up all spilled sewage.

The procedure to respond to an overflow is illustrated on Figure 2-2. The flow chart details the necessary steps to take from initial report of an overflow, to the sewage containment, to the correction procedures, to clean up activities, and to the final reporting requirements.

#### 5-2 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If an overflow occurs during a wet weather event, and it enters the storm drain system, the drainage system will **not** be entered or blocked with sandbags or plugs to contain the overflow in the storm drain if such action could potentially cause flooding. Additionally, City staff shall not enter the storm drain system if unsafe conditions are observed.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system. If necessary, by-pass pumping will be implemented to pump the sewage from upstream of the overflow location to a downstream sewer that has the capacity to convey the peak wet weather flows (PWWF). Since the maintenance staff will not be addressing the containment and clean-up activities, any sewage that has overflowed from the sewer system will be considered part of the unrecovered overflow volume. To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall document the time the overflow started and when the cause of the overflow has been corrected. If possible, he/she will take photographs or video footage of the sewer overflow.

The following procedures generally deal with dry weather conditions. The procedures for wet weather overflow response will be similar, except the storm drain system will not be entered to intercept and remove the sewage that has already entered the storm drain system.

#### 5-3 Preliminary Assessment

As stated in Section 3-2, the Public Works Department or the police dispatch shall notify the maintenance staff of all reports of sewer overflows. The assigned maintenance staff are required to respond to an overflow report within one (1) hour of the initial notification. The maintenance staff shall respond to the potential overflow site with the City's combination truck.

Upon arrival at the overflow location, the maintenance staff will assess the situation and determine the course of action. The maintenance staff shall request additional work power and/or equipment under the following circumstances:

- An overflow has entered the storm drain system, requiring two or more crews to simultaneously address the cause of the overflow and to contain the sanitary sewer overflow. If it is reported that an overflow has entered the storm drain system, a minimum of two crews shall respond to the overflow site.
- Without additional crews, an overflow has the potential of entering the storm drain system, which would require at least two crews to simultaneously address the cause of the overflow and to contain the sanitary sewer overflow.
- The maintenance staff determines if additional expertise and/or work power is required to correct or contain an overflow.

He/she shall document the following on the Sanitary Sewer Overflow Report (Appendix A):

- Time that overflow was reported to the City
- Name and contact number of the person reporting the SSO
- Name of responding City Staff
- Location of the incident
- Start and stop time of the overflow
- Whether the origins of the overflow is from a City facility.
- RWQCB Spill Category
- The cause of the overflow
- Final destination of the overflow
- Estimated overflow flowrate and overflow volume calculations
- Estimated volume of unrecovered overflow and unrecovered wash water
- Location of prior overflows within 1,000 feet of overflow
- Amount of precipitation 72-hour prior to overflow
- Notification times and person(s) contacted at Office of Emergency Services (OES), Orange County Health Care Agency (OCHCA), and Orange County Public Works (OCPW)
- Whether additional agencies need to be contacted. See Section 4-15 for the detailed list of agencies and their contact information. Potential agencies include but are not limited to:
  - Office of Emergency Services
  - On-call Contractors
  - Orange County Fire Department (Hazardous Materials)
  - Seal Beach Police Department (Traffic Control)
  - Orange County Public Works (OCPW storm drains)
  - Orange County Sanitation District (OCSD)
  - Nearby Sewer Agencies (City of Long Beach, Rossmoor/Los Alamitos Area Sewer District, Sunset Beach Sanitary District, Garden Grove Sanitary District, and Leisure World)
  - Environmental Consultant

He/she will notify the Responsible Staff of his/her findings at the earliest opportunity.

#### **5-4 Procedure for Responsible Staff**

As indicated in Section 4-2, the Responsible Staff will be prioritized in the following order:

- Maintenance Services Supervisor
- Director of Public Works

The Responsible Staff will be contacted should the responding maintenance staff experience delays or conflicts. He/she may be required to provide additional assistance in determining the appropriate plan of action to resolve the overflow.

The site of an overflow will be visited by the Responsible Staff. He/she will obtain and review all reports, notes, and information provided by the responding maintenance staff regarding the overflow, which will be used to notify and report to the appropriate agencies.

If the responding maintenance staff does not contact the Responsible Staff within an hour of the initial overflow notification, the Responsible Staff shall call the responding maintenance staff to get an updated report of his/her findings.

As described in Section 4, the Responsible Staff will notify the State of California Office of Emergency Services (Cal OES), Orange County Health Care Agency, Orange County Public Works, Truesdail Laboratories, and John L. Hunter & Associates, Inc. (Environmental Consultant) when necessary.

### 5-5 Containment Procedures

To recover discharged sewage, the responding maintenance staff shall take all necessary measures to contain the overflow using sand bags, plastic sheets, rubber mats, etc.

A minimum of two crews will be dispatched to the overflow site, if the overflow has entered the **storm drainage system**. One crew will correct the cause of the spill, while the other crew contains the overflow within the storm drain. Otherwise the maintenance staff will respond to the location of the overflow to determine if it can be contained in the street away from the storm drain system, as the cause of the overflow is being addressed. He/she will contact additional crews to request work power and equipment to handle both tasks simultaneously, if necessary.

#### Storm Drain Containment

The responding maintenance staff will locate the entry point of the overflow to the storm drain. The maintenance staff will utilize the sewer and drainage system map, which is included in Appendix A, to determine the catch basins and storm drains that will be affected by the overflow.

He/she will block further raw sewage from entering the storm drains, gutters, and catch basin system using sandbags, dirt berms, waddles, rubber mats, plastic sheeting or other obstructing material. The nearby storm drain manholes will be protected from the sanitary sewer overflow by plugging the storm drain manhole pick holes and vents.

The maintenance staff will try to intercept the overflows in the storm drains before it reaches the waters of the State. If feasible, the maintenance staff will plug the impacted storm drain, and start the removal of the wastewater with the City's combination truck.

If the sanitary sewer overflow has reached a storm drain that is larger than the pipe plugs available to the maintenance staff, he/she will use sand bags to block the flow from extending to the waters of the State.

The City owns one combination truck, which can be used to contain any spill. If additional combination trucks are needed, the Responsible Staff may contact outside sources and/or neighboring agencies for additional pumping equipment. The contact information is included in Table 4-2 and Table 4-3, respectively.

If the overflow has reached an Orange County Public Works (OCPW) storm drain, the responding maintenance staff will inform OCPW of the overflow and the plan of action for containment and clean-up.

If the overflow has reached a storm water retention basin or pump station, the maintenance staff will refer to the containment and clean up procedures, which are detailed in Section 7 of this report.

#### Street Containment

If an overflow has reached the street, the maintenance staff shall keep the overflow area clear from the public by setting up barriers around the overflow. The area impacted by the overflow and potential subsequent work area will be secured to divert traffic and protect the public health and safety, with the use of signs, cones, delineators, barricades, arrowboards, and tape, as appropriate.

The maintenance staff will contain the overflow as close to the source as possible by using sand bags, dirt berms, plastic sheets, rubber mats, or other obstructing material to divert the overflow to a contained area, safe from public contact, waterways, storm drain catch basins and manholes, and private property. The nearby storm drain manholes will be protected from the sanitary sewer overflow by plugging the storm drain manhole pick holes and vents.

If possible the overflow shall be directed toward the downstream sewer manhole. During the correction process, wastewater may need to be pumped with the City's combination truck or by-pass pumping may need to be set up to route the wastewater to the downstream sewer manhole.



### Overflow Originating from Private Property

Due to the potential liability the City could incur with regards to private property damage, the responding maintenance staff shall practice discretion when responding to an overflow caused by private property. If possible, the maintenance staff shall take photographs and video footage of the overflow areas.

If an overflow is originating on private property and has neither reached public right of way nor shows signs of imminent danger of it reaching public right of way, then the maintenance staff will locate the property owners or managers to inform them of their responsibility to contain the overflows, eliminate the causes, and clean-up the overflows.

The maintenance staff will contain the sewage to the private property of the source, when there is the potential of it entering the public right of way with the use of sand bags, dirt berms, plastic sheeting or other obstructing material. While it is the responsibility of the property owner to resolve the cause of an overflow, the City's maintenance staff shall perform the containment and clean-up activities when an overflow from a private facility enters the public right of way. The maintenance staff will advise the property owner to not use water until the overflow has been resolved. If necessary, the maintenance staff can contact the Garden Grove Fire Department to evaluate if it is possible to shut off the private water supply.

The maintenance staff will inform the private property owner of his/her responsibility to hire a private contractor or plumber to correct the cause of the overflow, at the property owner's expense. If the contractor or plumber is unable to correct the cause, the maintenance staff may take the necessary action to correct the cause of the overflow, at the expense of the private property owner.

The leading cause of private overflows within the City service area has historically been Fats, Oils, and Grease (FOG). In the event of a private overflow that has been caused by FOG, City staff will send the City's FOG consultant, ECIS, Inc. and its NPDES consultant, John L. Hunter, Inc., to the site to determine if violations have occurred and what further steps are necessary to prevent a repeat occurrence. These consultants will be provided all pictures, videos, and field notes regarding the overflow to the City's Code Enforcement Department. If the property owner is determined to be in violation of the City's FOG Control Program, the Code Enforcement Department and the Director of Public Works will determine the necessary enforcement actions. To prevent future overflows, the City will provide the property owner the City's FOG Control Program and/or any informational handouts.

## 5-6 Gravity Sewer Correctional Procedures

### Pipe Blockage in City Sewers

Sewer overflows may be the results of blockages due to heavy grease, roots, or other obstructions. The responding maintenance staff will check the sewer for a blockage. If he/she believes that the overflow is caused by a pipe blockage, the maintenance staff will go to the upstream manhole and block the flow to the affected manhole. The combination truck will be set up to pump the influent wastewater. The maintenance staff will remove the blockage at the downstream manhole. Appropriate equipment will be utilized based on the initial blockage assessment. These may include cleaning nozzles for grease cleaning, root cutting or stoppage clearing. A steel rake will be placed in the channel at the manhole that is located downstream of the suspected section of sewer, and the line will be cleared. The material collected on the steel rake will be analyzed to determine the probable cause of the blockage.

If necessary, the maintenance staff will enter the manhole and manually remove the blockage; following the City's confined space safety procedures. Upon clearing the blockage, CCTV inspection will be performed as soon as possible, but no less than three (3) days after the overflow event.

The responding maintenance staff may determine that by-pass pumping will be required if the blockage cannot be cleared in a timely manner, or if the overflow is large and has the potential to endanger public health, enter waterways, enter storm drain catch basins and manholes, or damage private property.

If by-pass pumping is required, the City will contact an on-call contractor, as listed in Table 4-2. The manhole upstream of the pipe obstruction will be blocked off, while the cleaning commences. The suction end of the by-pass hose will be placed in the plugged manhole and the hose will extend on the street to the manhole downstream of the deficiency. Traffic ramps will be set up to protect the by-pass hose from vehicle traffic, when

by-pass pumping is necessary. A proper sized emergency pump will be used to convey the wastewater to the downstream system.

If by-pass pumping is not feasible, the maintenance staff will block the upstream manhole and use the City's combination truck to vacuum the wastewater as the blockage from the downstream sewer is removed. Neighboring agencies and/or contractors will be contacted if additional Vactor/combination trucks are necessary.

### Failed Pipe

Overflows may be the results of structural deficiencies, which include but are not limited to collapsed pipes, broken pipes, deformed pipes, and severe offset joints. If the overflow is due to a failed pipe, the City will contact an on-call contractor to perform by-pass pumping around the deficient reach. The manhole upstream of the pipe failure will be blocked off, and the by-pass pumps will divert the flow from the plugged manhole to the manhole located downstream of the deficiency. If by-pass pumping is not feasible, the maintenance staff will block the upstream manhole and use the City's combination truck to vacuum the wastewater as the pipe failure on the downstream sewer is repaired. Neighboring agencies and/or contractors will be contacted if additional Vactor/combination trucks are necessary.

Whenever feasible, the City's maintenance staff will repair the failed pipeline. On-call contractors may be contacted when additional assistance is required. The on-call contractor information is included in Table 4-2 of this report.

### 5-7 Traffic Control and Crowd Control

As stated in Section 4-13, if an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

All traffic control will comply with the Work Area Traffic Control Handbook (WATCH) standards.

### 5-8 Clean-up Procedures

#### Public Right of Way

Once the overflow has been corrected and contained, the maintenance staff will clean up all sewage. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system. If the sewage has reached a storm water retarding basin, the sewage shall be treated by methods identified by the City's Environmental Consultant. It should meet all standards of the Office of Emergency Services ((800) 852 – 7550).

Any remaining solids and semisolids will be swept, raked, picked-up and transported for disposal at the Orange County Sanitation District (OCSD) Treatment Plant No. 2 in the City of Huntington Beach

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

The site shall then be disinfected and deodorized.

#### Storm Drain

As part of the containment procedure, the maintenance staff will plug the storm drain pipes or channels to block the sewage from reaching waters of the State. He/she shall start the removal of wastewater with the City's combination truck.

Once the overflow volume within the storm drain system has been vacuumed out, the storm drain will be cleaned. The solids will be removed, and the storm drain will be washed down. The wash water will be vacuumed from the storm drain and disposed of at the OCSD Treatment Plant No. 2.

As discussed in Section 4-12, if an overflow reaches the waters of the State, the Responsible Staff will contact the approved laboratory and environmental consultant.

**Portable aerators** may be required where complete recovery of sewage is not possible. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultant.



### Private Property

If there is damage to private property due to an overflow from a City sewer, the maintenance staff will perform the clean-up operations, consisting of the following:

- Initial Clean up, including wiping and cleaning furniture
- Collect solid waste material
- Remove standing fluid from both indoor and outdoor areas
- Take photographs and video footage of the damaged and undamaged areas
- Inform the property owner of their right to hire a professional sewer clean-up service, which will be reimbursed by the City.
- Make arrangements to place the residents in a nearby hotel, as necessary

The responsibility for the deficiency correction, overflow containment, and overflow clean-up for an overflow originating from a private lateral will be the responsibility of the property owner. The maintenance staff will contain the sewage to the private property of the source, when there is the potential of it entering the public right of way. If the overflow from the private facility does enter the public right of way, the maintenance staff will perform the containment and clean-up activities as previously described.

### 5-9 Overflow Volume Calculation

Overflow volume shall be calculated by the methodology developed by the Orange County Area Waste Discharge Requirements Steering Group. The rate of the overflow is estimated by the characteristics of the overflow at the manhole, as depicted in Appendix C. The start and stop times will also be estimated from the Sanitary Sewer Overflow Reports, included in Appendix B. The estimated volume will be the product of the estimated rate of the overflow and the estimated duration of the overflow. If the estimated rate or duration of the overflow could not be determined, the overflow can be estimated by evaluating the containment areas of the overflow.

As feasible, the maintenance staff will take photographs and video footage of the overflow manhole and containment area, several times during the overflow event as the spill volumes will likely change with time.

### 5-10 Sampling Requirements

If the overflow has reached the waters of the State, the Responsible Staff will contact the City approved laboratory, **Truesdail Laboratories ((714) 734-6239)**, and City's environmental consultants, **John L. Hunter & Associates ((562) 802-7880)**. The laboratory and environmental consultant will be provided all reports, notes, pictures, and any information regarding the overflow. He/she will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultant will also evaluate the actions have and need to be taken to meet the health requirements. He/she will take samples of the receiving waters, as necessary.

As detailed in Section 8-2, a detailed Sanitary Sewer Overflow Technical Report will need to be prepared for any overflow greater than 50,000 gallons that reach the waters of the State. The environmental consultant will need to be contacted to perform all water quality samples and to provide all environmental analyses, as required by the State Water Resources Control Board (SWRCB). The sampling will include the following, at minimum:

- Dissolved oxygen
- Total ammonia
- Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan water quality objective or as directed by the Regional Water Quality Control Board
- pH
- Electrical Conductivity
- Temperature
- Biochemical Oxygen Demand (BOD or CBOD)

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## SECTION 6

### SEWER PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES

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#### 6-1 General

The maintenance staff will respond to a notification of a pump station overflow within one (1) hour. If the overflow requires additional assistance, the maintenance staff may request additional crews or notify the police, fire department, or other on-call contractors, as necessary.

In the event of a pump or forcemain failure at any of the City's seven (7) pump stations, the maintenance staff should refer to Appendix D for site specific procedures for responding to the failure.

#### 6-2 City of Seal Beach Sewer Pump Stations

The City owns and operates seven (7) pump stations to lift wastewater from the lower lying areas to the higher downstream gravity systems.

- Pump Station No. 35
- Eighth Street Pump Station
- First Street Pump Station
- Pier Pump Station
- Adolfo Lopez Pump Station
- Boeing Pump Station
- Aquatic Park Pump Station

These pump stations are equipped with alarms that notify the Seal Beach Police Department in the event of pump failures, power failures, high wet well level, high temperature, and generator failure. The Eighth Street, Adolfo Lopez, and Boeing pump stations are also equipped with natural gas back-up generators, which will automatically activate in the event of a power outage. Pump Station No. 35 is equipped with back-up gas-powered engines that will drive the pumps in the event of a power failure. Figure 6-1 shows the locations of the pump stations and their associated tributary areas and force mains.

#### 6-3 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If an overflow occurs during a wet weather event, and it enters the storm drain system, the drainage system will **not** be entered or blocked with sandbags or plugs to contain the overflow in the storm drain as such action could potentially cause flooding. Additionally, City staff should not enter the storm drain system if unsafe conditions are observed.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system. Since the maintenance staff will not be addressing the containment and clean-up activities, any sewage that has overflowed to the storm drain system will be considered part of the unrecovered overflow volume.

To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall record the length of time the sewer system is overflowing. If possible, he/she will take photographs or video footage of the sewer overflow at different times during the overflow event as the volumes will likely change with time.

The following procedures generally deal with dry weather conditions. The procedures for wet weather overflow response will be similar, except the storm drain system will not be entered to intercept and remove the sewage that has already entered the storm drain system.

#### 6-4 Preliminary Assessment Procedures

The seven (7) lift stations are on a dialer system, which notifies the Seal Beach Police Department in the event of an alarm. Police Dispatch then notifies the Responsible Staff to oversee the overflow response.

In addition, the following four pump stations are equipped with supervisory control and data acquisition (SCADA) systems for remote monitoring:

- Adolfo Lopez Pump Station
- Pump Station No. 35.
- 8<sup>th</sup> Street Pump Station
- 1<sup>st</sup> Street Pump Station (Equipped but not connected)

The following are alarms are monitored at the Adolfo Lopez Pump Station:

- High Wet Well Level
- Pump Failure
- Power Failures
- Motor High Temperature
- Site Intrusion
- Generator Failure

Once an alarm has been identified, maintenance staff will respond to the pump station within one (1) hour of the initial notification.

Upon arrival at the overflow location, the responding maintenance staff will assess the overflow and determine the course of action. The maintenance staff shall evaluate the pump station site and request additional staff and/or equipment under the following circumstances:

- An overflow has entered the storm drain system, requiring at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- Without additional staff, an overflow has the potential of entering the storm drain system, which would require at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- The maintenance staff determines if additional expertise and/or work power is required to correct a failed pump or forcemain, to contain an overflow, or to clean-up the site

The maintenance staff shall document his/her assessments on the Sanitary Sewer Overflow (SSO) Spill Report, which is included in Appendix B of this report. He/she shall include the following, at minimum:

- Time that overflow was reported to the City
- Name and contact number of the person reporting the SSO
- Name of responding City Staff
- Location of the incident
- Start and stop time of the overflow
- Whether the origins of the overflow is from a City facility.
- RWQCB Spill Category
- The cause of the overflow
- Final destination of the overflow
- Estimated overflow flowrate and overflow volume calculations
- Estimated volume of unrecovered overflow and unrecovered wash water
- Location of prior overflows within 1,000 feet of overflow
- Amount of precipitation 72-hour prior to overflow
- Notification times and person(s) contacted at Office of Emergency Services (OES), Orange County Health Care Agency (OCHCA), and Orange County Public Works (OCPW)



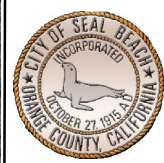


**Legend**

- ▲ City Sewer Pump Station
- ▲ OCSD Sewer Pump Station
- Forcemain
- OCSD Trunk Sewers
- City Boundary

N

0    750    1,500    3,000  
Feet



**AKM**

PROJECT NO: 0801380.00  
DATE: February 2018

CITY OF SEAL BEACH  
SSOERP

**Pump Station Sewersheds  
and Force Mains**

Figure 6-1



- Whether additional agencies need to be contacted. See Table 4-4 for the detailed list of agencies and their contact information. Potential agencies include but are not limited to:
  - Office of Emergency Services
  - On-call Contractors
  - Orange County Fire Department (Hazardous Materials)
  - Seal Beach Police Department (Traffic Control)
  - Orange County Public Works (OCPW storm drains)
  - Orange County Sanitation District (OCSD)
  - Nearby Sewer Agencies (City of Long Beach, Rossmoor/Los Alamitos Area Sewer District, Sunset Beach Sanitary District, Garden Grove Sanitary District, and Leisure World)
  - Laboratory and Environmental Consultant
  - Southern California Edison (if alarm/failure is due to a power outage)

He/she will notify the Responsible Staff of his/her findings at the earliest opportunity.

#### **6-5 Procedure for Responsible Staff**

As indicated in Section 4-2, the Responsible Staff will be prioritized in the following order:

- Maintenance Services Supervisor
- Director of Public Works

The Responsible Staff, will be contacted should the responding maintenance staff experience delays or conflicts. He/she may be required to provide additional assistance in determining the appropriate plan of action to resolve the overflow.

During an overflow event, the pump station will be visited by the Responsible Staff. He/she will obtain and review all reports, notes, pictures, and information provided by the maintenance staff regarding the overflow, which will be used to notify and report to the appropriate agencies.

If the maintenance staff does not contact the Responsible Staff within an hour of the initial overflow notification, the Responsible Staff shall call the responding maintenance staff to get an updated report of his/her findings.

As described in Section 4, the Responsible Staff will notify the State of California Office of Emergency Services (Cal OES), Orange County Health Care Agency, Orange County Public Works, ECIS, Inc. (FOG Consultant), John L. Hunter & Associates (Environmental Consultants) and Truesdail Laboratories when necessary.

#### **6-6 Response Time**

The responding maintenance staff will respond to a notification of a pump station alarm within one (1) hour.

#### **Emergency Storage Fill Time**

The emergency storage includes the wet well volume, portions of the upstream manholes, and portions of the upstream sewer pipes. In the event of a pump station failure, the maintenance staff will strive to respond to the alarm before sewage has filled the emergency storage. Regardless of the available emergency storage volume, the City will respond to the pump station within one (1) hour of notification of alarm. The cited minimum response time is estimated by dividing the total available system storage volume (calculated as the volume of influent sewer pipe network and associated manholes below the estimated rim elevation at the expected overflow sewer manhole, plus the storage volume available in the wet well between the high-level alarm elevation and the spill elevation) by the PDWF at the pump station.

If the maintenance staff anticipate an overflow will occur before they arrive to the site, the staff will be prepared to try to contain and capture the sewage on the local street and within the storm drain system.

## 6-7 Containment Procedures

### Overflow Location

An overflow from a pump station failure may occur at the pump station wet well or an upstream manhole, depending on the ground elevation within the tributary area, as well as the blockages within the sewer system. The responding maintenance staff will keep the overflow area clear from the public by setting up barriers around the overflow with the use of signs, cones, delineators, barricades, arrowboards, and tape, as appropriate.

### Street and Private Property Containment

The City staff will contain the overflow as close to the source as possible by using sand bags, dirt berms, plastic sheets, rubber mats, and or other obstructing material to divert the overflow to a contained area, safe from public contact, waterways, storm drain catch basins and manholes, and private property. If possible, the overflow shall be directed toward the downstream sewer manhole. The nearby storm drain manholes will be protected from the sanitary sewer overflow by plugging the storm drain manhole pick holes and vents.

During the correction process, the wastewater may need to be pumped with the City's combination truck or bypass pumping may be necessary to route the wastewater to the downstream sewer manhole.

### Storm Drain Containment

The site-specific procedures for the City's pump stations are included in Appendix D and should be used to determine the potential storm drains that would be effected by an overflow any of the City's seven (7) pumps stations. If the overflow has reached the storm drain system, one crew will block additional raw sewage from entering the storm drain system by containing it on the street. The maintenance staff will block raw sewage from entering the storm drains, gutters, and drainage catch basin system using sandbags, dirt berms, waddles, rubber mats, plastic sheeting or other obstructing material. The nearby storm drain manholes will be protected from the sanitary sewer overflow by plugging the storm drain manhole pick holes and vents.

Another crew will capture the raw sewage within the downstream drainage system, if possible. The staff will plug the impacted drainage system, and start the removal of the wastewater with the City's combination truck. The City has plugs for pipes up to 12-inch in diameter. If the sanitary sewer overflow has reached a storm drain pipe or channel that is larger than this size, the maintenance staff will use sand bags to block the flow from extending to the waters of the State. As discussed in Section 4-11, if an overflow reaches an open-channel, the Responsible Staff will contact the City-approved environmental consultant (John L. Hunter & Associates) and the City-approved laboratory (Tuesdail Laboratories).

Additional Vactor and/or combination trucks from outside sources and/or neighboring agencies may be requested, as necessary. The contact information is included in Table 4-3 and Table 4-4.

If the overflow has reached an Orange County Public Works (OCPW) storm drain, the responding maintenance staff will inform OCPW of the overflow and the plan of action for containment and clean-up.

If the overflow has reached a storm water retarding basin or pump station, the maintenance staff will refer to the containment and clean up procedures, which are detailed in Section 7 of this report.

## 6-8 General Pump Station and Forcemain Correctional Procedures

### Failed Pump

In the event of one pump failure, the maintenance staff will manually switch the pump station to operate with the second (operable) pump. The City has a standby pump and motor for each of its pump stations at the City Maintenance Yard.

If one pump at the station can be operated, the maintenance staff will address the pump failure.

- If there is an obstruction in the pump that can be removed easily, the maintenance staff will clear the pump obstruction and place the pump back in service.
- If the failure is due to a closed check valve or isolation valve, the maintenance staff will fix the check valve setting and/or open the closed isolation valve.

If the failure is due to severe ragging or if the failure is due to a broken pump, the maintenance staff will request an additional crew to transport the standby pump from the City Maintenance Yard. The standby pump will be placed into service, as the ragging is cleared or the pump is fixed. The maintenance staff will determine if the removed pump can be salvaged. If not, a new pump will be ordered to replace the broken pump.

If the failure is due to a broken check valve or isolation valve, the maintenance staff will replace the broken valve. The maintenance staff will determine if the valve can be salvaged. If not, a new valve will be ordered to replace the broken valve.

### **Failed Electrical Facilities**

If the failure is due to a Southern California Edison (SCE) power outage, the responding maintenance staff will contact Southern California Edison to expedite repairs.

Backup generators are located at three (3) of the City's seven (7) pump stations. The Adolfo Lopez, Boeing, and Eighth Street Pump Stations are each equipped with 100 kW diesel generators. Pump Station No. 35 is equipped with two gas engines that will operate the pumps in the event of a power failure, as well as a 5-kW generator to operate control equipment in the event of a power failure. For the remaining pump stations, the City staff will arrive with an appropriately sized generator to power the facility as the electrical service is repaired.

If upon arrival to any of the three pump stations where a generator is available, the maintenance staff finds that the automatic transfer switch has failed to connect to the generator, he/she will set the generator as the main power source.

If the overflow is due to an electrical failure at the pump station, a City electrician or a contract electrician will be contacted. In the event that there is a failure with the motor, the maintenance staff will pace the standby motor into service and determine if the motor can be salvaged. If not, a new motor will be ordered.

### **By-Pass Pumping**

By-pass pumping may be utilized under any of the following circumstances:

- Rising sewage levels in the wet well are greater than the pump start setting
- Failure of both pumps and/or motors leave the pump station inoperable
- No power is available from either SCE or the emergency generator

All of the City's sewer pump stations are equipped with by-pass connections. When the existing forcemains are operable, the City will contact an on-call contractor, to set up by-pass pumping. The suction end of the by-pass pump will be placed into the bottom of the wet well. The discharge hose will be connected to the existing forcemain via the by-pass connection. The by-pass connection to the existing forcemain minimizes the need for long temporary discharge hose when the forcemain is usable.

When the existing forcemain is not usable, the on-call contractor may set up by-pass pumping, which consists of long hose to be laid at least partially on the street surface. When it is necessary, this form of by-pass pumping may interfere with residents' access to their homes. Maintenance staff shall inform neighbors of the inconvenience and request that they park their vehicles on the streets while by-pass pumping continues. All by-pass hoses will be secured with signs, cones, delineators, arrowboards, and tape, as appropriate.

If by-pass pumping is not feasible or the existing forcemain(s) are not operable, the maintenance staff will use the City's combination truck to vacuum the wastewater from the wet well as the pump station failure is being fixed. Neighboring agencies and/or contractors will be contacted if additional Vactor/combination trucks are necessary. A detailed description of the recommended by-pass pumping procedures at each pump station is available in Appendix D.

### **Failed Forcemain**

In general, if there is a forcemain failure that renders the pipe unusable, the City will use its combination truck to pump the influent sewage from the wet well and transport it to the Orange County Sanitation Districts (OCSD) Treatment Plant No. 2, located in the City of Huntington Beach.

Neighboring agencies and/or contractors will be contacted if additional Vector/combo trucks are necessary. City staff will be immediately contacted to provide emergency repair for the forcemain failure. Private contractors will be contacted to provide repairs, as necessary.

### 6-9 Traffic Control and Crowd Control

As stated in Section 4-14, if an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

All traffic control will comply with the Work Area Traffic Control Handbook (WATCH) standards.

### 6-10 Clean-up Procedures

#### Public Right of Way

Once the overflow has been corrected and contained, the maintenance staff will clean-up all sewage. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system.

Any solids and semisolids will be swept, raked, picked-up and transported for disposal at the Orange County Sanitation District's (OCSD) Treatment Plant No. 2, located in the City of Huntington Beach.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

The site shall be disinfected and deodorized.

#### Storm Drain

As part of the containment procedure, the maintenance staff will plug the storm drain pipes or channels to block the sewage from reaching waters of the State. He/she shall start the removal of wastewater with the City's combination truck.

Once the overflow volume within the storm drain system has been vacuumed out, the drainage system will be cleaned. The solids will be removed, and the storm drain pipe or channel will be washed down. The wash water will be vacuumed from the storm drain and disposed of at the OCSD Treatment Plant No. 2.

If the overflow reaches waters of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates, Inc. ((562) 802-7880)**, respectively.

**Portable aerators** may be required where complete recovery of sewage is not possible. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultant.

#### Private Property

If there is damage to private property due to an overflow from a City pump station or forcemain, the maintenance staff will perform the initial clean-up operations, consisting of the following:

- Initial cleaning, including wiping and cleaning furniture
- Collect solid waste material
- Remove standing fluid from both indoor and outdoor areas
- Take photographs and video footage of the damaged and undamaged areas
- Inform the property owner of their right to hire a professional sewer clean-up service, which will be reimbursed by the City.
- Make arrangements to place the residents in a nearby hotel, as necessary

### 6-11 Overflow Volume Calculation

Overflow volume shall be calculated by the methodology developed by the Orange County Area Waste Discharge Requirements Steering Committee. The rate of the overflow is estimated by the characteristics of the overflow at the manhole, as depicted in Appendix C. The start and stop times will also be estimated from the Sanitary Sewer Overflow Reports. The calculated overflow volume will be the product of the estimated rate



of the overflow and the estimated duration of the overflow. If the estimated rate or duration of the overflow could not be determined, the overflow can be estimated by evaluating the containment areas of the overflow.

As feasible, the maintenance staff will take photographs and video footage of the overflow manhole and containment area throughout the overflow period at different times throughout the overflow event as the overflow flowrate and volume change with time.

### **6-12 Sampling Requirements**

If the overflow has reached the waters of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultants, **Truesdail Laboratories ((714) 734-6239) and John L. Hunter & Associates, Inc. ((562) 802-7880)**. They will be provided all reports, notes, and any information regarding the overflow. The John L. Hunter representative will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The representative will also evaluate what City actions have and need to be taken to meet the health requirements.

Truesdail Laboratories staff will take samples, as necessary.

As detailed in Section 8-2, a detailed Sanitary Sewer Overflow Technical Report will be required by the State Water Resources Control Board (SWRCB) for any overflow greater than 50,000 gallons that reach the waters of the State. Truesdail Laboratories will need to be contacted to perform all water quality samples and to provide all environmental analyses, as required by the State Water Resources Control Board (SWRCB). The sampling will include the following, at minimum:

- Dissolved oxygen
- Total ammonia
- Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan water quality objective or as directed by the SWRCB
- pH
- Electrical Conductivity
- Temperature
- Biochemical Oxygen Demand (BOD or CBOD)

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## SECTION 7

### STORMWATER DETENTION BASINS AND PUMP STATIONS OVERFLOW PROCEDURES

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#### 7-1 General

The location of the stormwater facilities within the City boundaries is shown on Figure 7-1. Storm drains in the Bridgeport, northern Marina Hill and western portion of Old Town generally convey storm water north and west towards the West End Pump Station, which pumps into the San Gabriel River. City and Orange County Flood Control District (OCFCD) storm drains in central and eastern Old Town, as well as southern Marina Hill convey storm water south and east to the OCFCD Seal Beach Pump Station. City storm drains in the far eastern portion of College Park East drain to the Bolsa Chica Channel. Storm drains in the remainder of College Park East and in the smaller sewersheds along Seal Beach Boulevard convey storm water towards the Los Alamitos Retarding Basin, via private, City of Seal Beach, and OCFCD storm drains. From the Los Alamitos Retarding Basin, the runoff is pumped into the San Gabriel River. The Los Alamitos Retarding Basin (C01B01), with its pump station (C01PS1), is the only OCFCD retarding basin within the City's sewer service area.

#### 7-2 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If an overflow occurs during a wet weather event, and it enters the storm drain system, the City staff will **not** enter the drainage system nor will they block it with sandbags or plugs to contain the overflow in the storm drain if such action could potentially cause flooding. Additionally, City staff will not enter the storm drain system if unsafe conditions are observed.

Likewise, if a sewer overflow reaches a stormwater pump station or retarding basin during wet weather conditions, the typical operations of the stormwater pump station and retarding basin shall **not** be disabled in an attempt to contain the sewer overflow.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to waters of the State. Since the City staff will not be addressing the containment and clean-up activities, any sewage that has overflowed from the sewer system will be considered part of the unrecovered overflow volume. To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall record the length of time the sewer system is overflowing. If possible, he/she will take photographs of the sewer overflow.

The following procedures generally deal with dry weather conditions.

#### 7-3 Los Alamitos Retarding Basin and Pump Station

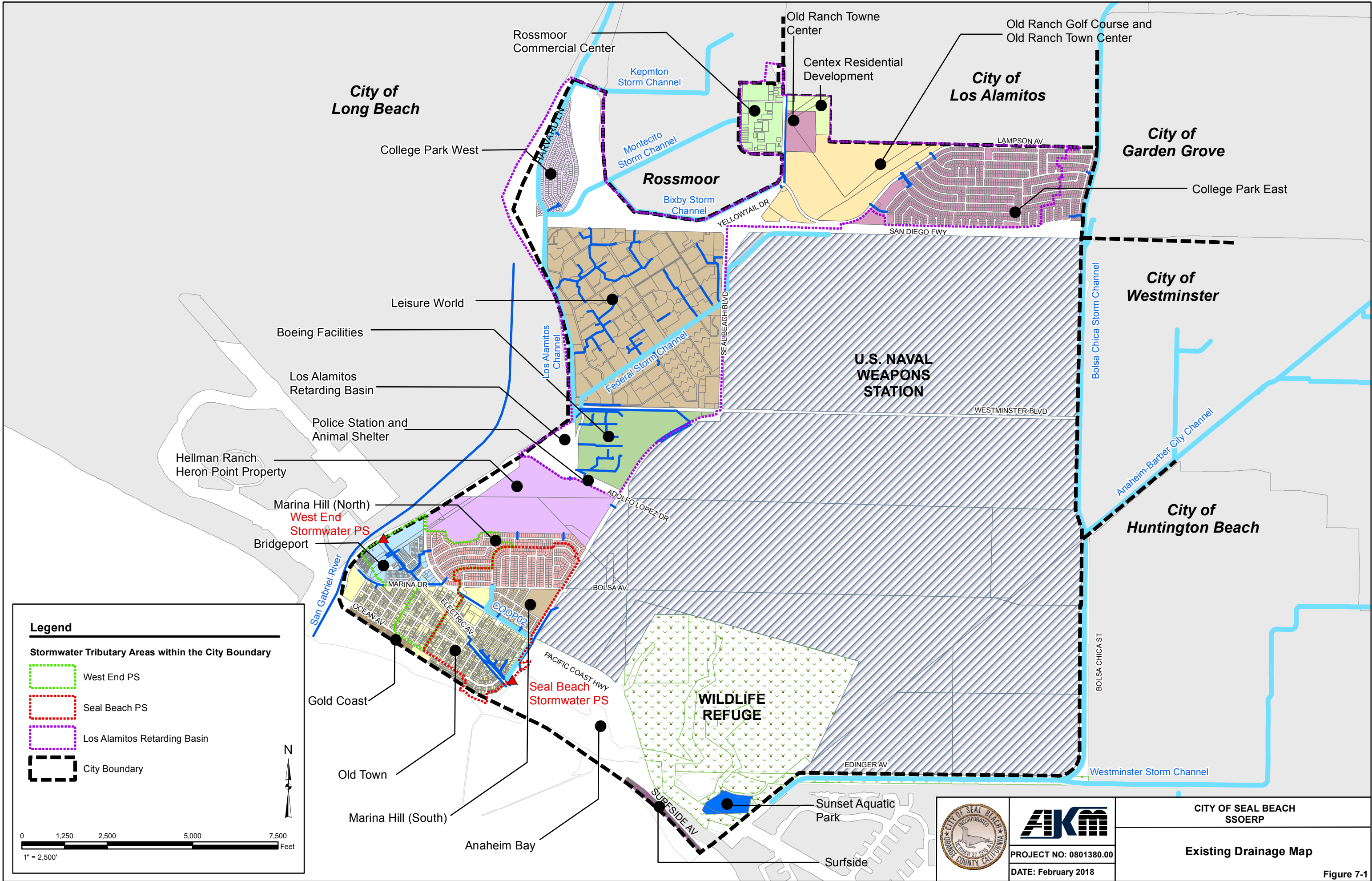
##### General

The Los Alamitos Retarding Basin is generally located south of Westminster Avenue and east of the San Gabriel River. The Island Village residential development is directly north of the basin, while the Pacific Gateway Business Center is located directly to the east. The Adolfo Lopez Sewer Pump Station is located to the south east of the retarding basin.

The existing Los Alamitos Pump Station is located at the northwest corner of the basin just south of Island Village residential development. An upgrade of the basin and the pump station was completed in January 2015. The project consisted of a new containment structure, intake structure, control room, new pumps and natural gas engines, new control panels, back-up fuel support systems and other equipment.

The Los Alamitos basin receives/detains flow from the following facilities:

1. OCFCD Federal Storm Channel: double 8'W x 6.5'H RCBs
2. OCFCD Los Alamitos Channel: 20'W X 13'H earthen channel



### Tributary Storm Drains

The Los Alamitos Retarding Basin has a capacity of 280 acre-feet, located on a 38-acre site. The following OCPW facilities are tributary to the Los Alamitos Retarding Basin.

- Los Alamitos Channel (C01)
- Federal Storm Channel (C01S06)
- Montecito Storm Channel (C01S03)
- Kempton Storm Channel (C01S01)

### Response Procedure

For an overflow at a gravity sewer, which may reach the Los Alamitos Retarding Basin, maintenance staff will follow the procedures included in Section 5.

The following procedures address the additional requirements for dealing with an overflow that extends to the Los Alamitos Retarding Basin.

### Containment and OCPW Notification

The Los Alamitos Retarding Basin, Los Alamitos Channel, Federal Storm Channel, Montecito Storm Channel, and Kempton Storm Channel are owned by OCPW; therefore, the responding maintenance staff will inform OCPW of a sewer overflow that has reached any of these facilities.

The Los Alamitos Retarding Basin tributary area within the City's boundary is illustrated on Figure 7-1. A sewer overflow within this area has the potential of terminating at the storm water retarding basin. If an overflow reaches the retarding basin, the maintenance staff will prevent additional raw sewage from entering the storm drain system by containing the overflow to the street, as close to the overflow sewer manhole as possible.

Another City crew will be sent to block the sewage that has reached the storm drain system near the inlet to Los Alamitos Retarding Basin. Combination trucks will be set up to pump all sewage from the inlet structure.

In the event that the overflow has reached Los Alamitos Retarding Basin, the maintenance staff will contact OCPW to disable Los Alamitos Pump Station, such that the overflow may be contained in the retarding basin. At any time, if the levels within the retarding basin are rising and may cause flooding, the Los Alamitos Pump Station will **not** be disabled. In this case, the maintenance staff shall concentrate on correcting the cause of the sewer overflow to minimize the volume that is discharged into the retarding basin.

The City will keep OCPW updated with the plan of action for containment and clean-up within the Los Alamitos Retarding Basin.

### Clean up

Once the overflow has been corrected and contained, the maintenance staff will clean up all traces of the overflow. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system. Any remaining solids and semisolids will be swept, raked, picked-up and transported for disposal at the Orange County Sanitation District (OCSD) Treatment Plant No. 2 in the City of Huntington Beach

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will vacuumed and disposed of at the OCSD Treatment Plant No. 2.

If a sewer overflow reaches Los Alamitos Retarding Basin, the Responsible Staff will contact the City's laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**, respectively. They will be provided all reports, notes, and any information regarding the overflow. The John L. Hunter representative will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultants will also evaluate what City actions have and need to be taken to meet the health requirements. Truesdale Laboratories staff will take samples from the retarding basin, as necessary.

**Portable aerators** may be required when sewage has entered the retarding basin. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultant.



Once the environmental consultant has determined the water quality is appropriate, the City will contact OCPW to place Los Alamitos Pump Station back into service.

As detailed in Section 8-2, a detailed Sanitary Sewer Overflow Technical Report will need to be prepared for any overflow greater than 50,000 gallons that reaches the waters of the State. The City-approved laboratory will need to be contacted to perform all water quality samples and to provide all environmental analyses, as required by the State Water Resources Control Board (SWRCB).

## 7-4 West End Stormwater Pump Station

### General

The West End Stormwater Pump Station is generally located near 63 Riversea Road, adjacent to the San Gabriel River in the Bridgeport area. Access to the station is through the generally residential neighborhood, near Riversea Road. A business park is located north east of the pump station. The West End Pump Station was rebuilt in 2008, including the addition of two (2) 100 cfs (45,000 gpm) axial flow pumps. The wet well is a 12' wide x 24' long by 15' high reinforced concrete structure, with a roughly 4,000 cubic foot (30,000 gallon) containment volume.

### Tributary Storm Drains

The West End Pump Station receives flow from a tributary of approximately 166 acres, which includes portions of Bridgeport, Old Town, and Marina Hill, as detailed on Figure 7-1. The primary storm drain tributary to the pump station is a 78" (W) x 39" (H) reinforced concrete box.

### Response Procedure

For an overflow at a gravity sewer, which may reach the West End Pump Station, maintenance staff will follow the procedures included in Section 5.

The following procedures address the additional requirements for dealing with an overflow that extends to the West End Pump Station.

### Containment and OCPW Notification

The West End Pump Station tributary area within the City's boundary is illustrated on Figure 7-1. A sewer overflow within this area has the potential of terminating at the pump station wet well. If an overflow reaches the wet well, the maintenance staff will prevent additional raw sewage from entering the storm drain system by containing the overflow to the street, as close to the overflow sewer manhole as possible.

In the event that the overflow reaches the wet well, the storm water pumps at the station should be disabled in order to contain the overflow to the wet well and prevent any sewage from reaching the waters of the State in the San Gabriel River. Combination trucks will then be set up to pump all sewage from the wet well structure.

If there is significant runoff that is filling the wet well, which may cause flooding of the nearby tributary area, the City will **not** disable the West End Pump Station. Typically, during a wet weather event, the West End Pump Station will remain in operation, and any sewage that has entered the wet well will be allowed to be pumped into the San Gabriel River. Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system.

If the West End Pump Station has been disabled, the responding maintenance staff will assign one crew to ensure that the sewage is contained and another to correct the cause of the overflow.

The City will keep OCPW updated with the plan of action for containment and clean-up

## Clean up

Once the overflow has been corrected and contained, the maintenance staff will clean up all traces of the overflow.

If the overflow has reached the storm water pump station wet well, and the pump station has been disabled, the City combination truck will be used to pump the sewage out of the wet well. The wet well will be separately washed down and the wash water will be vacuumed. All sewage and wash water will be vacuumed from the wet well and disposed of at the Orange County Sanitation District (OCSD) Treatment Plant No. 2 in the City of Huntington Beach. If additional combination trucks are needed, the Responsible Staff will contact neighboring agencies and outside sources to request additional equipment.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

If a sewer overflow reaches the San Gabriel River, the Responsible Staff will contact the City's laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**, respectively. They will be provided all reports, notes, and any information regarding the overflow. The John L. Hunter representative will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultants will also evaluate what City actions have and need to be taken to meet the health requirements. Truesdail Laboratories staff will take samples, as necessary.

**Portable aerators** may be required when sewage has entered the San Gabriel River. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultant.

## 7-5 Seal Beach Stormwater Pump Station

### General

The Seal Beach Stormwater Pump Station is located near the intersection of Electric Avenue and Seal Beach Boulevard, adjacent to Sewer Pump Station No. 35. This station is owned and operated by OCPW and was upgraded in 1997 with three 57,000 gpm (127 cfs) pumps, which increased its capacity to 381 cfs. The existing pump station's wet well is approximately 35 feet wide and 33 feet long rectangular reinforced concrete structure. Its bottom and top elevations are - 15.75 feet and 6.50 feet, respectively. The 54-inch and 66-inch influent drains enter the wet well on the west side with invert elevations of -8.29 and -8.66 respectively. The runoff passes through a trash barrier before being pumped to Anaheim Bay.

### Tributary Storm Drains

The Seal Beach Pump Station tributary area covers 249 acres of primarily residential land use. The tributary area is divided into the Seal Beach Pump Station Drainage Area North and Seal Beach Pump Station Drainage Area South. Seal Beach Pump Station Drainage Area North includes 143 acres in Marina Hill North, Marina Hill South, and along Seal Beach Boulevard south of Pacific Coast Highway. Seal Beach Pump Station Drainage Area South includes 106 acres in the Old Town area, generally south of Pacific Coast Highway east of Main Street, north of Ocean Avenue, and east of Seal Beach Boulevard.

Runoff from the Seal Beach Pump Station North Drainage Area is delivered to the station via OCPW's Seal Beach Storm Drain, Facility No. C00P02, a 66" reinforced concrete pipe. Runoff from the Seal Beach Pump Station South Drainage Area is delivered to the station via a 54" reinforced concrete pipe, maintained by the City.

## Response Procedure

For an overflow at a gravity sewer, which may reach the Seal Beach Stormwater Pump Station, maintenance staff will follow the procedures included in Section 5. For an overflow at a sewer pump station, which may

terminate at the Seal Beach Stormwater Pump station, the O&M staff will follow the response procedures included in Section 6 of this report.

The following procedures address the additional requirements for dealing with an overflow that extends to the Seal Beach Stormwater Pump Station.

### Containment and OCPW Notification

The Seal Beach Stormwater Pump Station tributary area within the City's boundary is illustrated on Figure 7-1. A sewer overflow within this area has the potential of terminating at the pump station wet well. If a sewer overflow reaches the Seal Beach Stormwater Pump Station wet well, the maintenance staff will prevent additional raw sewage from entering the storm drain system by containing the overflow to the street, as close to the overflow sewer manhole as possible.

In the event that the overflow reaches the wet well, the maintenance staff will contact the OCPW to disable the storm water pumps to contain the overflow to the wet well and prevent any sewage from reaching the waters of the State, in Anaheim Bay. Combination trucks will then be set up to pump all sewage from the wet well structure.

If there is significant runoff that is filling the wet well that has the potential of flooding of the nearby tributary area, the City will **not** disable the Seal Beach Stormwater Pump Station. Typically, during a wet weather period the Seal Beach Stormwater Pump Station will remain in operation, and any sewage that has entered the wet well will be pumped into the Anaheim Bay. Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system.

If the Seal Beach Stormwater Pump Station has been disabled, the responding maintenance staff will assign one crew to ensure that the sewage is contained and another to correct the cause of the overflow.

The City will keep OCPW updated with the plan of action for containment and clean-up within the Seal Beach Stormwater Pump Station tributary area.

### Clean up

Once the overflow has been corrected and contained, the maintenance staff will clean up all traces of the overflow.

If the overflow has reached the storm water pump station wet well, and the pump station has been disabled, the City combination truck will be used to pump the sewage out of the wet well. The wet well will be separately washed down and the wash water will be vacuumed. All sewage and wash water will be vacuumed from the wet well and disposed of at the Orange County Sanitation District (OCSD) Treatment Plant No. 2 in the City of Huntington Beach. If additional combination trucks are needed, the Responsible Staff will contact neighboring agencies and outside sources to request additional equipment.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will vacuumed and disposed of at the OCSD Treatment Plant No. 2.

If a sewer overflow reaches Anaheim Bay, the Responsible Staff will contact the City's laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**, respectively. They will be provided all reports, notes, and any information regarding the overflow. The John L. Hunter representative will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultants will also evaluate what City actions have and need to be taken to meet the health requirements. Truesdail Laboratories staff will take samples, as necessary.

**Portable aerators** may be required when sewage has entered Anaheim Bay. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultant.



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## SECTION 8 REPORTING PROCEDURES

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### 8-1 State Water Resources Control Board (SWRCB)

#### Requirements

As required by Section (vi)C of the Sewer System Management Plan Requirements, the City shall adhere to:

*“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 State Water Resources Control Board (SWRCB) Monitoring and Reporting Program (MRP).”*

#### California Integrated Water Quality System (CIQWS)

Overflows will be reported to the State Water Resources Control Board (SWRCB) on an electronic overflow reporting form, as part of the “Monitoring and Reporting Program Order No. 2013-0058- EXEC,” for the General Waste Discharge Requirements. All enrollees must report overflows to the California Integrated Water Quality System (CIWQS) sanitary sewer overflow (SSO) database, which can be accessed at the following website:

<https://ciwqs.waterboards.ca.gov/>

The City has registered the Deputy Director of Public Works to certify the SSO reports on the CIWQS online database. The City has initially completed the CIWQS initial collection system questionnaire online form, which includes the following information:

- Sanitary Sewer System Category
- Population
- Operation and Maintenance Budget Sanitary Sewer System Expenditures
- Sanitary Sewer System Employee data
- Employee Certification History
- Sanitary Sewer System Summary (pipe, laterals, siphons, pump stations)
- Wastewater production (Average Dry Weather Flow and Peak Wet Weather Flow)
- Wastewater Discharge Locations

The City will update this form annually, at minimum. If the online form is not completed as required, the City will be unable to submit mandatory overflow reports.

#### City Documentation

The Sewer Overflow Spill Report (Appendix A) will be prepared in the field by the maintenance staff. Once the overflow response activities have been completed, the Sewer Overflow Spill Report, field notes, pictures, and video footage will be provided to the City’s engineering department. The information will be used to submit the draft and final certified reports to the SWRCB, via the CIWQS online reporting database.

#### CIWQS Notification Procedures

As discussed in Section 4-1, overflows fall into four (4) categories: Category 1, Category 2, Category 3, and private lateral sewage discharge (PLSD). The data requested for each type of overflow is summarized in Table 8-1. Screenshots of the website questionnaire for these overflow categories are included in Appendix D. The fields that must be inputted for the draft report and the final certified report are indicated in this table.

#### Category 1

**Category 1** overflows are characterized by overflows of any volume from an enrollee’s sanitary sewer system that results in:

- (1) discharge of sewage to a surface water
- (2) discharge of sewage to a drainage channel that is tributary to a surface water
- (3) discharge of sewage to an MS4

The Deputy Director of Public Works will submit a draft report for any Category 1 overflow within three (3) business days of becoming aware of the SSO. He/she will provide all information required for the draft report to the SWRCB, as indicated in Table 8-1.

The Deputy Director of Public Works will submit the final certified report for any Category 1 overflow within fifteen (15) calendar days of the end date of the SSO. He/she will provide all information required for the final certified report by the SWRCB, as indicated in Table 8-1.

### **Category 2**

**Category 2** overflows are categorized as overflows from an enrollee's sanitary sewer system that results in:

- (1) discharge of sewage greater than 1,000 gallons
- (2) discharge that does not reach surface water, a drainage channel, or MS4

The Deputy Director of Public Works will submit a draft report for any Category 2 overflow within three (3) business days of becoming aware of the SSO. He/she will provide all information required for the draft report to the SWRCB, as indicated in Table 8-1.

The Deputy Director of Public Works will submit the final certified report for any Category 2 overflow within fifteen (15) calendar days of the end date of the SSO. He/she will provide all information required for the final certified report by the SWRCB, as indicated in Table 8-1.

### **Category 3**

Category 3 overflows are categorized as overflows from an enrollee's sanitary sewer system that are not defined as Category 1 or Category 2 overflows.

The Deputy Director of Public Works will submit a final certified report for any Category 3 overflow within thirty (30) calendar days after the end of the calendar month in which the overflow occurs. He/she will provide all information required for the final certified report by the SWRCB, as indicated in Table 8-1.

### **Private Lateral Sewage Discharge (PLSD)**

PLSD overflows are categorized as overflows originating from privately owned sewer laterals that are connected to the City's sewer system.

The State Water Resources Control Board (SWRCB) strongly encourages agencies to voluntarily report private overflows to the CIWQS SSO database.

The Deputy Director of Public Works will submit a report for all PLSD overflows that he/she is aware of. It will include all known information requested by the SWRCB, as identified in Table 8-1. The City will identify the private party that caused the overflow in the report, if this information is available. The City is **not** obligated to certify these PLSD overflow reports.

### **No Spills Certification**

If there are no Sanitary Sewer Overflows within a calendar month, a "No Spill Certification" must be submitted electronically on the CIWQS website.

**Table 8-1  
Summary of CIWQS Report Forms**

CIWQS Question No.				Information Request	Required for Draft	Required for Certification
Category			PLSD Report			
1	2	3				
1	1	1	N.A.	Spill Type:		
2	2	2		Estimate Spill Volumes	X	
2a	2a	2a		Estimated spill volume that reached a separate storm drain that flows to a surface water body?	X	
2b	2b	2b	2b	Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)	X	
2c	2c	2c	2c	Estimated spill volume that reached a drainage channel that flows to a surface water body?	X	
2d	2d	2d	2d	Estimated spill volume recovered from a drainage channel that flows to a surface water body?	X	
2e	2e	2e	2e	Estimated spill volume discharged directly to a surface water body?	X	
2f	2f	2f	2f	Estimated spill volume recovered from surface water body?	X	
2g	2g	2g	2g	Estimated spill volume discharged to land?	X	
2h	2h	2h	2h	Estimated spill volume recovered from the discharge to land? ( do not include water used for cleanup)	X	
3	3	3	3	Did the spill discharge to a drainage channel and/or surface water?	X	
4	4	4	4	Did the spill reach a storm drain pipe that is not part of a combined sewer system?	X	
5	5	5	5	If spill reached a separate storm drain pipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?	X	
6	6	6	1	Spill location name:	X	
7	7	7	8	Latitude of spill location:	X	
8	8	8	9	Longitude of spill location:	X	
9	9	9		County:	X	
10	10	10		Regional Water Quality Control Board:	X	
11	11	11	15	Spill location description:		
12	12	12		Number of appearance points:	X	
13	13	13	16	Spill appearance point:	X	
14	14	14	17	Spill appearance point explanation:	X	
15	15	15	18	Final spill destination:		X
16	16	16	19	Explanation of final spill destination:		

**Table 8-1 (Continued)  
Summary of CIWQS Report Forms**

CIWQS Question No.				Information Request	Required for Draft	Required for Certification
Category			PLSD Report			
1	2	3				
17	17	17	20	Estimated spill start date/time:	X	
18	18	18	21	Date and time sanitary sewer system agency was notified of or discovered spill:	X	
19	19	19	22	Estimated Operator arrival date/time:	X	
20	20	20	23	Estimated spill end date/time:		X
21	21	21	24	Spill cause:		X
22	22	22	25	Spill cause explanation		
23	23	23	28	Where did failure occur?		X
24	24	24	29	Explanation of Where Failure Occurred:		
25	25	25		Was this spill associated with a storm event?		X
26	26	26	30	Diameter of sewer pipe at the point of blockage or failure:		
27	27	27	31	Material of sewer pipe at the point of blockage or failure:		
28	28	28	32	Estimated age of sewer asset at the point of blockage or failure:		
29	29	N.A.	33	Spill response activities:		X
30	30	N.A.	34	Explanation of spill response activities:		
31	31	N.A.	N.A.	Spill response completion date:		X
32	32	N.A.	N.A.	Spill corrective action taken:		X
33	33	N.A.	N.A.	Explanation of spill corrective action taken:		
34a	34a	N.A.	N.A.	Is there an ongoing investigation?		X
34b	N.A.	N.A.	N.A.	Reason for ongoing investigation?		
35	N.A.	N.A.	N.A.	Visual inspection results from impacted receiving water:		
36	N.A.	N.A.	N.A.	Health warnings posted?		X
37	N.A.	N.A.	N.A.	Did the spill result in a beach closure		X
38	N.A.	N.A.	N.A.	Name of impacted beach(es) (enter NA if None):		X
39	N.A.	N.A.	N.A.	Name of impacted surface water(s) (enter Un-named Tributary to XXXXX where XXXXX is the name of first named downstream tributary if receiving surface water body is un-named):		
40	N.A.	N.A.	N.A.	Water quality samples analyzed for:		X
41	N.A.	N.A.	N.A.	Explanation of water quality samples analyzed for:		
42	N.A.	N.A.	N.A.	Water quality sample results reported to:		X
43	N.A.	N.A.	N.A.	Explanation of water quality sample results reported to:		
44	35	30	30	Explanation of volume estimation methods used:		X
45	N.A.	N.A.	N.A.	Cal OES Control Number	X	
46	N.A.	N.A.	N.A.	Cal OES Called Date/Time	X	
47a	36A	30A	N.A.	47(a) - Name and Title (Contact person who can answer specific questions about this SSO)	X	
47b	36B	30B	N.A.	Contact Person Phone Number	X	
			26	PLSD Source		
			27	Explanation of PLSD Source		

### Reporting Requirements for Category 1 (Greater than 50,000 gallons)

**Definition:** Overflows from an enrollee's sanitary sewer system that results in:

- (1) discharge greater than 50,000 gallons
- (2) discharge of sewage to a surface water
- (3) discharge of sewage to a drainage channel that is tributary to a surface water
- (4) discharge of sewage to an MS4

In addition to the CIWQS Category 1 SSO report submittal, the Deputy Director of Public Works will also need to prepare a Sanitary Sewer Overflow Technical Report for overflows with discharges greater than 50,000 gallons. He/she will submit a technical report in the CIWQS online SSO database within 45 days of the end of the overflow.

At minimum, the report shall include the following:

- Detailed description of how and when the overflow was discovered
- Diagram illustrating the overflow failure point, appearance point(s) and final destination(s)
- A detailed description of the volume calculation method of the total overflow and of the recovered sewage
- Description of the cause of the overflow
- Copies of all original field crew initial reports, records, and documents
- Historical maintenance records of the failure location
- Detailed chronological response of all actions that were taken to respond to the overflow
- Detailed description of how the SSMP Overflow Emergency Response Plan was used to respond to the overflow.
- Final corrective action(s) completed and/or planned to be completed including a schedule for actions not yet completed.
- Details regarding all water quality sampling activities, including all analytical results and evaluations. The sampling will include the following, at minimum:
  - Dissolved oxygen
  - Total ammonia
  - Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan water quality objective or as directed by the Regional Water Quality Control Board
  - pH
  - Electrical Conductivity
  - Temperature
  - Biochemical Oxygen Demand (BOD or CBOD)
- Map of water quality sampling points

### 8-2 California Office of Emergency Services (Cal OES)

As discussed in Section 4-3, the California Office of Emergency Services (Cal OES) will be initially contacted if an overflow greater than or equal to 1,000 gallons has reached surface waters, a drainage channel tributary to a surface water, and/or a municipal separate storm sewer system (MS4). The Responsible Staff will contact Cal OES within 2 hours of the overflow verification.

As indicated by California Code of Regulations (CCR), Title 19, Chapter 4, Article 2, Sections 2705, the City is required to send an Emergency Release Follow-Up Notice Reporting Form to Chemical Emergency Planning and Response Commission (CEPRC). The sample form is included in Appendix E.

**Chemical Emergency Planning and Response Commission (CEPRC)**  
**3650 Schriever Avenue**  
**Mather, CA 95655**

The CCR includes a form, indicating the information required from the Responsible Staff. At minimum, the report shall include the following:

- Business Name
- Emergency Contact and Phone number
- Date and time of Incident
- OES Control No.
- Incident Address
- Overflow Type
- Quantity of Overflow
- Contamination Areas
- Time of Release
- Actions taken to stop and contain the overflow
- Health effects
- Comments
- Certification

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## SECTION 9 EMERGENCY OPERATIONS

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### 9-1 General

In the event of a sewer overflow, the City will follow the procedures to correct the problem, contain the overflow, and clean-up the affected area, as detailed in the following Sections of this report:

- Section 5: Gravity Sewer Overflow Procedures
- Section 6: Sewer Pump Station and Forcemain Overflow Procedures
- Section 7: Storm Water Retarding Basin Overflow Containment Procedures

In the event that a large overflow reaches waters of the State or may potentially affect the general public, the City may need to contact its approved environmental consultant; provide additional public advisory; notify the media; and/or set-up additional traffic control.

### 9-2 Laboratory and Environmental Consultant Notification Procedures

If the overflow has reached the waters of the State, the Responsible Staff will contact the City approved laboratory and environmental consultants:

Laboratory  
**Truesdail Laboratories**  
**((714) 734-6239)**

Environmental Consultant  
**John L. Hunter & Associates**  
**(562) 802-7880**

The environmental consultant will be provided all reports, notes, and any information regarding the overflow. John L Hunter & Associates staff members will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. They will also evaluate what City actions have and need to be taken to meet the health requirements. Truesdail Laboratories staff will take all samples of the receiving waters that are required by the State Water Resources Control Board (SWRCB).

As detailed in Section 8-2, a detailed Sanitary Sewer Overflow Technical Report will need to be prepared for any overflow greater than 50,000 gallons that reach the waters of the State. Truesdail Laboratories will be contacted to collect all water quality samples. The environmental consultant will conduct detailed environmental analyses, as required by the SWRCB.

### 9-3 Public Advisory Procedures

The City will provide any signage and/or other public notification required by the California Office of Emergency Services (Cal OES) or the Orange County Health Care Agency (OCHCA)

If deemed necessary, the City will notify the public of sanitary sewer overflows. As more information becomes available, the responding maintenance staff will communicate with the Utilities Maintenance Manger, Maintenance Services Supervisor and Deputy Director of Public Works. They may decide that signs need to be posted to prohibit the use of the affected areas, such as the beach. The signage is a precautionary measure used to warn the public of the overflow.

### 9-4 Media Notification Procedures

If the overflow has been assessed as a threat to the public health, the media must be notified to inform the public. The following procedure shall be followed.

- The responding maintenance verifies the overflow and reports to the Utilities Maintenance Manager, who will act as the Responsible Staff. If unavailable, the Maintenance Services Supervisor will act as the Responsible Staff.



- The Responsible Staff will inform the Deputy Director of Public Works, if they have not yet been informed.
- As stated in Section 4, the Responsible Staff will contact the Office of Emergency Services (OES), Orange County Health Care Agency (OCHCA), and the Orange County Public Works (OCPW) of a sewer spill greater than 1,000 gallons that has either reached surface waters, a drainage channel tributary to surface waters, or storm drain which the sewer spill has not been full captured.
- The Orange County Health Care Agency (OCHCA) will determine if and when the media will be informed of an overflow incident.
  - **Office Staff:** (714) 433 – 6419
  - **Dan Yokoyama:** (714) 433 – 6288
  - **Larry Brennier:** (714) 433 – 6284
  - **Juan Anzora** (714) 433 - 6287
  - **After Hours:** (714) 628 – 7008

#### **9-5 Traffic Control**

If an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The City of Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

**City of Seal Beach Police Department: (562) 799-4100**

All traffic control will comply with the Work Area Traffic Control Handbook (Watch) standards.

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## SECTION 10 TRAINING

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### 10-1 Distribution

The Sanitary Sewer Overflow Emergency Response Plan (SSOERP) will be distributed to:

1. Public Works (2 copies)
2. Deputy Director of Public Works (1 copy)
3. Director of Public Works (1 copy)
4. Maintenance Services Supervisor (1 copy)
5. Response Vehicles (2 Copies)
6. File

The plan will be made available to the public for review at the City of Seal Beach's Public Works Counter. Copies of the plan will be made available to the public when requested in writing, at the cost of producing the document.

### 10-2 Updating

The Sanitary Sewer Overflow Emergency Response Plan will be reviewed:

1. Following each overflow incident,
2. As the requirements of Order No. 2006-0003 pertaining to the preparation of SSEORP are revised,
3. Annually, as required by Order No. 2006-0003,
4. As new facilities are constructed,
5. As contact information changes, or
6. Based upon information developed during the field and office training sessions.

Subsequent revisions will be based upon recommendations resulting from the reviews listed above, under the direction of the Utilities Maintenance Manager.

The revised plans will include the revision number, nature of the revision, and the revision date.

### 10-3 Training

Annual Sanitary Sewer Overflow and Response training will occur in the office and in the field. The Maintenance Services Supervisor is responsible for scheduling and documenting training sessions for City staff.

**Office training** of maintenance staff shall be conducted by the Maintenance Services Supervisor. This will involve complete review of the following:

1. The SSOERP plan document review
2. Review of initial notification procedures
3. Understanding of Sewer and Storm Drain Maps
4. Preparation of the Sanitary Sewer Overflow (SSO) Spill Report (Included in Appendix B)
5. Regulatory agency reporting
6. Post-Response activities

**Office training** for the **City of Seal Beach Public Works Department** personnel who will receive the initial overflow notification and who are responsible to dispatch the appropriate staff will be conducted by the Maintenance Services Supervisor. Training shall include the correct procedures for receiving calls, recording the information on the Sanitary Sewer Overflow Initial Receipt Form, and notification of the maintenance staff.

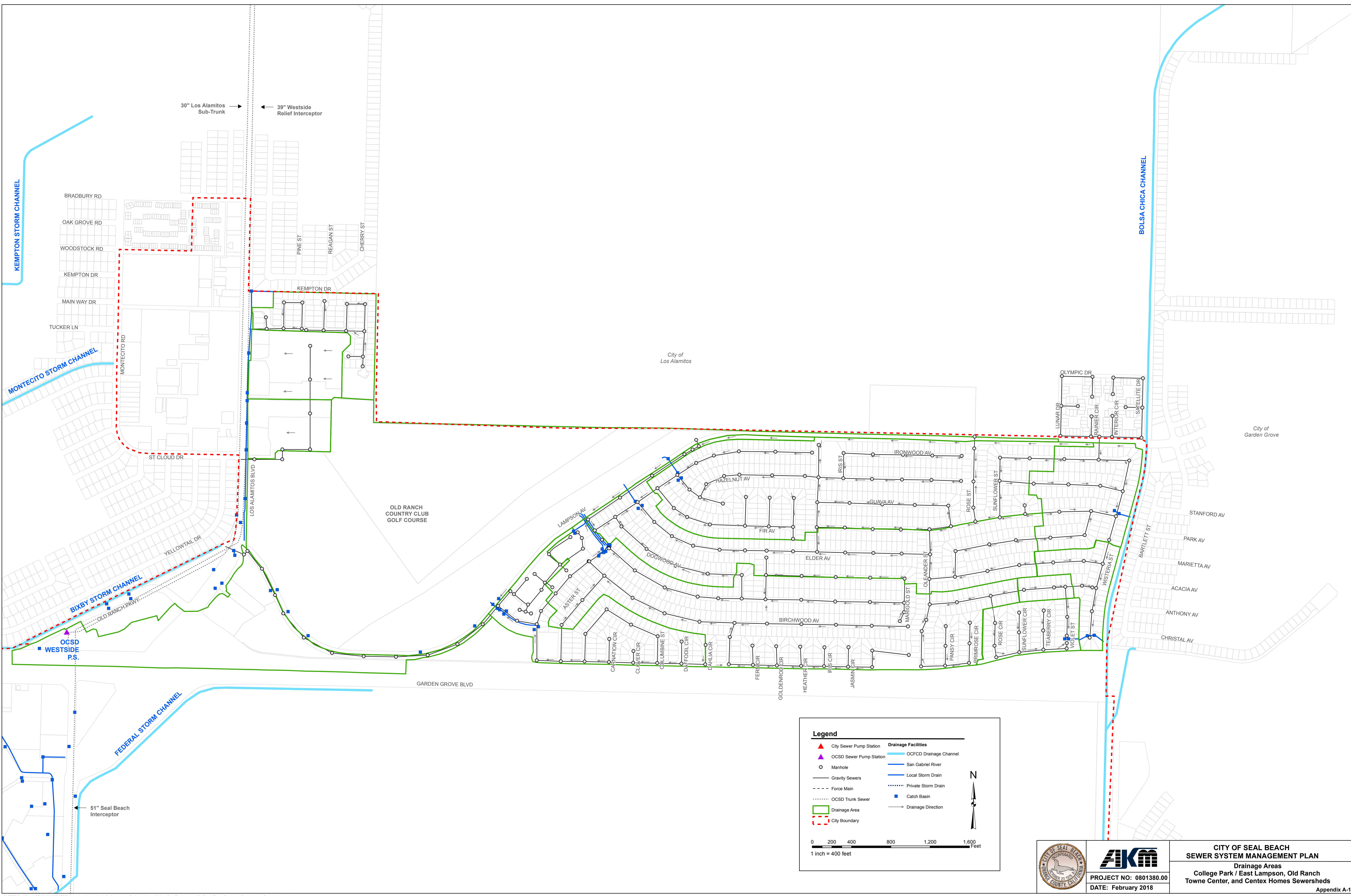
**Field Training** of the **maintenance staff** will be conducted once per year by the Maintenance Services Supervisor. This will consist of complete review of the plan document, with emphasis on:

1. Safety Procedures
2. Securing of the impacted site
3. Procedures for containing the overflow
4. Methods of eliminating the cause of the overflow

5. Response to emergencies involving sewer pump station and forcemains
6. Responses to emergencies involving overflows that reach storm water retarding basins and/or stormwater pump station
7. Physical training including but not limited to:
  - o Containing a mock overflow using sand bags, plastic sheets, rubber mats, and earth berms
  - o Plugging storm drain manholes
  - o Setting up by-pass pumping
  - o Using sewer plugs
8. Cleanup Procedures
9. Response recommendations

Any new staff that has not participated in the annual training will be separately trained by the Maintenance Services Supervisor during his/her first week of employment.





**Legend**

▲ City Sewer Pump Station	Drainage Facilities
▲ OCSB Sewer Pump Station	OCFCD Drainage Channel
○ Manhole	San Gabriel River
— Gravity Sewers	Local Storm Drain
- - - Force Main	Private Storm Drain
..... OCSB Trunk Sewer	Catch Basin
Drainage Area	Drainage Direction
City Boundary	

0 200 400 800 1,200 1,600 Feet  
1 inch = 400 feet

N

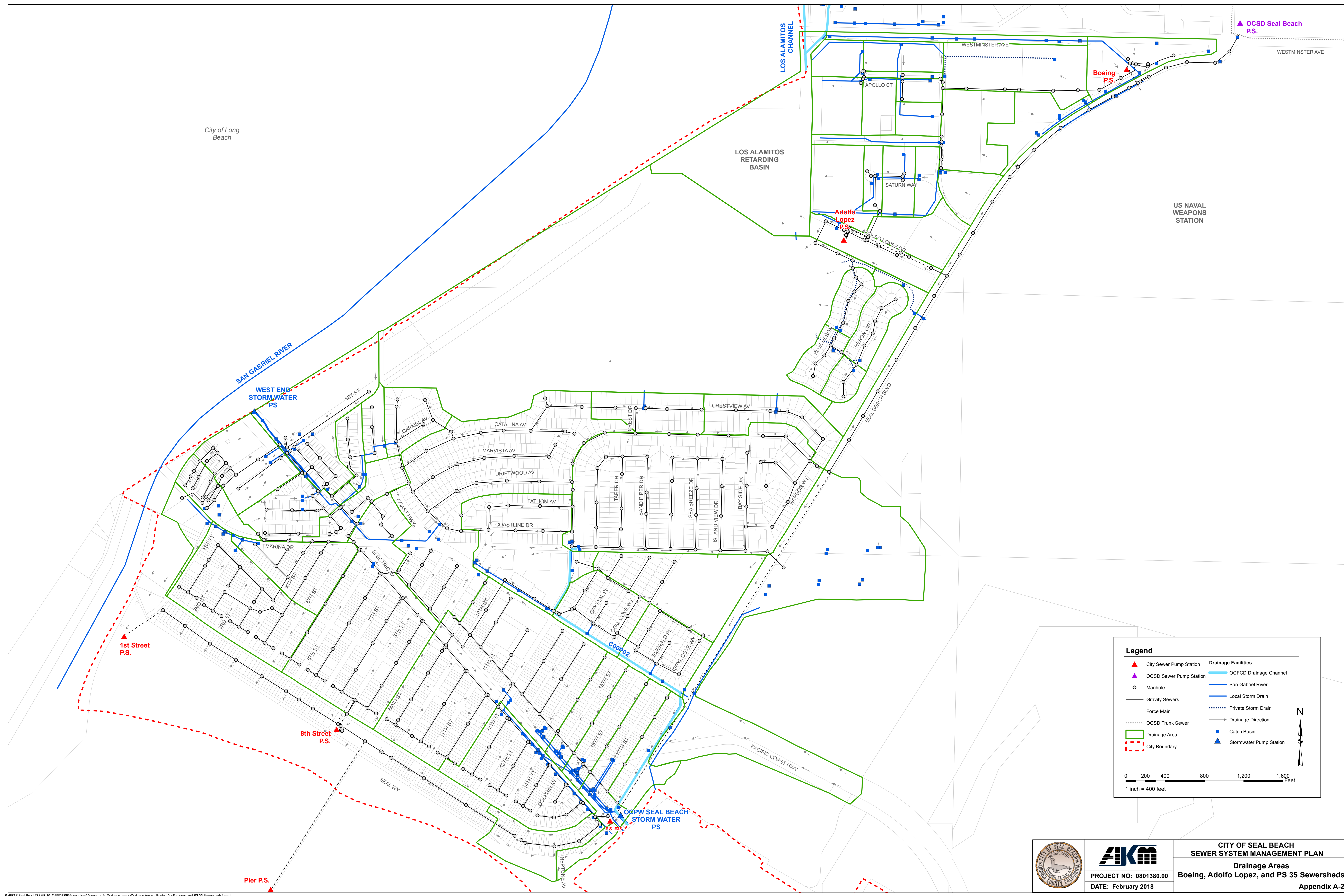


**AKM**  
PROJECT NO: 0801380.00  
DATE: February 2018

**CITY OF SEAL BEACH  
SEWER SYSTEM MANAGEMENT PLAN**  
Drainage Areas  
College Park / East Lampson, Old Ranch  
Towne Center, and Centex Homes Sewersheds  
Appendix A-1

R:\BPP\Seal Beach\SSMP 2017\SSC\Appendices\Appendix\_A\_Drainage\_maps\Drainage Areas - College Park East Lampson Old Ranch Towne Center and Centex Homes Sewersheds1.mxd





**Legend**

▲ City Sewer Pump Station	OCFCD Drainage Channel
▲ OCSB Sewer Pump Station	San Gabriel River
○ Manhole	Local Storm Drain
— Gravity Sewers	Private Storm Drain
- - - Force Main	Drainage Direction
..... OCSB Trunk Sewer	Catch Basin
Drainage Area	Stormwater Pump Station
City Boundary	

0 200 400 800 1,200 1,600 Feet  
1 inch = 400 feet

		<b>CITY OF SEAL BEACH</b> <b>SEWER SYSTEM MANAGEMENT PLAN</b>	
		<b>Drainage Areas</b> <b>Boeing, Adolfo Lopez, and PS 35 Sewersheds</b>	
		PROJECT NO: 0801380.00 DATE: February 2018	Appendix A-2

R:\RPTS\Seal Beach\SSMP 2017\SSOERP\Appendices\Appendix\_A\_Drainage\_maps\Drainage Areas - Boeing Adolfo Lopez and PS 35 Sewersheds1.mxd



**CITY OF SEAL BEACH  
SANITARY SEWER OVERFLOW (SSO) SPILL REPORT**

**Date of Incident:** \_\_\_\_\_ **Call Time:** \_\_\_\_\_ **Arrival/Start:** \_\_\_\_\_ **End:** \_\_\_\_\_

**Location of Incident:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

- Category 1 (Seal Beach Sewer)** A spill of any volume that reaches surface water or drainage channel. A spill that enters the storm drain system and is not fully recovered is considered to have reached surface water.
- Category 2 (Seal Beach Sewer)** A spill greater than or equal to 1,000 gallons and does not reach surface water (if the spill enters the storm drain system it must be fully captured and recovered).
- Category 3 (Seal Beach)** All other spills that do not reach surface water (fully captured/recovered).
- Private Lateral**

**Incident Component:**     Manhole     Clean Out     Interceptor     Other \_\_\_\_\_

**Cause of Blockage:** (Check all that Apply)

- Roots             Debris             Construction     Manhole Failure     Power Failure
- Grease            Line Break       Interceptor       Pump Station Failure    Rocks
- Unknown         Other \_\_\_\_\_

**Entered Storm Drain?**    Yes    No            **Contained/Recovered in Storm Drain?**     Yes    No

**Hot Spot?**                     Yes    No            **Storm Drain Location:** \_\_\_\_\_

**Photographs Taken?**    Yes    No            **Inches of Precipitation Past 72 Hrs?** \_\_\_\_\_

**Reported by**

**Property Owner/Agent/Manager/Spill Witness**

Name: \_\_\_\_\_ Name: \_\_\_\_\_

Address: \_\_\_\_\_ Address: \_\_\_\_\_

Tel #: \_\_\_\_\_ Tel #: \_\_\_\_\_

**Name(s) of Employee(s) Responding:** (Check all that Apply)

\_\_\_\_\_  
\_\_\_\_\_

**Action Taken:** (Check all that Apply)

- Contained w/ Sandbags     Rubber Mats Over Inlet     Photos Taken
- Notified Proper Agencies     Made Spill Calculations     Broke Blockage
- Flow Returned to Normal     Washed & Vacuumed     Other \_\_\_\_\_
- Talked to Residents/Witnesses

**Overflow Description:** (Attach Additional Sheet, if Needed)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Spill Volume: \_\_\_\_\_ gal                      Spill Volume Recovered: \_\_\_\_\_ gal

Spill Calculation:  Option 1     Option 2     Option 3     Option 4     Other \_\_\_\_\_

Blockage Location: \_\_\_\_\_ Blockage Broke Time: \_\_\_\_\_ am / pm

Wash Water Volume: \_\_\_\_\_ gal                      Wash Water Recovered: \_\_\_\_\_ gal

Spill Start Time: \_\_\_\_\_ am / pm    Spill Stop Time: \_\_\_\_\_ am / pm

Final Destination of Overflow: \_\_\_\_\_

**THE FOLLOWING MUST BE NOTIFIED IN THE CASE OF A SEWAGE SPILL**

**For Category 1 spills (Greater than 1,000 gallons) call OES, OCHCA and OC Public Works.**

**1) Orange County Health Care Agency (OCHCA)**

(Call down the list in order, until someone has been contacted)

- (1) Office Support Staff            (714) 433-6419
- (2) Larry Brennler:                (714) 433-6280    **Contacted:**  Yes  No
- (3) Dan Yokoyama:                (714) 433-6288    **Time:** \_\_\_\_\_ am / pm
- (4) Juan Anzora:                    (714) 433-6287    **Spoke to:** \_\_\_\_\_
- (5) Lauren Hatch:                 (714) 433-286
- (6) *After Hours:*                 (714) 628-7008 (Control One Monitoring)

**If a spill reaches surface water (Category 1 or Private Lateral) and if the spill is greater than 1,000 gallons, notify: 1) OCHCA, 2) OC Public Works, and 3) OES/Cal EMA (get a control number). This must be done within 2 hours.**

**2) OES/CAL EMA – Get a Control Number**

Phone:        (800) 852-7550                      **Contacted Within 2 Hours:**     Yes  No

**Time:** \_\_\_\_\_ am/pm    **Spoke to:** \_\_\_\_\_    **Control #** \_\_\_\_\_

**3) OC Public Works/OCFCD (OC Flood Control District)**

(714) 955-0600

24 Hr. Hotline: (877) 897-7455                      **Time:** \_\_\_\_\_ am / pm

(Control One Monitoring) (714) 628-7008                      **Spoke to:** \_\_\_\_\_

**All Significant After Hours Spills:**

Utilities Maintenance Manager                      Cell (xxx) xxx-xxxx      After Hours (xxx) xxx-xxxx

Maintenance Service Supervisor                      Cell (xxx) xxx-xxxx      After Hours (xxx) xxx-xxxx

Deputy Director of Public Works/ City Engineer                      (xxx) xxx-xxxx

Assistant Engineer                      (xxx) xxx-xxxx

**Emergency Services:**

Orange County Fire Department:                      (714) 744-0455                      Alternate: (9-1-1)

Seal Beach Police Department:                      (562) 799-4100                      Alternate: (9-1-1)

Southern California Edison:                      (800) 611-1911

**Emergency Contractors:**

<b>Contractor</b>	<b>Services</b>	<b>Telephone Number</b>
JIMNI Systems, Inc.	Electrical/Control Systems	(949) 770-7654
Doty Bros.		(562) 864-6566
Empire Pipe Cleaning and Equipment, Inc.	Pipe Cleaning/Repair	(714) 639-8352
National Plant Services, Inc.	Spill Containment Equipment	(562) 437-3574
Rain-for-Rent	Spill Containment	(800) 559-8208
Charles King Co.	Bypass Pumping	(562) 426-2974

**Surrounding Agencies:**

<b>Sewer Agency</b>	<b>Telephone Number</b>
Orange County Sanitation District	(714) 593-7025
City of Long Beach	(562) 570-2300
Rossmoor/Los Alamitos Area Sewer District	(562) 431-2223
Sunset Beach Sanitary District	(562) 493-9932
Leisure World	(562) 431-6586
Garden Grove Sanitary District	(714) 741-5375

**Environmental Consultants**

Truesdail Laboratories:                      (714) 730-6239

John L. Hunter & Associates:                      (562) 802-7880

**CITY OF SEAL BEACH  
SANITARY SEWER OVERFLOW (SSO) SPILL REPORT**

**Date of Incident:** \_\_\_\_\_ **Call Time:** \_\_\_\_\_ **Arrival/Start:** \_\_\_\_\_ **End:** \_\_\_\_\_

**Location of Incident:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Category 1 (Seal Beach Sewer)** A spill of any volume that reaches surface water or drainage channel. A spill that enters the storm drain system and is not fully recovered is considered to have reached surface water.

**Category 2 (Seal Beach Sewer)** A spill greater than or equal to 1,000 gallons and does not reach surface water (if the spill enters the storm drain system it must be fully captured and recovered).

**Category 3 (Seal Beach)** All other spills that do not reach surface water (fully captured/recovered).

**Private Lateral**

**Incident Component:**     Manhole     Clean Out     Interceptor     Other \_\_\_\_\_

**Cause of Blockage:** (Check all that Apply)

- Roots     Debris     Construction     Manhole Failure     Power Failure  
 Grease     Line Break     Interceptor     Pump Station Failure     Rocks  
 Unknown     Other \_\_\_\_\_

**Entered Storm Drain?**     Yes     No

**Contained/Recovered in Storm Drain?**     Yes     No

**Hot Spot?**     Yes     No

**Storm Drain Location:** \_\_\_\_\_

**Photographs Taken?**     Yes     No

**Inches of Precipitation Past 72 Hrs?** \_\_\_\_\_

**Reported by**

**Property Owner/Agent/Manager/Spill Witness**

Name: \_\_\_\_\_ Name: \_\_\_\_\_

Address: \_\_\_\_\_ Address: \_\_\_\_\_

Tel #: \_\_\_\_\_ Tel #: \_\_\_\_\_

**Name(s) of Employee(s) Responding:** (Check all that Apply)

\_\_\_\_\_  
\_\_\_\_\_

**Action Taken:** (Check all that Apply)

- Contained w/ Sandbags     Rubber Mats Over Inlet     Photos Taken  
 Notified Proper Agencies     Made Spill Calculations     Broke Blockage  
 Flow Returned to Normal     Washed & Vacuumed     Other \_\_\_\_\_  
 Talked to Residents/Witnesses

**Overflow Description:** (Attach Additional Sheet, if Needed)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Spill Volume: \_\_\_\_\_ gal                      Spill Volume Recovered: \_\_\_\_\_ gal

Spill Calculation:  Option 1     Option 2     Option 3     Option 4     Other \_\_\_\_\_

Blockage Location: \_\_\_\_\_ Blockage Broke Time: \_\_\_\_\_ am / pm

Wash Water Volume: \_\_\_\_\_ gal                      Wash Water Recovered: \_\_\_\_\_ gal

Spill Start Time: \_\_\_\_\_ am / pm    Spill Stop Time: \_\_\_\_\_ am / pm

Final Destination of Overflow: \_\_\_\_\_

**THE FOLLOWING MUST BE NOTIFIED IN THE CASE OF A SEWAGE SPILL**

For Category 1 spills (Greater than 1,000 gallons) call OES, OCHCA and OC Public Works.

**1) Orange County Health Care Agency (OCHCA)**

(Call down the list in order, until someone has been contacted)

- (1) Office Support Staff                      (714) 433-6419
- (2) Larry Brennler:                      (714) 433-6280                      **Contacted:**  Yes  No
- (3) Dan Yokoyama:                      (714) 433-6288                      **Time:** \_\_\_\_\_ am / pm
- (4) Juan Anzora:                      (714) 433-6287                      **Spoke to:** \_\_\_\_\_
- (5) Lauren Hatch:                      (714) 433-286
- (6) *After Hours:*                      (714) 628-7008 (Control One Monitoring)

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**3) OC Public Works/OCFCD (OC Flood Control District)**

(714) 955-0600

24 Hr. Hotline: (877) 897-7455                      **Time:** \_\_\_\_\_ am / pm

(Control One Monitoring) (714) 628-7008                      **Spoke to:** \_\_\_\_\_

**All Significant After-Hours Spills:**

Maintenance Service Supervisor: Office (562) 431-2527 x1431 After Hours (562) 370-3483

Director of Public Works: (562) 431-2527 x1321

**Emergency Services:**

Orange County Fire Department: (714) 744-0455 Alternate: (9-1-1)

Seal Beach Police Department: (562) 799-4100 Alternate: (9-1-1)

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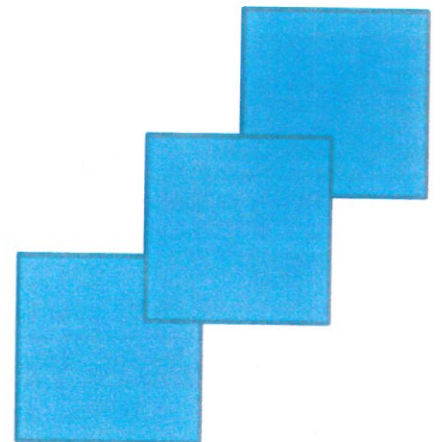
John L. Hunter & Associates: (562) 802-7880





# SEWER SPILL ESTIMATION GUIDE

**Developed by the Orange County  
Area Waste Discharge Requirements  
Steering Committee**





# **Sewer Spill Estimation Guide**

**A Guide to Estimating Sanitary Sewer Overflow (SSO) Volumes**

**Developed by the Orange County Area  
Waste Discharge Requirements Steering Committee  
Orange County, CA**

**February 18, 2014**

## Acknowledgements

This Sewer Spill Estimation Guide has been compiled through the efforts of members of the Orange County Wastewater Discharge Requirements (WDR) Steering Committee. This committee was originally formed to address the requirements of the original WDR imposed by the California Regional Water Quality Board, Region 8 and later the statewide WDR imposed by the California State Water Resources Control Board. Committee members who assisted in the compilation of this Sewer Spill Estimation Guide are:

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Peggy Echavarria	Executive Assistant	Orange County Sanitation District
Gene Estrada	Environmental Program Manager	City of Orange
Rob Hamers	District Engineer	Costa Mesa Sanitary District
Robert Kreg	(Former) Director of Support Services	South Coast Water District (Retired)

## Disclaimer

This Sewer Spill Estimation Guide is freely offered to agencies to assist the user with the estimation process for a sanitary sewer overflow. Methods used for spill estimation and the estimate itself are solely the responsibility of the agency making the estimate. The authors or contributors to this Sewer Spill Estimation Guide do not accept any responsibility for the spill estimation methods used; their accuracy or any spill estimate determined through the use of this guide. Information found in this guide is commonly available on the internet and is also common practice with many cities and sewerage agencies throughout Southern California.

No statewide or national standards issued by a regulatory agency exist at this time.



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## SSO Volume Estimation

Accurate flow estimation is essential to determine the volume of a Sanitary Sewer Overflow (SSO). An accurate estimate of an SSO is required for reporting to the California Integrated Water Quality System (CIQWS) and to the Orange County Health Care Agency. The estimated volume of an SSO is used to determine the category of the SSO and can also be used in the calculation of penalties or fines from the State or Regional Water Quality Control Boards in California. Additionally, accurate flow estimation is important to determine the extent of the cleanup and its effectiveness.

Volume estimation is basically the flow rate (gallons per minute) times the amount of time (in minutes) the flow has occurred. Each SSO tends to be unique requiring different strategies for determining the volume of the SSO. Different methods can also be used for the same SSO acting as a check to ensure the most accurate estimate. The method(s) utilized will be determined by several factors including the type of SSO and the personnel responding. Some SSO volumes, due to terrain, rainfall or other factors, can be very difficult for field staff to determine and may require someone with additional expertise. There is no one method that works for all types of SSOs. The following are methods that may be utilized for SSO volume estimation. These methods are effective means of estimating a sewer spill volume during dry weather but may not be effective during rain events.

During rain events, infiltration and/or inflow into the collection system and runoff in the stormwater system, including the curb and gutter, can affect the SSO estimate. When estimating an SSO during a rain event, the SSO estimate is to include only the wastewater that left the collection system and not any waters that the wastewater comingled with after leaving the system. The same is true for any wash down water; although contaminated, the water is not considered part of the SSO estimate. Any water that infiltrated into the collection system upstream of the SSO and subsequently became part of the SSO is included in the SSO volume estimate.

## Start Time

Determining the start time for an SSO is one of the most critical, yet can be one of the most difficult, factors to determine. Depending upon the location and time of day, an SSO may occur for some time before it is reported to the City or Agency or it may trickle for an extended period of time before being noticed. What is known is that the SSO started some time before the City or Agency was notified. It is common for SSOs to start and stop as flows in the pipeline routinely rise and fall because most blockages do not entirely block the flow in the pipe. Every effort should be utilized to determine the most accurate start time of each SSO.

These efforts may include:

- If possible, contact the person who reported the SSO to determine when they became aware of the SSO.
- Make contact with residences or businesses in the area of the SSO to determine if there were any witnesses that could help establish the start time.
- Conditions change during the SSO. This is particularly true in remote areas out of public view. Initially, there may be an amount of toilet paper and solids around the spill site. This will increase the longer the SSO continues. After a few days to a week, these may form a light brown residue that may turn dark after a few weeks to a month.

## Stop Time

The stop time is the time that wastewater stopped overflowing. For manhole covers in low areas, this is noted by water flowing back into the manhole through the vent holes and should be easy to determine by SSO response personnel. Care should be taken to accurately record the time that the SSO stopped.

## Photographs

Take photographs of the spill event. Try to include objects of known size in the photographs to give a perspective of the extent of the spill. Photographs should include the initial spill, remediation efforts, clean up, and the spill area after the spill remediation has been completed. Photographs should be maintained with the spill report information.

## Flow Rate

The flow rate is the volume of flow per unit time that is escaping from the collection system. SSOs do not always occur at a constant rate. This is because flows into the collection system are not constant and rise and fall throughout the day. Additionally, most blockages are not full blockages. Pressure buildup as the wastewater surcharges in the pipe can cause the blockage to clear or partially clear, resulting in changes to the flow rate.

To make an SSO volume estimate as accurate as possible, the onsite City or Agency employee should note the time and the amount of change of any significant differences in flow noticed during the event. For example, if the employee determines the flow rate escaping from the manhole is 100 gallons per minute when they arrive on scene but noticed that it has dropped to 50 gallons per minute five minutes later, their report should reflect that fact. The estimated flow rate and the time period for that flow rate should be recorded. During any one SSO event there could be multiple flow rates spread over the duration of the SSO.

## Volume Estimation Methods

### Visual or Eyeball Method

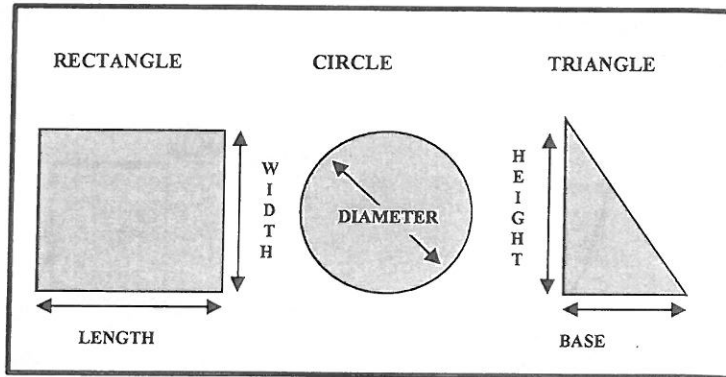
The volume of small spills can be estimated using an “eyeball estimate.” To use this method, imagine the amount of water that would spill from a bucket or a barrel. A full bucket may contain 1, 2 or 5 gallons and a barrel contains 55 gallons when full. If the spill is larger than 55 gallons, try to divide the standing water into barrels and then multiply by 55 gallons. This method is useful for contained spills up to approximately 200 gallons. This method can be useful on spills that occur on hard surfaces such as concrete or asphalt. Crews can be trained by estimating the volume of a measured amount of potable water spilled upon concrete and asphalt surfaces.

### Measured Volume

The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and

dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

*Common Shapes and Dimensions*



1. Sketch the shape of the contained wastewater.
2. Measure or pace off the dimensions.
3. Measure the depth at several locations and select an average.
4. Convert the dimensions, including depth, to feet.
5. Calculate the area:

Rectangle: Area = length (feet) x width (feet)

Circle: Area = diameter (feet) x diameter (feet) x 3.14 divided by 4

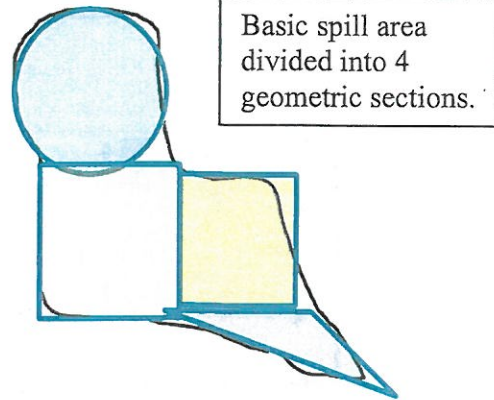
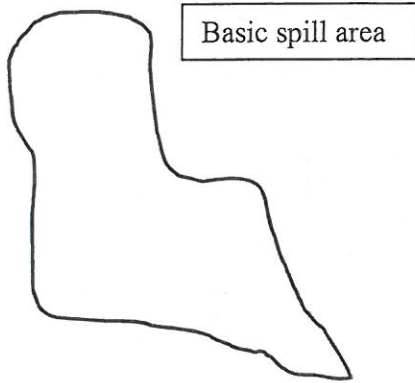
Triangle: Area = base (feet) x height (feet) x 0.5

6. Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.
7. Multiply the volume in cubic feet by 7.48 to convert to gallons

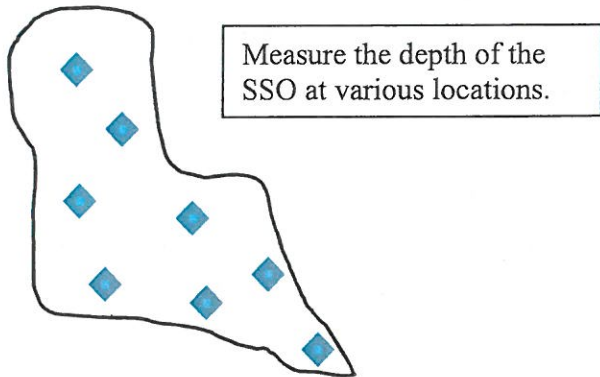


Not all SSOs will conform to a specific shape. When this occurs, break up the area of the SSO into various shapes or segments, then calculate the amount of wastewater spilled in each segment, adding them together to arrive at the total spill volume.

Example:



Determine the area of each of the geometric sections adding them all together to determine the total area of the spill.



Where it is difficult to measure wet spots on asphalt, use a depth of 0.0026' or 1/32". For wet spots on concrete use depths of 0.0013' or 1/64" for reasonable estimates.

Inch to Feet Conversion:		
Inches	to	Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'

Sample Calculation:  
A 20 ft x 20 ft square wet spot on concrete equals 3.9 gal and for asphalt is 7.8 gal.



## Counting Connections

Once the location of the blockage has been established, the amount of the SSO could be estimated by counting the number of upstream connections. On the sewer atlas maps or GIS system, locate the pipeline where the SSO occurred. Count all of the developed parcels that are connected to the pipeline upstream of the blockage. The typical single family residential parcel may discharge 8 to 10 gallons of wastewater per hour during active times of the day. For a multi-family residential development such as an apartment or condo complex, count each apartment as a single family residential unit. Use the higher flow number (10 gallons per hour) during typical peak flow hours and the lower flow number (8 gallons per hour) during low flow periods. Multiply the number of connections times the average flow (8 to 10 gallons per hour) times the time period (duration) that the SSO occurred.

Example for an SSO occurring on a weekday at 8:00am:

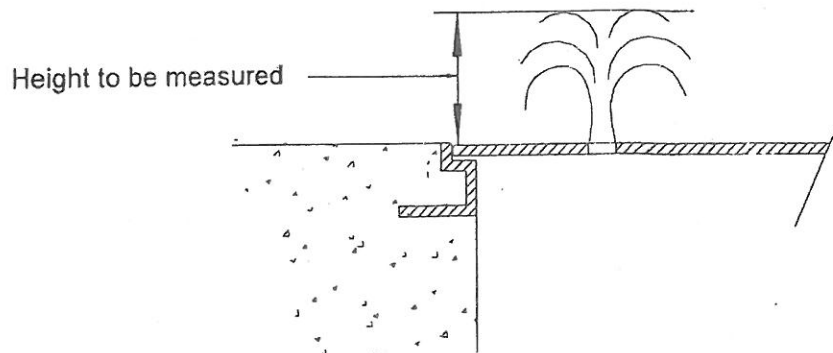
Number of upstream connections	22
Estimated flow per parcel	10 gallons per hour
Duration of SSO event	45 minutes
Total spill estimation (22 x 10 x .75)	165 gallons
(22 connections x 10 gallons per hour x 45 minutes (.75 hour) = 165 gallons)	

Data may be available in your drainage area from your capacity planners at your city or agency. Consult with them on reasonable flow amounts or rates of flow.

## Pick and Vent Holes in Manhole Covers

Small SSOs will occur where the wastewater escaping from the manhole is isolated to the pick or vent holes in the cover. Larger SSOs may involve both the discharge from the pick and/or vent holes and the gap between the manhole cover and manhole frame. To estimate an SSO occurring from the manhole pick and vent holes, measure the height of the wastewater plume exiting the holes. Find that height and hole diameter on the manhole pick or vent hole chart to determine the flow rate escaping the pick/vent hole. Multiply the flow rate times the number of holes that are discharging wastewater. Once the total volume (gpm) has been determined,

multiply the gpm by the duration of the SSO in minutes. This will result in the total estimated gallons of the SSO.



Example: Measured height of plume exiting pick/vent hole is 1 inch from a 1/2-inch vent hole and there are 4 vent holes. The total volume per minute would be .94 gpm per hole (from attached chart) or 3.76 gpm total (.94 gpm x 4 holes) from the manhole cover. If the SSO lasted one hour, the total wastewater lost would be 226 gallons (3.76 x 60 = 225.6).

Number of pick holes	4
Flow from each pick hole	.94 gpm
Duration of SSO	60 minutes
Total SSO volume (.94 x 4 x 60=225.6)	226 gallons

## Pick and Vent Hole Estimation Chart

Estimated Flows thru Manhole Cover Vent Holes and Pick Holes for SSO estimating

Hole Dia. inches	Area sq. ft. Formula: =0.785*Ax*A x/144	Coeff. of Vel. Cv	Coeff. Of Cont. Cc	C Cv x Cc Formula: =Ix*449	Water Ht inches	Water Ht inches	Water Ht feet Formula: =Gx/12	Q cfs Formula: =Ex*Bx*(SQRT( 2*32.2*Hx))	Q gpm Formula: =Ix*449	Q gph Formula: =Jx*60
<b>Vent Hole</b>										
0.50	0.00136	0.945	0.70	0.662	1/16 th	0.063	0.005	0.0005	0.23	14
0.50	0.00136	0.945	0.70	0.662	1/8 th	0.125	0.010	0.0007	0.33	20
0.50	0.00136	0.945	0.70	0.662	1/4 th	0.250	0.021	0.0010	0.47	28
0.50	0.00136	0.945	0.70	0.662	one half	0.500	0.042	0.0015	0.66	40
0.50	0.00136	0.945	0.70	0.662	3/4 ths	0.750	0.063	0.0018	0.81	49
0.50	0.00136	0.945	0.70	0.662	1 inch	1.000	0.083	0.0021	0.94	56
<b>Vent Hole</b>										
0.75	0.00307	0.955	0.67	0.640	1/16 th	0.063	0.005	0.0011	0.51	31
0.75	0.00307	0.955	0.67	0.640	1/8 th	0.125	0.010	0.0016	0.72	43
0.75	0.00307	0.955	0.67	0.640	1/4 th	0.250	0.021	0.0023	1.02	61
0.75	0.00307	0.955	0.67	0.640	one half	0.500	0.042	0.0032	1.44	87
0.75	0.00307	0.955	0.67	0.640	3/4 ths	0.750	0.063	0.0039	1.77	106
0.75	0.00307	0.955	0.67	0.640	1 inch	1.000	0.083	0.0045	2.04	122
<b>Vent Hole</b>										
1.00	0.00545	0.960	0.65	0.624	1/16 th	0.063	0.005	0.0020	0.88	53
1.00	0.00545	0.960	0.65	0.624	1/8 th	0.125	0.010	0.0028	1.25	75
1.00	0.00545	0.960	0.65	0.624	1/4 th	0.250	0.021	0.0039	1.77	106
1.00	0.00545	0.960	0.65	0.624	one half	0.500	0.042	0.0056	2.50	150
1.00	0.00545	0.960	0.65	0.624	3/4 ths	0.750	0.063	0.0068	3.06	184
1.00	0.00545	0.960	0.65	0.624	1 inch	1.000	0.083	0.0079	3.54	212
<b>Pick Hole semicircular area</b>										
1.00	0.00273	0.960	0.65	0.624	1/16 th	0.063	0.005	0.0010	0.44	27
1.00	0.00273	0.960	0.65	0.624	1/8 th	0.125	0.010	0.0014	0.63	38
1.00	0.00273	0.960	0.65	0.624	1/4 th	0.250	0.021	0.0020	0.89	53
1.00	0.00273	0.960	0.65	0.624	one half	0.500	0.042	0.0028	1.25	75
1.00	0.00273	0.960	0.65	0.624	3/4 ths	0.750	0.063	0.0034	1.53	92
1.00	0.00273	0.960	0.65	0.624	1 inch	1.000	0.083	0.0039	1.77	106
1.00	0.00273	0.960	0.65	0.624	1-1/2 inch	1.500	0.125	0.0048	2.17	130
1.00	0.00273	0.960	0.65	0.624	2 inches	2.000	0.167	0.0056	2.51	150

Courtesy of OCSD: Created 5/17/99, as an estimating tool for field staff. This is based on flow through orifices assumptions. Your city or agency may want to develop a similar tool.

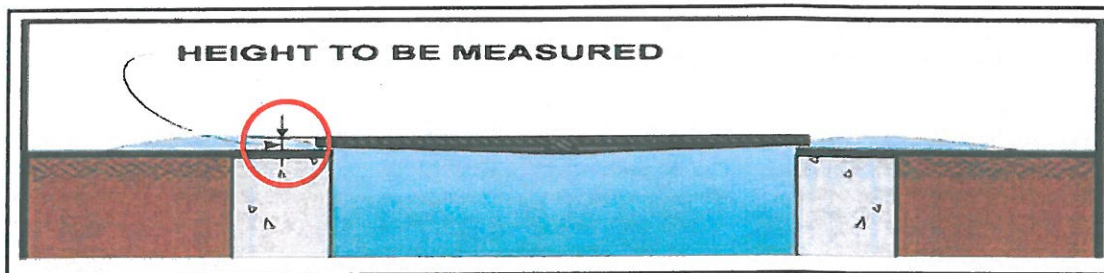
$$Q = CA(2gh)^{.5} \quad \text{Where } Q = \text{cfs} \quad C = 0.624 \quad A = \text{area(sq. ft.)} \quad g = 32.2 \text{ ft/sec/sec}$$

$$h = \text{water height (ft.)}$$



## Manhole Ring

Some manhole covers in use today typically only have one pick hole forcing most of the wastewater to escape from the perimeter of the manhole cover during higher flow SSOs. To estimate the volume in this example, measure the observed height of the wastewater plume exiting the manhole cover. Find the height and manhole diameter on the Manhole with Cover in Place to determine the flow rate escaping the manhole. The chart has two columns, one for 24-inch diameter covers and one for 36-inch diameter covers. Wastewater will also be escaping from the pick hole and must be accounted for separately by following the instructions for estimating an SSO from pick/vent hole. Multiply the flow rate times the number of holes that are discharging. The total estimated rate (gpm) is determined by adding together the rate being lost (gpm) from around the cover with the rate being lost (gpm) from the pick and/or vent hole(s). Once the total rate (gpm) has been determined, multiply the gpm by the duration of the SSO in minutes. This will result in the total estimated gallons of the SSO.



Example: The measured height of the plume exiting the ring of a 36-inch manhole is 1 inch. The total volume per minute would be 13 gpm from around the ring of a 36-inch manhole cover (from the attached chart). (Calculate the amount exiting the pick hole(s) and add to the total being lost around the ring). If the SSO lasted one hour the total wastewater lost would be 780 gallons ( $13 \times 60 = 780$ ).

Estimated loss around ring (from chart)	13 gpm
Duration of SSO	60 minutes
Total SSO (without loss from pick hole)	780 gallons
(13 gal/min x 60 minutes = 780 gallons plus amount lost from pick hole(s))	

**ESTIMATED SSO FLOW OUT OF MH WITH COVER IN PLACE**

24" COVER				36" COVER			
Height of spout above M/H rim H in inches	SSO FLOW Q		Min. Sewer size in which these flows are possible	Height of spout above M/H rim H in inches	SSO FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD			in gpm	in MGD	
1/4	1	0.001	6"	1/4	1	0.002	6"
1/2	3	0.004		1/2	4	0.006	
3/4	6	0.008		3/4	8	0.012	
1	9	0.013		1	13	0.019	
1 1/4	12	0.018		1 1/4	18	0.026	
1 1/2	16	0.024		1 1/2	24	0.035	
1 3/4	21	0.030		1 3/4	31	0.044	
2	25	0.037		2	37	0.054	
2 1/4	31	0.045		2 1/4	45	0.065	
2 1/2	38	0.054		2 1/2	55	0.079	
2 3/4	45	0.065		2 3/4	66	0.095	
3	54	0.077		3	78	0.113	
3 1/4	64	0.092		3 1/4	93	0.134	
3 1/2	75	0.107		3 1/2	109	0.157	
3 3/4	87	0.125		3 3/4	127	0.183	
4	100	0.145		4	147	0.211	
4 1/4	115	0.166		4 1/4	169	0.243	
4 1/2	131	0.189		4 1/2	192	0.276	
4 3/4	148	0.214		4 3/4	217	0.312	
5	166	0.240		5	243	0.350	
5 1/4	185	0.266		5 1/4	270	0.389	
5 1/2	204	0.294		5 1/2	299	0.430	
5 3/4	224	0.322		5 3/4	327	0.471	
6	244	0.352		6	357	0.514	
6 1/4	265	0.382		6 1/4	387	0.558	
6 1/2	286	0.412		6 1/2	419	0.603	
6 3/4	308	0.444		6 3/4	451	0.649	
7	331	0.476		7	483	0.696	
7 1/4	354	0.509		7 1/4	517	0.744	
7 1/2	377	0.543		7 1/2	551	0.794	
7 3/4	401	0.578		7 3/4	587	0.845	
8	426	0.613		8	622	0.896	
8 1/4	451	0.649		8 1/4	659	0.949	
8 1/2	476	0.686	8 1/2	697	1.003		
8 3/4	502	0.723	8 3/4	734	1.057		
9	529	0.761	9	773	1.113		

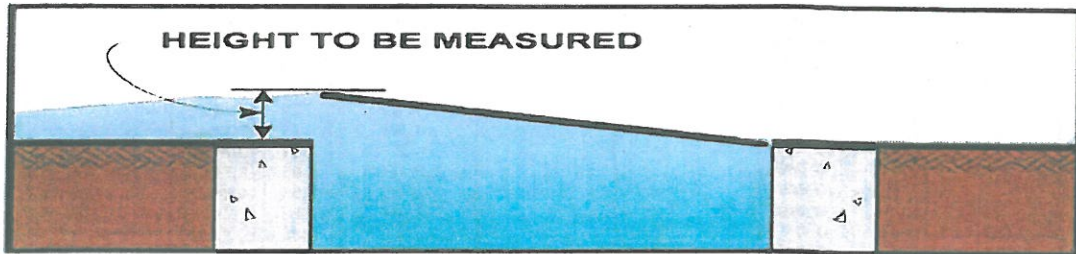
The formula used to develop Table 1 measures the maximum height of the water coming out of the maintenance manhole above the rim. The formula was taken from Hydraulics and Its Application by A.H. Gibson (Constable & Co. Limited).

### Partially Covered Manhole

Sometimes an SSO will occur that only lifts one side of the manhole cover. This is especially true of manholes where the cover is on an incline with the cover lifting on the downward side of the manhole. To estimate the volume of an SSO under these conditions, calculate the area (in square feet) from where the wastewater is escaping and the velocity (in feet per second) that the wastewater is normally traveling in the sewer at half the pipe depth. The velocity is estimated from visual observation with 2 feet/second or less being a small velocity, 4 to 5 feet/second being a medium velocity, and 7 feet/second or higher being a large velocity. Velocities in the sewer above 7 feet/second may be strong enough to blow the manhole cover off. Higher velocities also tend to raise the manhole lid higher. Next, multiply by the duration



(in seconds) that the SSO occurred. Finally, multiply by 7.48 to determine the volume of the SSO in gallons. The formula is Volume (gallons) = Area (sq. ft.) x Velocity (ft/sec) x Time (in seconds) x 7.48 (gal/cu. ft.).



Example: The measured height of the plume exiting the side ring of a 24-inch manhole is 2 inches. Based upon the data provided in the Area Calculation Chart below, a 2-inch plume from one side of a 24-inch manhole cover provides 0.524 square feet of area. The velocity of the flow is estimated at 4 ft/sec (visual observation) with the assumed duration of the flow lasting for one hour. The total amount of the SSO is estimated at 56,441 gallons (.524 x 4 x 60 x 60 x 7.48 = 56,441)

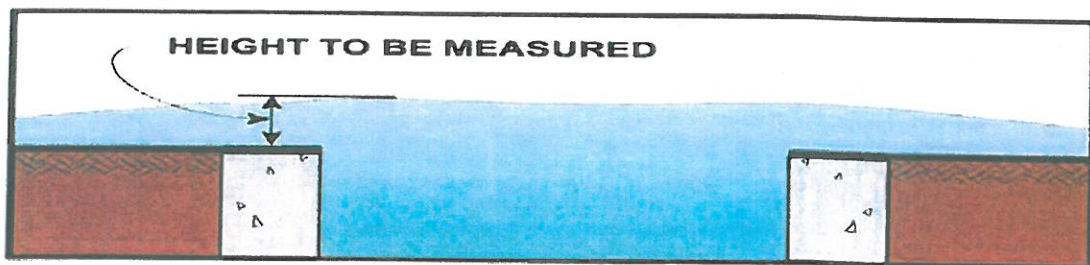
Height of plume	2 inches
Area for 24 inch manhole	0.524 square feet
Estimated velocity	4 ft/sec
Duration of SSO	60 minutes
Conversion from cu. ft. to gallons	7.48
Total estimated SSO volume	56,441 gallons

(.524 sq. ft. x 4 ft/sec x 60 minutes x 60 sec/min x 7.48 gal/cu ft = 56,441 gal)

Area Calculation Chart		
Height of Flow	24 Inch Manhole	36 Inch Manhole
.5 inches	0.131 sq. ft.	0.195 sq. ft.
1 inches	0.262 sq. ft.	0.391 sq. ft.
1.5 inches	0.393 sq. ft.	0.586 sq. ft.
2 inches	0.524 sq. ft.	0.782 sq. ft.
2.5 inches	0.655 sq. ft.	0.977 sq. ft.
3 inches	0.786 sq. ft.	1.173 sq. ft.
3.5 inches	0.917 sq. ft.	1.368 sq. ft.
4 inches	1.048 sq. ft.	1.564 sq. ft.

## Open Manhole

In large events the force of the overflowing wastewater will have sufficient pressure and volume to unseat the cover from the frame and move the manhole cover away from the manhole. Typically, when the SSO rates reach approximately 7 cfs (approximately 3,000 gpm or about 4.32 mgd), there is sufficient flow and pressure to blow off the manhole cover. To estimate the volume of an SSO where the manhole cover has been removed, the average height of the plume of wastewater exiting the manhole must be measured. This measurement is from the pavement surface close to the manhole ring to the top of the plume. Take several measurements in several locations around the ring and average the findings. If possible, and being safe to protect yourself from the open manhole, find the average height of the plume for the size of the manhole lid (24-inch or 36-inch diameter) on the Area Calculation Chart to determine the rate of flow exiting the manhole. Multiply the flow rate expressed in gallons per minute from the chart multiplied by the duration of the SSO in minutes to determine the total volume of the SSO. A photo taken at a safe distance upon arrival may help you refine your estimate.



Example: Determine the observed height of the plume at several locations around the ring of the manhole and average the results. Determine the size of the manhole cover. If the average height of the plume exiting an open 24-inch diameter manhole is 2 inches, find 2 inches on the 24-inch Manhole Cover Removed Chart. Based upon the data provided in the Manhole Cover Removed Chart, the flow in gallons per minute would be 3,444 gpm. If the duration of the flow lasted for one hour (60 minutes), the total amount of the SSO would be estimated at 206,640 gallons ( $3,444 \times 60 = 206,640$ ).

Height of plume (average) on 24-inch manhole	2 inches
Estimated flow from chart	3,444 gpm
Duration of SSO	60 minutes
Estimated SSO total volume	206,640 gallons
(Est flow from chart 3,444 x 60 minutes = 206,640)	

**ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED**

**24" FRAME**

Water Height above M/H frame H in inches	SSO FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

**36" FRAME**

Water Height above M/H frame H in inches	SSO FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	556	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.87	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

**Disclaimer:**

This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

**Pictorial Reference**

Currently there are two picture charts being widely used to assist with estimating SSO volumes. The older chart is the city of San Diego's Manhole Overflow Rate Chart with the



newer chart being the CWEA Southern Section Collection Systems Committee (SSCSC) Manhole Overflow Gauge. Each chart is a pictorial depiction of how an overflowing manhole appears at a given flow rate. The SSCSC Manhole Overflow Gauge has an additional picture for each flow rate showing a wide angle view of the spill area. When using either of the pictorial reference charts, select which picture most accurately represents the SSO being estimated. Use the gpm of the associated picture multiplied times the duration of the SSO to determine the total spill volume. Example: If the selected picture shows 300 gpm and the duration of SSO is 55 minutes, the total estimated spill volume would be 16,500 gallons (300 gpm x 55 min).

Selected picture volume	300 gpm
Duration of SSO	55 minutes
Total estimated SSO	16,500 gallons
(300 gpm x 55 minutes = 16,500 gallons)	

*Note:* Data was obtained at training facilities where potable water was metered and photos were taken at various flow rates.

Training facilities also exist at the Orange County Sanitation District in Fountain Valley, CA.

As a reference point, an 8-inch diameter sewer flowing half full at a velocity of 2.5 ft/sec would have a flow rate of about 192 gal/min. If fully blocked, the SSO rate would be 192 gpm. For a partial blockage, the SSO rate will be less.

Other agencies have developed above ground estimating tools such as frame and cover sets that can be pressurized using potable water and simple flow meters.



# City of San Diego Manhole Overflow Picture Chart



City of San Diego  
Metropolitan Wastewater Department

## Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)



City of San Diego  
Metropolitan Wastewater Department



All photos were taken during a camera and/or video recording of manhole overflows with the City of San Diego's Wastewater Department

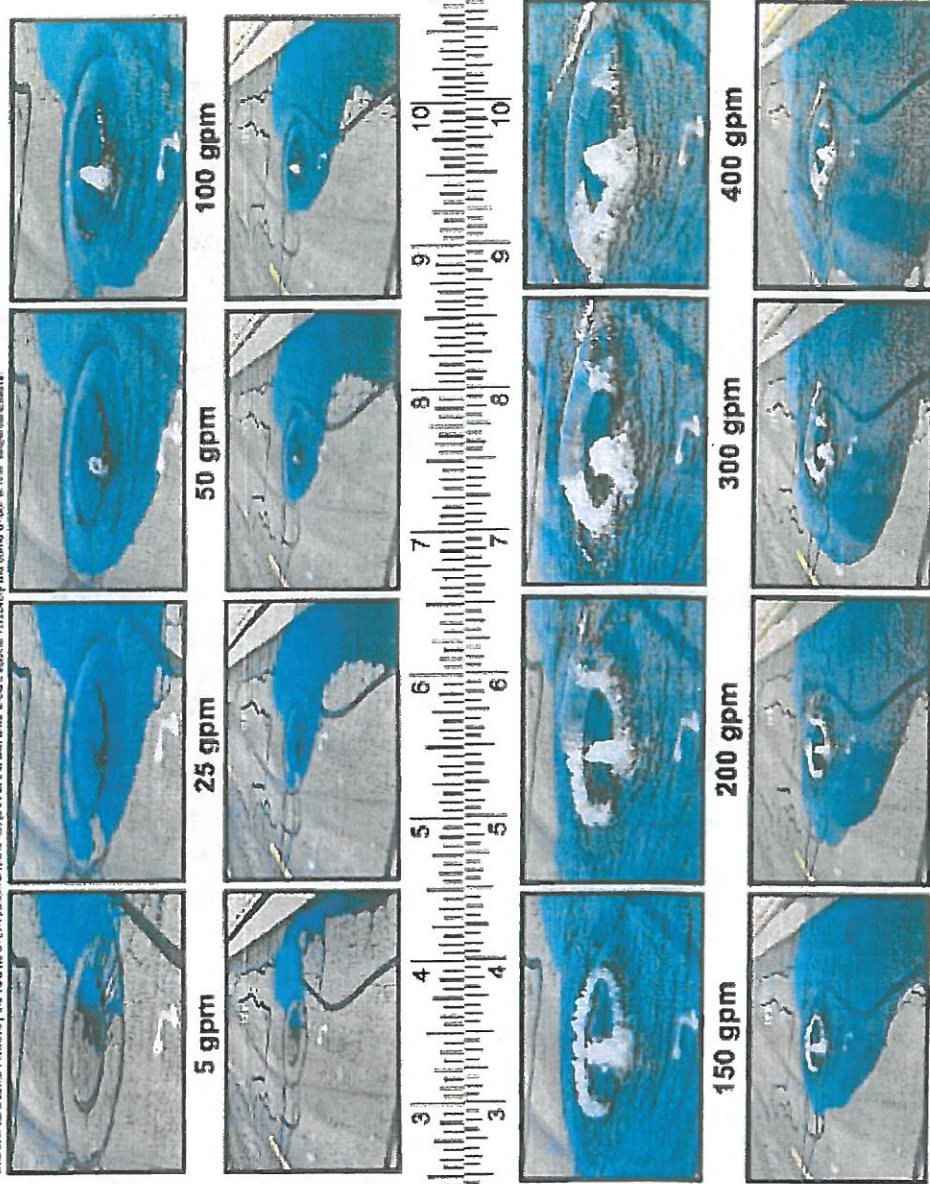
10/1/09



# SSCSC Manhole Overflow Gauge

**PRECAUTION:** This overflow gauge should be used only when the water level in the manhole is above the overflow gauge. The gauge should be used only when the water level is above the overflow gauge. The gauge should be used only when the water level is above the overflow gauge.

**SSCSC MANHOLE OVERFLOW GAUGE**  
 Overflow Structure courtesy of  
 Enslin Municipal Water District



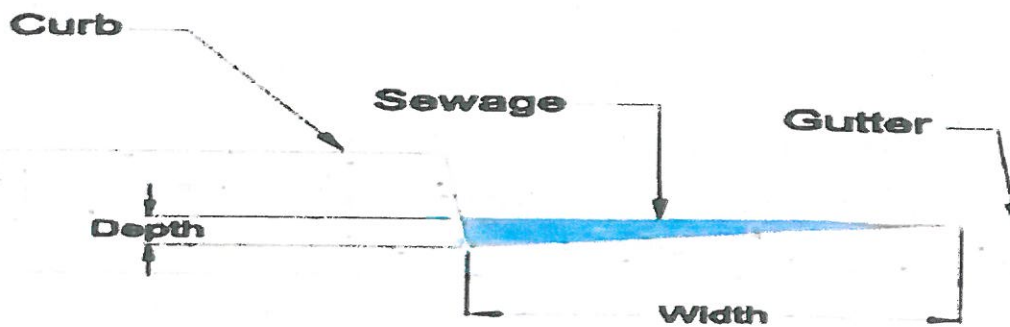
**DISCLAIMER:** This overflow gauge may appear differently from other overflow gauges as a result of the hole configuration. However, the water level in the manhole should be the same under similar conditions.

**PROVIDING QUALITY TRAINING FOR COLLECTION SYSTEM PERSONNEL SINCE 1991**

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## Gutter Flow (Simplified Version)

Although the traditional Manning's Equation is used to calculate flows in open channels, this simplified version can be used to measure SSOs that are flowing in open channels such as ditches, curb and gutter, etc. and still achieve reasonable estimations. Two things need to be determined to utilize this method of spill estimation, the cross sectional area of the channel and the velocity of the flow in the channel. First, determine the cross sectional dimensions of the channel (width and depth of flow) to determine the area of the flow. Then determine the velocity of the flow in the channel. To determine the velocity, drop a small floating object (ping pong ball, leaf, small piece of wood, etc.) into the flow and time how long it takes the object to travel a measured distance. This should be practiced several times in a non-SSO situation, and averaged to determine the flow velocity. The velocity of the flow multiplied by the cross sectional area of the flow multiplied by the duration of the SSO will result in the approximate volume of the SSO.



$$Q = V \times A$$

$$\text{Flow (gal/min)} = \text{Velocity (ft/sec)} \times \text{Area (ft}^2\text{)} \times 7.48 \text{ gal/cu ft} \times 60 \text{ sec/min}$$

Example: If the cross section triangular area of the spill is calculated at .5 sq.ft. with the velocity measured at .25 ft. per second, the flow would be .125 cubic feet per second. Multiply times 449 (one cubic foot per second equals 449 gallons per minute) to determine the gallons per minute (56 gpm). If the SSO lasted for 35 minutes the total estimated spill volume would be 1,964 gallons.



Simplified Cross Section Area of the SSO



Estimated Triangular Area

0.5 square feet

Estimated Velocity

.25 feet per second

Duration of the SSO

35 minutes

Gallons per minute per cubic foot per second conversion

449

Total estimated spill volume

1,964 gallons

(Area .5 sq.ft. x Est velocity .25 ft. per sec. = .125 cfs x 449 = 56 gpm x 35 minutes = 1,964 estimated gallons spilled)

Gutters on steep hillsides will flow at higher velocities. Practice your estimating on flatter areas and steeper areas of your service area.

## Bucket Method

This method can be used for small spills due to partial blockages where the entire flow stream could be captured in a bucket. Estimate how many minutes it takes to fill the bucket. Dividing the volume of the bucket (in gallons) by the elapsed time to fill the bucket (in minutes). This provides the flow rate in gallons per minute (gpm). Once the gpm has been established, multiply the gpm by the total time duration in minutes of the SSO until it stopped to determine the total estimated volume of the SSO.

Example: If it takes 30 seconds (.5 minutes) to fill a 5 gallon bucket and the total spill duration was 20 minutes, the total spill volume would be 200 gallons. (5gal/.5 min = 10 gpm x 20 min = 200 gal).

Time to fill a 5 gallon bucket

30 seconds (.5 minute)

Duration of SSO

20 minutes

Estimated spill volume

200 gallons

(5 gallons every 30 seconds equals 10 gallons per minute x 20 minutes = 200 gallons)

You can practice visual estimating by filling a bucket of known volume for a measured time from a garden hose.

## Pipe Size

To calculate an SSO based upon pipe size requires the diameter of the pipe, the depth of flow in the pipe downstream of the blockage during and after the blockage, and the flow velocity in the pipe. This method calculates the amount of flow in the pipe at the same time of the day during the blockage compared to the amount of flow normally in the pipe to determine how much flow had been lost over time.

To use this method, measure the flow depth at the nearest manhole downstream from the blockage. Record the depth reading. Once the blockage has been cleared and the flow stabilized, measure the flow depth at the same manhole as before and record the reading. The attached chart can be used on various size pipelines where the velocity is 2.0 feet per second. Pipelines of other rates will have to be calculated.

To use the attached chart, find the depth of the flow during the blockage in column 1. Follow the row across to the diameter of the pipe where the blockage has occurred. The number listed will be the flow rate in gallons per minute for pipelines with a velocity of 2 feet per second. Next find the flow depth after the blockage has been removed and the flow stabilized. Move across the chart to the proper pipe size and record the flow rate for a free flowing pipeline. Subtract the flow rate from the blocked pipe from the flow rate of the free flowing pipe. The remainder will be the flow rate lost. Multiply the flow rate lost times the duration of the SSO to determine the total flow volume lost. Example: If the flow depth during the blockage of a 10-inch pipe was 1 inch, the flow rate would 25 gpm. After the blockage was cleared and the flow stabilized, the flow depth was now 5 inches then the flow rate would be 240 gpm. To determine the amount lost, subtract the gpm (pipe blocked) from the gpm (pipe cleared) ( $240 \text{ gpm} - 25 \text{ gpm} = 215 \text{ gpm}$ ) leaving the flow rate of the SSO. Multiply the remaining flow rate multiplied by the duration of the SSO in minutes to estimate the total volume of the SSO.



Flow Depth Inches	8" PIPE	10" PIPE	12" PIPE	15" PIPE	18" PIPE	21" PIPE	24" PIPE
1	20 GPM	25 GPM	30 GPM	35 GPM	40 GPM	45 GPM	50 GPM
2	60	70	80	85	95	105	125
3	110	125	135	150	175	185	210
4	160	180	200	235	260	285	320
5	190	240	280	315	360	380	445
6	260	310	355	415	455	500	555
7	290	370	425	495	570	620	695
8	320	430	500	600	680	760	815
9		465	575	690	800	890	965
10		490	625	775	905	1005	1120
11			685	870	1020	1135	1275
12			715	935	1130	1260	1410
13				1020	1240	1415	1580
14				1070	1345	1520	1690
15				1105	1425	1650	1850
16					1495	1760	1990
17					1550	1880	2110
18					1595	1980	2285
19						2050	2410
20						2115	2530
21						2160	2630
22							2700
23							2765
24							2820

Note: the chart assumes  $V = 2.0$  feet per second and  $n = 0.013$

1. Record the time that spill was reported.
2. Record the flow, in inches, downstream of the spill or blockage. Record the pipe size in inches. Determine flow rate in gallons per minute (GPM) using chart above.
3. Re-establish flow and allow stabilizing. Record the time that flow stabilizes and the depth of flow, in inches. Determine flow rate using chart above.
4. Subtract the flow rate calculated in #2 from the flow rate calculated in #3.
5. Multiply the result of 4 by the minutes elapsed from notification to stopping overflow.
6. Report total amount in gallons on the SSO Report.

*Note: The above chart is only for pipelines of the diameters shown and flowing at a velocity of 2.0 ft/sec.*

## Metered Flow

Estimates of the amount of wastewater spilled from a continuously metered system can be achieved utilizing upstream and downstream flow meters located close to the point where the wastewater escaped. Flow meters may be located at strategic locations throughout the wastewater collection system or at the intake or discharge of wastewater pump or lift stations. Flow metering usually occurs on pressure systems. If a spill is suspected on a metered upstream wastewater line, check the flow meter readings for abnormalities and note the time they start. Also check the flow meter readings at the downstream flow meter. If the downstream readings are lower than usual, the difference may be the amount of wastewater being lost to a spill. Abnormal pumping cycles for pump or lift stations located downstream from the spill can also be used to estimate the volume of a spill. Portable flow meters could also be installed in gravity sewers after a SSO event to help verify average flows at various times of the day when full or partial blockages may have occurred. You should also perform

this on the same day of the week that the SSO occurred. This is also a good way to understand how flows will change during the day in various parts of your system.

## **Rain Events**

Previous examples of methods throughout the document were all in dry weather situations. Rain events cause substantial difficulties for SSO responders in establishing an accurate estimate of an SSO. Infiltration into the sewer system will increase, sometimes dramatically, the system flow including the amount of the SSO. When estimating the SSO amount during a rain event, the estimate is to include only the amount of wastewater that left the collection system (this includes any clear water inflow and/or infiltration (I&I) that entered the collection system upstream of the SSO) and not any waters that the wastewater comingled with after leaving the system. Although the comingled waters are considered contaminated by the SSO and may be involved in the cleanup, they should not be considered in the estimate of the volume of sewage spilled for the event. Consult with your city or agency management or your site-specific procedures to be used during wet weather SSOs.

## **Saturated Soils**

Spills that have occurred on or migrated to grassy or dirt areas can be estimated if the area is dry and is not regularly irrigated like a field or dirt parking lot. This method is effective only during dry weather and not during or after a rain event. To estimate how much wastewater has been lost to the soil, first determine how many cubic feet of soil has been wetted. First determine the size of the area where the spill occurred. This is done in the same manner as for spills that occurred on hard surfaces and as discussed in the Measured Volume Method. Next determine how deep the soil has been saturated. To determine the depth of the soil saturation, dig several test holes with a round point shovel until dry soil is reached. Measure the depth of each hole and determine the average depth of the saturated soil. Multiply the area of the spill (in square feet) times the average depth of the soil saturation to determine the amount (in cubic feet) of saturated soil. Different types of soils will retain moisture in different amounts. Water will penetrate sandy soils quicker than clay soils and clay soils are capable of holding more moisture than sandy soils. Use an average of 18% moisture content when estimating the amount of wastewater that has saturated the soil.



Example: If the spill was contained in a dry dirt or grassy area of 10 feet by 20 feet, the area of the spill would be 200 square feet if it was a perfect rectangle (assumed). If the wastewater penetrated the soil to an average depth of 3 inches, the total amount of saturated soil would be 50 cubic feet ( $10 \times 20 \times .25 = 50$  cf.). To determine the amount of wastewater suspended in the wetted soil, multiply the 50 cubic feet times 7.48 gallons per cubic foot ( $50 \text{ cf} \times 7.48 \text{ gal/cf} = 374$  gallons). Next multiply the gallons times the average amount of moisture the soil can hold (use 18% as a rough estimate or calculate the soil moisture) to determine the actual estimated amount of wastewater that has saturated the soil ( $374 \text{ gal} \times .18 = 67.3$  gallons of wastewater contained in the soil for the area of the spill). Add the amount of wastewater estimated to be contained in the soil with the amount of surface wastewater that was removed to achieve an estimated total amount of the wastewater spill.

Simple method to calculate soil moisture content:

Equipment needed: One coffee filter; a funnel; a graduated measuring cup; a jar or bottle. Place the coffee filter into the funnel. Place the funnel into the mouth of the jar or bottle. Place one cup of clean dry soil from the spill site onto the coffee filter. Pour one cup (8 ounces) of water onto the soil and allow the water to drain into the jar. Once the water has stopped dripping from the funnel, remove the funnel and measure the amount of water in the jar. The difference between the amount of water in the jar and the 8 ounces originally poured over the soil is the amount of moisture the soil retained.

Example: If six and one half ounces (6.5) remained in the jar, one and one half ounce (1.5) or 18.75% remained in the soil. The soil moisture content would be 18.75%.

## **Combo Truck or Vacuum Truck Recovery**

When the spill is contained to a specific area and recovered by a combo or vacuum truck, the amount recovered can be used in calculating the amount of the original spill. If the spill is contained on a hard surface, estimate the total spill volume by what was captured by the combo or vacuum truck plus the amount that could not be captured. To estimate the amount not captured by the combo or vacuum truck, use the Measured Volume Method. For wet spots on concrete, use a depth of 0.0013 ft. or 1/64 inch. For wet stains on asphalt, use a depth of

0.0026 ft. or 1/32 inch. If the spill is contained on soil, use the Saturated Soils Method to determine how much of the spill soaked into the soil and add to the amount captured by the combo or vacuum truck.

### **Conversion Factors**

1.0 cfs = .6463 mgd

One cubic foot of water (cf) = 7.48 gallons

One cubic foot of water per second (cfs) = 448.8 gallons per minute

A cylinder 1 foot in diameter and one foot deep = 5.87 gallons

A 1 square foot triangle 1 foot deep = 3.25 gallons

One inch or 1/12 ft = .083 feet

### **Volumes Recovered with Trucks or Pumped to Tanks**

Level gauge on truck or

Known volume of the full tank or

Number of full tank trucks used during large SSO events

Use your agency's approved conversion factors, if available.



## References

California Environmental Protection Agency

<http://www.calepa.ca.gov/>

State Water Resources Control Board

<http://www.swrcb.ca.gov/>

Sanitary Sewer Overflow (SSO) Reduction Program

[http://www.swrcb.ca.gov/water\\_issues/programs/sso/index.shtml](http://www.swrcb.ca.gov/water_issues/programs/sso/index.shtml)

**Sample Worksheet**

\_\_\_\_\_  
(City or Agency Name)

**SSO Volume Estimation Worksheet**

**SSO Address/Location:** \_\_\_\_\_ **Date:** \_\_\_\_\_

SSO Volume Method of Estimation (check appropriate box and provide appropriate information for method used below)

Pictorial Reference Flow Rate Chart (San Diego Chart  CWEA Ruler   
Vent or Pick Holes  Eyeball estimate

Measured volume  Counting Connections  Manhole Ring  Partially Covered  
Manhole  Open Manhole

Bucket Method  Pipe Size Method  Gutter Flow Method  Metered Flow   
Rain Event Method

Saturated Soils Method  Combo/Vacuum Truck Recovery Method

Spill Start Date: \_\_\_\_\_ Spill Start Time: \_\_\_\_\_

Spill End Date: \_\_\_\_\_ Spill End Time: \_\_\_\_\_ Total Est. Spill Volume (gal): \_\_\_\_\_

Provide a detailed description of the method(s) used to determine the SSO estimate. (Use additional sheets as needed)

**Signed:** \_\_\_\_\_

**Date:** \_\_\_\_\_



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**APPENDIX D-1**  
**ADOLFO LOPEZ PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**APPENDIX D-1**

**ADOLFO LOPEZ PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**D1-1 General**

The Adolfo Lopez Pump Station is a submersible pump station located near the west end of Adolfo Lopez Drive, west of Seal Beach Boulevard and just southeast of the Los Alamitos Retarding Basin. The station is located adjacent to the City Maintenance Yard and an Animal Shelter. Access to the pump station is from Adolfo Lopez Drive. The existing station was constructed in 2005. The ground elevation at the pump station site is approximately 6.3 feet amsl.

Adolfo Lopez Pump Station currently serves a 70.2-acre tributary area consisting of low density residential, light manufacturing, open space, and City owned public lands. In the future, it may accept wastewater from oil and gas production uses along the San Gabriel River. Tributary area land uses are summarized in Table D1-1. The pump station itself is located adjacent to the City Maintenance Yard. The tributary area is shown in Figure D1-1.

**Table D1-1  
Adolfo Lopez Pump Station Tributary Land Uses**

<b>Land Use</b>	<b>Area (ac)</b>
Light Manufacturing	26.8
Open Space	16.1
Public Lands	5.8
Low Density Residential	12.6
Public Right-of-Way	8.9
<b>TOTAL</b>	<b>70.2</b>

**Tributary Flows**

The model was updated during the development of the 2018 Sewer Master Plan Update. The modeled tributary average dry weather flow (ADWF) is approximately 15.1 gpm, as estimated from weekly meter reads on the discharge piping during the 2014-2015 period. The modeled peak dry weather flow (PDWF) and peak wet weather flow (PWWF) are 35.9 gpm and 50.3 gpm respectively.

**Pumps**

Adolfo Lopez Pump Station has two (2) WEMCO submersible torque flow pumps (Model 4X11S). The pumps are driven by 30 HP drive motors. Per the certified pump testing curves, the pumps deliver 215 gpm at a total dynamic head of 89 feet when operating at 1750 rpm. The pumps have the capacity to pump the ADWF of 15.1 gpm, the PDWF of 35.9 gpm, and the PWWF of 50.3 gpm.

**Wet Well**

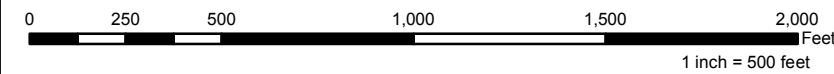
The wet well is a reinforced concrete, T-Lock PVC lined circular structure that is 8'-0" in diameter and 23'-3" high. The bottom elevation of the structure is -17.0 feet amsl. Access to the wet well is through a 4' x 4', aluminum double door, spring-assisted hatch at ground level (6.3 feet amsl). The pump station is equipped with level sensors and back up float switches. Per discussion with the City maintenance staff in July 2016, the lead pump starts when the level rises to 6 feet (-11.0 feet amsl) above the wet well floor, and turns off when the level drops to about 3.0 feet (-14.0 feet amsl) above the wet well floor. The lag pump turns on when the level rises to 7 feet (-10 ft amsl) above the bottom of the wet well and turns off when the level falls to 4.5 feet (-12.5 ft amsl).

It is recommended that the City install Smart manhole covers at MH U01-A05 (on the Hellman Ranch access road southwest of the station) and at the upstream manhole to the Adolfo Lopez Pump station (MH U01-A01) to provide an additional backup alarm to inform maintenance staff of a possible pump station failure. The locations of the recommended Smart MH covers are detailed on Figure D1-2.



**Legend**

Sewer Pump Station	<b>Land Use</b>
Manhole	RLD  Residential Low Density
Gravity Sewers	M-1  Light Manufacturing
Forcemain	O-E  Oil Extraction
Adolfo Lopez PS Tributary Area	PLU  Public Use
City Boundary	OS  Open Space



**AKM**  
 PROJECT NO: 0801223.00  
 DATE: February 2018

CITY OF SEAL BEACH  
 SEWER SYSTEM MANAGEMENT PLAN  
**Adolfo Lopez Pump Station  
 Tributary Area**  
 Figure D1-1





**Legend**

- ▲ Sewer Pump Station
- Manhole
- Overflow Sewer Manhole
- Gravity Sewers
- Forcemain
- Adolfo Lopez PS Tributary Area
- City Boundary

**Storm Drain Facilities**

- Catch Basin
- OCFCD Drainage Channel
- San Gabriel River
- Federal Drainage Channel
- Local Storm Drain
- Private Storm Drain
- Drainage Direction

CITY OF SEAL BEACH  
SEWER SYSTEM MANAGEMENT PLAN

**Adolfo Lopez Pump Station  
Capture Points**

Figure D1-2



**AKM**

PROJECT NO: 0801223.00  
DATE: February 2018



## Electrical

The Adolfo Lopez Pump Station is powered by a 200 amp, 3 phase, 4 wire service. A natural gas powered, 100-kW generator is located just south of the wet well and pump control panel.

## Forcemain

The Adolfo Lopez Pump Station forcemain is a 4-inch diameter PVC pipe, the majority of which was constructed in 1978. The forcemain extends approximately 1,015 feet from the east side of the dry well towards the Adolfo Lopez Drive, then east along Adolfo Lopez Drive, to MH S01-127, located approximately 100' west of Seal Beach Boulevard. Based on the existing average pump capacity of 215 gpm, the velocity in the 4-inch forcemain is approximately 2.9 feet per second (fps), which is very close to the recommended velocity range of 3 to 5 fps.

### D1-2 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If a spill occurs during a wet weather event, and it enters the storm drain system, no drainage facilities will be entered or blocked with sandbags or plugs in attempt to contain the spill, as such action could potentially cause flooding. Additionally, City staff should not enter the storm drain system if unsafe conditions are observed.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system. Since the maintenance staff will not be addressing the containment and clean-up activities, any sewage that has overflowed from the sewer system will be considered part of the unrecovered overflow volume. To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall record the length of time the sewer system is overflowing. If possible, he/she will take photographs of the sewer overflow.

The following procedures generally deal with dry weather conditions. Procedures for wet weather spill response will be similar, except the storm drain system will not be entered to intercept and remove the sewage that has already entered the storm drain system and flow will not be blocked from entering the storm drains.

### D1-3 Preliminary Assessment Procedures

The Adolfo Lopez Pump Station is equipped with SCADA capabilities for remote monitoring. The pump station is also on a dialer system, which notifies the Seal Beach Police Department in the event of an alarm. Police Dispatch then notifies the Responsible Staff to oversee the overflow response.

The following are alarms are monitored at the Adolfo Lopez Pump Station:

- High Wet Well Level
- Pump Failure
- Power Failures
- Motor High Temperature
- Site Intrusion
- Generator Failure

Once an alarm has been identified, the maintenance staff will respond to the alarm within 1 hour of the initial notification.

Upon arrival the responding maintenance staff will assess and determine the course of action. The maintenance staff shall evaluate the pump station and spill site and request additional staff and/or equipment under the following circumstances:

- An overflow has entered the storm drain system, requiring at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- Without additional staff, an overflow has the potential of entering the storm drain system, which would require at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- The maintenance staff determines if additional expertise and/or work power is required to correct a failed pump, to contain an overflow, or to clean up the site



He/she shall complete the Sanitary Sewer Overflow (SSO) Spill Report (Appendix B), which should include the following, at a minimum.

- Call time, or the time that the City became aware of the spill
- Location of the spill (manhole, clean out, interceptor, etc.)
- The cause of the SCADA alarm and potential overflow (clogged pump, broken pump, broken forcemain, etc.)
- Whether the spillage entered a storm drain and, if so, if it was contained there
- Name and contact number of person reporting the SSO Spill Report
- Name(s) of responding City staff
- Actions taken of responding City staff
- Time, location, and volume details of spill and cleanup, including:
  - Spill Volume
  - Recovered Spill Volume
  - Wash Water Volume
  - Recovered Wash Water Volume
  - Spill Start and End Time
  - Final Destination of Overflow
- Whether additional agencies need to be contacted. See Table 4-4 for the detailed list of agencies and their contact information. Potential agencies include but are not limited to:
  - Orange County Health Care Agency (OCHCA)
  - Office of Emergency Services (OES)
  - Orange County Public Works (OCPW)
  - On-call Contractors
  - Orange County Fire Department (Hazardous Materials)
  - Seal Beach Police Department (Traffic Control)
  - Southern California Edison (if alarm/failure is due to a power outage)
- Whether public and/or private property has been damaged
- RWQCB Spill Category
- Location of prior overflows within 1,000 feet of overflow
- Amount of precipitation 72-hour prior to overflow
- Notification times and person(s) contacted at OCHCA, OES, and OCPW

He/she will notify the Responsible Staff of his/her findings at the earliest opportunity.

#### **D1-4 Response Time**

##### **Emergency Storage Fill Time**

The maintenance staff will strive to respond to a notification of an alarm before sewage has overflowed from a sewer facility. According to the City's topographic maps, hydraulic model, and GIS shapefiles, the upstream sewers to the Adolfo Lopez Pump Station are deep and will provide significant storage in the event of a pump station failure. In the event of a such failure, the wastewater will back up into the upstream gravity sewers and manholes, which will act as part of the pump station's emergency storage.

Based on the upstream system estimated emergency storage volume and the tributary PDWF, the City will have approximately 14 hours to respond to the pump station before an overflow would occur. The cited minimum response time was calculated by dividing the total available system storage volume (calculated as the volume of influent sewer pipe network and associated manholes below the estimated rim elevation at the

expected spill manhole, plus the storage volume available in the wet well between the high-level alarm elevation and the spill elevation) by the PDWF.

The maintenance staff will respond to a notification of a pump station alarm within one (1) hour, regardless of the emergency storage available at this pump station.

If the maintenance staff anticipate an overflow will occur before they arrive to the site, the staff will be prepared to try to contain and capture the sewage on the local street and within the storm drain system.

### D1-5 Containment Procedures

In the event of a pump station failure, there is approximately 14 hours of emergency storage available. The storm drain manholes and catch basins requiring protection in the event of an overflow are prioritized on Figure D1-2.

#### Overflow Sewer Manhole

The ground surface elevation at the Adolfo Lopez Pump Station wet well is 7.2 feet. The City's 1-foot contour data shows that the tributary area generally slopes from east to west. As such, MH U01-A05, with a rim elevation of 6.1 feet, is anticipated to overflow first in the event of a pump station failure. The overflow sewer manhole is located within an access road, south of Adolfo Lopez Drive, as illustrated on Figure D1-2. The maintenance staff will contain the overflow as close to the overflow manhole as possible by using sand bags, waddles, plastic sheets, rubber mats, earth berms, and other obstructing material.

#### Street and Private Property Containment

The maintenance staff shall keep the overflow area clear from the public by setting up barriers around the overflow. The area impacted by the overflow and potential subsequent work area will be secured with the use of signs, cones, delineators, barricades, arrowboards, and tape, as appropriate to divert traffic and to protect the public health and safety.

#### Storm Drain Containment

MH U01-A05 is approximately 110 feet from the OCPW's Los Alamitos Retarding Basin, and the access road is not curbed. As detailed on Figure D1-2, there are no storm drain catch basins located near MH U01-A05. An overflow at this location would flow downslope to the Los Alamitos Retarding Basin, be pumped into the San Gabriel River and ultimately terminate at the Pacific Ocean.

In the event of a spill at MH U01-A05 and/or any adjacent manholes, the maintenance staff will contain the sewage and prevent it from entering the Los Alamitos Retarding Basin. If the spill has reached the basin and it is dry, the spill should be contained as close as possible to the entry point. Refer to Section 7 for detailed steps for spills that have reached the Los Alamitos Retarding Basin.

Upon arrival at the site, the maintenance staff will determine if the overflow can be contained in the access road, away from the storm drain system, as the sewer pump failure is being addressed. If necessary he/she will contact additional crews to request work power and equipment to handle both tasks simultaneously. The maintenance staff will block raw sewage from entering the retarding basin, if possible, using sandbags, dirt berms, waddles, rubber mats, plastic sheeting or other obstructing material. The pick holes and vents of any manholes in the path of the spill will be plugged and the flow diverted from these structures, if possible.

Maintenance staff shall start the removal of the wastewater from the access road with the City's combination truck. Additional Vactor and/or combination trucks from outside sources and/or neighboring agencies may be requested as necessary. The contact information is included in Table 4-3 and Table 4-4 of this report. If an overflow reaches surface water in the Los Alamitos Retarding Basin, the Responsible Staff will contact the City-approved laboratory and environmental consultant **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**, respectively.

#### Notification

The responding maintenance staff will notify OCPW if the overflow has reached the Los Alamitos Retarding Basin. The maintenance staff will inform OCPW of the overflow and the plan of action for containment and clean-up.

The City approved laboratory and environmental consultant will be contacted, as necessary.

## D1-6 Pump Station and Forcemain Correctional Procedures

### Failed Pump

In the event of one pump failure, the maintenance staff will manually switch the pump station to operate with the second (operable) pump, if the SCADA system has not automatically done so. The City has a standby pump and motor for Adolfo Lopez Pump Station at the City Public Works Maintenance Yard adjacent to this station.

If one pump at the station can be operated, the maintenance staff will address the pump failure.

- If there is an obstruction in the failed pump that can be removed easily, the maintenance staff will clear the pump obstruction and place the pump back in service.
- If the failure is due to a closed check valve or isolation valve, the maintenance staff will fix the check valve setting and/or open the closed isolation valve.

If the failure is due to severe ragging or a broken pump, the maintenance staff will request an additional crew, if necessary, to transport the standby pump from the City public works yard. The standby pump will be placed into service, as the ragging is cleared. The maintenance staff will determine if the pump can be salvaged. If not, a new pump will be ordered to replace the broken pump.

If the failure is due to a broken check valve or isolation valve, the maintenance staff will replace the broken valve. The maintenance staff will determine if the valve can be salvaged. If not, a new valve will be ordered to replace the broken valve.

### Failed Electrical Facilities

If the failure is due to a Southern California Edison (SCE) power outage, the responding maintenance staff will contact Southern California Edison to expedite repairs. The pump station is equipped with a 100-KW onsite natural gas generator with an automatic transfer switch. However, if upon arrival to the pump station the maintenance staff finds that the automatic transfer switch has failed to connect to the generator, he/she will set the generator as the main power source.

If the overflow is due to an electrical failure at the pump station, a City electrician or a contract electrician will be contacted. In the event that there is a failure at one motor, the maintenance staff will request an additional crew, if necessary, to transport the standby pump and motor from the City Public Works Maintenance Yard. He/she will place the backup pump and motor into operation. The maintenance staff will determine if the motor can be salvaged. If not, a new motor will be ordered.

### Failed Forcemain

If the overflow is due to a failure of the 4-inch forcemain, rendering it unusable, by-pass pumping may be set up.

The City may also use its combination truck to remove the wastewater from the wet well. Additional Vactor and/or combination trucks from outside sources and/or neighboring agencies may be requested, as necessary. The contact information is included in Table 4-3 and Table 4-4.

Collected wastewater will be hauled to the Orange County Sanitation District's (OCSD) Treatment Plant No. 2, located in the City of Huntington Beach.

### By-pass Pumping

The maintenance staff may need to utilize by-pass pumping under any of the following circumstances:

- Rising sewage levels in the wet well, greater than the pump start setting
- Failure of both pumps and/or motors leave the pump station inoperable
- No power is available from either SCE or the emergency generator
- Failure of the 4-inch forcemain

When the 4-inch forcemain is operable, the City may contact an on-call contractor to set up by-pass pumping. The suction end of the by-pass pump will be placed into the bottom of the wet well and a temporary discharge hose will be run to the by-pass connection in the valve vault.

When the existing forcemain is not usable, the on-call contractor may set up by-pass pumping, which consists of long hose to be laid at least partially on the street surface. When it is necessary, this form of by-pass pumping may interfere with residents' access to their homes. Maintenance staff shall inform neighbors of the inconvenience and request that they park their vehicles on the streets while by-pass pumping continues. All by-pass hoses will be secured with signs, cones, delineators, arrowboards, and tape, as appropriate.

If the 4-inch forcemain is not usable, combination and/or Vactor trucks will be utilized to remove the wastewater. Residents may be notified to halt water use to minimize the sewage generation.

### D1-7 Traffic Control and Crowd Control

As stated in Section 4-14, if an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

All traffic control will comply with the Work Area Traffic Control Handbook (WATCH) standards.

### D1-8 Clean-up Procedures

#### Public Right of Way

Once the overflow has been corrected and contained, the maintenance staff will clean up all sewage. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system.

Any solids and semisolids remaining will be swept, raked, picked-up and transported for disposal at the OCSD Treatment Plant No. 2, located in the City of Huntington Beach.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

The site shall be disinfected and deodorized.

#### Storm Drain

Refer to Section 7 for detailed steps for spills that have reached the Los Alamitos Retarding Basin. As necessary, the maintenance staff will cordon off affected dry areas of the Los Alamitos Retarding Basin to block the sewage from reaching waters of the State. He/she shall start the removal of wastewater with the City's combination truck.

Once the overflow volume within the basin has been vacuumed out, the basin will be cleaned between the point of discharge and containment. The solids will be removed, and the basin will be washed down. The wash water will be vacuumed from the basin and disposed of at the OCSD Treatment Plant No. 2.

If an overflow reaches surface water within the Los Alamitos Retarding Basin, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates, Inc. ((562) 802-7880)**, respectively.

Portable aerators may be required where complete recovery of sewage is not possible. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultants.

#### Private Property

If there is damage to private property due to an overflow from a City pump station or forcemain, the maintenance staff will perform the initial clean-up operations, consisting of the following:

- Initial cleaning, including wiping and cleaning furniture
- Collect solid waste material
- Remove standing fluid from both indoor and outdoor areas
- Take photographs and video footage of the damaged and undamaged areas
- Inform the property owner of their right to hire a professional sewer clean-up service, which will be reimbursed by the City.
- Make arrangements to place the residents in a nearby hotel, as necessary



### D1-9 Overflow Volume Calculation

Overflow volume shall be calculated by the methodology developed by the Orange County Area Waste Discharge Requirements Steering Committee. The rate of the overflow is estimated by the characteristics of the overflow at the manhole, as depicted in Appendix C. The start and stop times will also be estimated from the Sanitary Sewer Overflow Reports. The calculated overflow volume will be the product of the estimated rate of the overflow and the estimated duration of the overflow. If the estimated rate or duration of the overflow could not be determined, the overflow can be estimated by evaluating the containment areas of the overflow.

As feasible, the maintenance staff will take photographs and video footage of the overflow manhole and containment area throughout the overflow period at different times throughout the overflow event as the overflow flowrate and volume change with time.

### D1-10 Reporting

As detailed in Section 8 of this report, once the cause of the overflow has been corrected and the overflow area has been cleaned, the maintenance staff will compile all pictures, video footage, the sewer overflow spill report (Appendix B), and any other notes. The City will report the spill to the State Water Resources Control Board, via the California Integrated Water Quality System online database.

### D1-11 Sampling Requirements

If the overflow has reached the waters of the State, the Responsible Staff will contact the City-approved laboratory, **Truesdail Laboratories ((714) 734-6239)**, to conduct sampling and analysis, as required. Truesdail Laboratories will take samples of the receiving waters, as necessary.

The environmental consultant, **John L. Hunter & Associates ((562) 802-7880)**, will also be contacted. The environmental consultant will be provided all reports, notes, pictures, video footage, and any information regarding the overflow. He/she will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultant will also evaluate what City actions have and need to be taken to meet the health requirements.

As detailed in Section 8-1 a detailed Sanitary Sewer Overflow Technical Report will be required by the State Water Resources Control Board (SWRCB) for any overflow greater than 50,000 gallons that reach the waters of the State. Truesdail Laboratory will need to be contacted to perform all water quality samples and to perform all environmental analyses, as required by the State Water Resources Control Board (SWRCB). The sampling will include the following, at minimum:

- Dissolved oxygen
- Total ammonia
- Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan Water Quality Objective or as directed by the SWRCB
- pH
- Electrical Conductivity
- Temperature
- Biochemical Oxygen Demand (BOD or CBOD)

### D1-12 Training

Maintenance staff will be trained on the emergency response procedures for a sewer overflow at the Adolfo Lopez Pump Station. Training will be conducted annually. At minimum, the following site-specific tasks will be addressed during the training session:

- Identification of the Overflow Sewer Manhole (MH U01-A05)
- Identification of the capture points, where the maintenance staff will need to divert sewer overflows from the nearby Los Alamitos Retarding Basin

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**APPENDIX D-2**  
**AQUATIC PARK PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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## APPENDIX D-2

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### AQUATIC PARK PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES

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#### D2-1 General

Located in Anaheim Bay, within the corporate boundaries of Seal Beach, but segregated from the Old Town area by the Wildlife Refuge and Naval Weapons Station, is the Sunset Aquatic Park. The park was acquired by the County in 1963 from the Navy and provides boat slips, boat ramps and picnic areas to the public. Sewer service to the Park is provided through a small collection system owned by the County, and a submersible pump station owned and operated by the City.

Aquatic Park Pump Station currently serves a 28.9-acre tributary area consisting entirely of the public lands of Sunset Aquatic Park. Park facilities being served by the sewer system consist of five restroom buildings, the Harbor Patrol building, a dockside café, the marina management offices, and the Sunset Aquatic Shipyard. Tributary land uses are summarized in Table D2-1 and shown in Figure D2-1.

**Table D2-1  
Aquatic Park Pump Station Tributary Land Uses**

Land Use	Area (ac)
Public Lands	26.6
Public Right-of-Way	2.3
<b>TOTAL</b>	<b>28.9</b>

#### Tributary Flows

The model was updated during the development of the 2018 Sewer Master Plan Update. The modeled tributary average dry weather flow (ADWF) is approximately 1.6 gpm, as determined by weekly meter reads on the discharge piping of the pump station during the 2014-2015 period. The modeled peak dry weather flow (PDWF) and peak wet weather flow are 4.6 gpm, and 6.4 gpm, respectively.

#### Pumps

The Aquatic Park Pump Station utilizes two (2) Piranha submersible grinder pumps (Model 35-2). The pumps are driven by 4.7 HP drive motors. Per the certified pump testing curves, the pumps deliver 30 gpm at a total dynamic head of 103 feet when operating at 3450 rpm. The pumps have the capacity to pump the ADWF of 1.6 gpm, the PDWF of 4.6 gpm, and the PWWF of 6.4 gpm.

#### Wet Well

The wet well is a reinforced concrete, polyurethane/epoxy lined rectangular structure measuring 6' wide by 8' long and 23'-3" high. The bottom elevation of the structure is -5.2 feet amsl. Access to the wet well is through a 5' x 6', aluminum double door, spring-assisted hatch at ground level (5.1 feet amsl). The pump station is equipped with level sensors and back up float switches. Per discussion with the City maintenance staff in July 2016, the lead pump and start when the level rises to 2.5 feet (-2.7 feet amsl) above the wet well floor, and turns off when the level drops to about 1.3 feet (-3.9 feet amsl) above the wet well floor. The lag pump turns on when the level rises to 3 feet (-2.2 ft amsl) above the bottom of the wet well and turns off when the level falls to 1.3 feet (-3.9 ft amsl).

#### Electrical

The Aquatic Park Pump Station is powered by a 100-amp, 3-phase, 4-wire service. There is no emergency generator located at this station. A receptacle for a portable 100 A generator is provided.





NATIONAL  
WILDLIFE  
REFUGE

Sunset Way

(2) 2-inch &  
(1) 4-inch FM

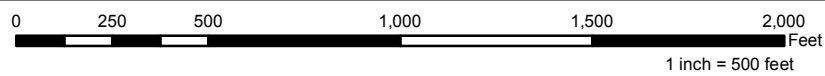
Aquatic  
Park PS

Pacific Coast Hwy

Sagamore Dr

**Legend**

Sewer Pump Station	<b>Land Use</b>
Manhole	RLD  Residential Low Density
Gravity Sewers	C-2  General Commercial
Forcemain	PLU  Public Use
Aquatic Park PS Tributary Area	
City Boundary	



**AKM**  
PROJECT NO: 0801223.00  
DATE: February 2018

CITY OF SEAL BEACH  
SEWER SYSTEM MANAGEMENT PLAN  
**Aquatic Park Pump Station  
Tributary Area**  
Figure D2-1



## Forcemain

There are two (2) 2-inch diameter PVC forcemains that extend east from the Aquatic Park Pump Station, east on Sunset Way, and east on Edinger Avenue to Trinidad land. Based on the existing average pump capacity of 30 gpm, the velocity in a single 2-inch forcemain is approximately 3.1 feet per second (fps), which is in the recommended velocity range of 3 to 5 fps.

### D2-2 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If a spill occurs during a wet weather event, and it enters the storm drain system, no drainage facilities will be entered or blocked with sandbags or plugs in attempt to contain the spill, as such action could potentially cause flooding. Additionally, City staff should not enter the storm drain system if unsafe conditions are observed.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system. Since the maintenance staff will not be addressing the containment and clean-up activities, any sewage that has overflowed from the sewer system will be considered part of the unrecovered overflow volume. To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall record the length of time the sewer system is overflowing. If possible, he/she will take photographs of the sewer overflow.

The following procedures generally deal with dry weather conditions. Procedures for wet weather spill response will be similar, except the storm drain system will not be entered to intercept and remove the sewage that has already entered the storm drain system and flow will not be blocked from entering the storm drains.

### D2-3 Preliminary Assessment Procedures

The Aquatic Park Pump Station is on a dialer system, which notifies the Seal Beach Police Department in the event of an alarm. Police Dispatch then notifies the Responsible Staff to oversee the overflow response.

The following are typical priority alarms monitored at the Aquatic Park Pump Station:

- High Wet Well Level
- Pump Failure
- Power Failures

Once an alarm has been identified, the maintenance staff will respond to the alarm within 1 hour of the initial notification.

Upon arrival the responding maintenance staff will assess and determine the course of action. The maintenance staff shall evaluate the pump station and spill site and request additional staff and/or equipment under the following circumstances:

- An overflow has entered the harbor, requiring at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- Without additional staff, an overflow has the potential of entering the harbor, which would require at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- The maintenance staff determines if additional expertise and/or work power is required to correct a failed pump, to contain an overflow, or to clean up the site

He/she shall complete the Sanitary Sewer Overflow (SSO) Spill Report (Appendix B), which should include the following, at a minimum.

- Call time, or the time that the City became aware of the spill
- Location of the spill (manhole, clean out, interceptor, etc.)

- The cause of the SCADA alarm and potential overflow (clogged pump, broken pump, broken forcemain, etc.)
- Whether the spillage entered a storm drain and, if so, if it was contained there
- Name and contact number of person reporting the SSO Spill Report
- Name(s) of responding City staff
- Actions taken of responding City staff
- Time, location, and volume details of spill and cleanup, including:
  - Spill Volume
  - Recovered Spill Volume
  - Wash Water Volume
  - Recovered Wash Water Volume
  - Spill Start and End Time
  - Final Destination of Overflow
- Whether additional agencies need to be contacted. See Table 4-4 for the detailed list of agencies and their contact information. Potential agencies include but are not limited to:
  - Orange County Health Care Agency (OCHCA)
  - Office of Emergency Services (OES)
  - Orange County Public Works (OCPW)
  - On-call Contractors
  - Orange County Fire Department (Hazardous Materials)
  - Seal Beach Police Department (Traffic Control)
  - Southern California Edison (if alarm/failure is due to a power outage)
- Whether public and/or private property has been damaged
- RWQCB Spill Category
- Location of prior overflows within 1,000 feet of overflow
- Amount of precipitation 72-hour prior to overflow
- Notification times and person(s) contacted at OCHCA, OES, and OCPW

He/she will notify the Responsible Staff of his/her findings at the earliest opportunity.

#### **D2-4 Response Time**

#### **Emergency Storage Fill Time**

The maintenance staff will strive to respond to a notification of an alarm before sewage has overflowed from a sewer facility. According to the Aquatic Park Pump Station as-built plans, the upstream sewers to the pump station are deep and will provide significant storage in the event of a pump station failure. In the event of such a failure, the wastewater will fill the wet well and the upstream sewer system.

Based on the upstream system estimated emergency storage volume and the tributary PDWF, the City will have a minimum of 8 hours to respond to the pump station before an overflow would occur. The cited minimum response time was calculated by dividing the storage volume within the wet well between the high-level alarm and the spill elevation by the PDWF. The accuracy of the City's GIS shapefiles for the Aquatic Park Pump Station tributary sewer system is not complete, and does not include the County owned facilities. There may be additional storage within the upstream sewers and manholes. It is recommended that in the event of an

overflow, water service to the Sunset Aquatic Park should be shutoff, which ultimately stops the wastewater discharge to the Aquatic Park Pump Station.

The maintenance staff will respond to a notification of a pump station alarm within one (1) hour, regardless of the emergency storage available at this pump station.

If the maintenance staff anticipate an overflow will occur before they arrive to the site, the staff will be prepared to try to contain and capture the sewage on the local street.

## D2-5 Containment Procedures

In the event of a pump station failure, there is a minimum of 8 hours of emergency storage available. The high-priority areas to be contained in the event of an overflow are detailed on Figure D2-2.

### Overflow Sewer Manhole

It is anticipated that the wet well would overflow in the event of a failure at the Aquatic Park Pump Station. The ground surface elevation at the Aquatic Park Pump Station wet well is 5.1 feet. The maintenance staff will contain the overflow as close to the overflow manhole as possible by using sand bags, waddles, plastic sheets, rubber mats, earth berms, and other obstructing material.

### Street and Private Property Containment

The maintenance staff shall keep the overflow area clear from the public by setting up barriers around the overflow. The area impacted by the overflow and potential subsequent work area will be secured with the use of signs, cones, delineators, barricades, arrowboards, and tape, as appropriate to divert traffic and to protect the public health and safety.

### Harbor Containment

The Aquatic Park Pump Station is approximately 50 feet from Anaheim Bay. As detailed on Figure D2-2. If an overflow reaches any private storm drains and/or grate drains that lead to the harbor, the City will try to contain the overflow within the drain.

Upon arrival at the site, the maintenance staff will determine if the overflow can be contained in the parking lot as the sewer pump failure is being addressed. If necessary, he/she will contact additional crews to request work power and equipment to handle both tasks simultaneously. The maintenance staff will block raw sewage from entering the harbor, if possible, using sandbags, dirt berms, waddles, rubber mats, plastic sheeting or other obstructing material.

Maintenance staff shall start the removal of the wastewater with the City's combination truck. Additional Vector and/or combination trucks from outside sources and/or neighboring agencies may be requested as necessary. The contact information is included in Table 4-3 and Table 4-4 of this report. If an overflow reaches any storm drain and/or waters of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**, respectively.

### Notification

The responding maintenance staff will follow the notification procedures included in Chapter 4 for a Category 1 spill that has reached waters of the State. In general, CalOES, OCHCA, and OCPW must be notified. The City approved laboratory and environmental consultant will be contacted, as necessary.





**Legend**

- ▲ Sewer Pump Station
- Manhole
- Gravity Sewers
- - - - - Forcemain
- ▭ Aquatic Park PS Tributary Area
- ▭ City Boundary

**Storm Drain Facilities**

- Catch Basin
- ▬ OCFCO Drainage Channel
- ▬ San Gabriel River
- ▬ Federal Drainage Channel
- ▬ Local Storm Drain
- ▬ Private Storm Drain
- Drainage Direction

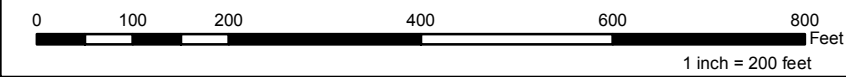
Prevent spill from entering surface water

Aquatic Park PS  
GSE=5.1'

Capture Point  
Priority #1

(2) 2-inch &  
(1) 4-inch FM

Sunset Way



**AKM**  
PROJECT NO: 0801223.00  
DATE: February 2018

CITY OF SEAL BEACH  
SEWER SYSTEM MANAGEMENT PLAN  
**Aquatic Park Pump Station  
Capture Points**  
Figure D2-2



## **D2-6 Pump Station and Forcemain Correctional Procedures**

### **Failed Pump**

In the event of one pump failure, the maintenance staff will manually switch the pump station to operate with the second (operable) pump, if the SCADA system has not automatically done so. The City has a standby pump and motor for Aquatic Park Pump Station at the City Public Works Maintenance Yard.

If one pump at the station can be operated, the maintenance staff will address the pump failure.

- If there is an obstruction in the pump that can be removed easily, the maintenance staff will clear the pump obstruction and place the pump back in service.
- If the failure is due to a closed check valve or isolation valve, the maintenance staff will fix the check valve setting and/or open the closed isolation valve.

If the failure is due to severe ragging or a broken pump, the maintenance staff will request an additional crew, if necessary, to transport the standby pump from the City public works yard. The standby pump will be placed into service, as the ragging is cleared. The maintenance staff will determine if the pump can be salvaged. If not, a new pump will be ordered to replace the broken pump.

If the failure is due to a broken check valve or isolation valve, the maintenance staff will replace the broken valve. The maintenance staff will determine if the valve can be salvaged. If not, a new valve will be ordered to replace the broken valve.

### **Failed Electrical Facilities**

If the failure is due to a Southern California Edison (SCE) power outage, the responding maintenance staff will contact Southern California Edison to expedite repairs. The pump station is not equipped with an on-site generator. As such, responding staff should bring a portable 100 A generator and connect it to the emergency generator receptacle.

If the overflow is due to an electrical failure at the pump station, a City electrician or a contract electrician will be contacted. In the event that there is a failure at one motor, the maintenance staff will request an additional crew, if necessary, to transport the standby pump and motor from the City Public Works Maintenance Yard. He/she will place the backup pump and motor into operation. The maintenance staff will determine if the motor can be salvaged. If not, a new motor will be ordered.

### **Failed Forcemain**

If the overflow is due to a failure of the operating 2-inch forcemain, rendering it unusable, the City should make use of the redundant parallel 2-inch forcemain.

If both forcemains are rendered unusable, by-pass pumping may be set up. The City may use its combination truck will be utilized to remove the wastewater. Collected wastewater will be hauled to the Orange County Sanitation District's (OCS D) Treatment Plant No. 2, located in the City of Huntington Beach.

### **By-pass Pumping**

The maintenance staff may need to utilize by-pass pumping under any of the following circumstances:

- Rising sewage levels in the wet well, greater than the pump start setting
- Failure of both pumps and/or motors leave the pump station inoperable
- No power is available from either SCE or the emergency generator
- Failure of either 2-inch forcemains

When one of the 2-inch forcemains is operable, the City may contact a contractor to set up by-pass pumping. The suction end of the by-pass pump will be placed into the bottom of the wet well and a temporary discharge hose will be connected to the by-pass port of the operable forcemain.

If both 2-inch forcemains are not usable, combination and/or Vactor trucks will be utilized to remove the wastewater. Residents may be notified to halt water use to minimize sewage generation.

## D2-7 Traffic Control and Crowd Control

As stated in Section 4-14, if an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

All traffic control will comply with the Work Area Traffic Control Handbook (WATCH) standards.

## D2-8 Clean-up Procedures

### Public Right of Way

Once the overflow has been corrected and contained, the maintenance staff will clean up all sewage. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system.

Any solids and semisolids remaining will be swept, raked, picked-up and transported for disposal at the OCSD Treatment Plant No. 2, located in the City of Huntington Beach.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

The site shall be disinfected and deodorized.

### Harbor

If an overflow reaches any private storm drains and/or grate drains that lead to the harbor, the City will try to contain the overflow within the drain.

If the overflow reaches waters of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates, Inc. ((562) 802-7880)**, respectively.

### Private Property

If there is damage to private property due to an overflow from a City pump station or forcemain, the maintenance staff will perform the initial clean-up operations, consisting of the following:

- Initial cleaning, including wiping and cleaning furniture
- Collect solid waste material
- Remove standing fluid from both indoor and outdoor areas
- Take photographs and video footage of the damaged and undamaged areas
- Inform the property owner of their right to hire a professional sewer clean-up service, which will be reimbursed by the City.

## D2-9 Overflow Volume Calculation

Overflow volume shall be calculated by the methodology developed by the Orange County Area Waste Discharge Requirements Steering Committee. The rate of the overflow is estimated by the characteristics of the overflow at the manhole, as depicted in Appendix C. The start and stop times will also be estimated from the Sanitary Sewer Overflow Reports. The calculated overflow volume will be the product of the estimated rate of the overflow and the estimated duration of the overflow. If the estimated rate or duration of the overflow could not be determined, the overflow can be estimated by evaluating the containment areas of the overflow.

As feasible, the maintenance staff will take photographs and video footage of the overflow manhole and containment area throughout the overflow period at different times throughout the overflow event as the overflow flowrate and volume change with time.

## D2-10 Reporting

As detailed in Section 8 of this report, once the cause of the overflow has been corrected and the overflow area has been cleaned, the maintenance staff will compile all pictures, video footage, the sewer overflow spill report (Appendix B), and any other notes. The City will report the spill to the State Water Resources Control Board, via the California Integrated Water Quality System online database.

## D2-11 Sampling Requirements

If the overflow has reached the waters of the State, the Responsible Staff will contact the City-approved laboratory, **Truesdail Laboratories ((714) 734-6239)**, to conduct sampling and analysis, as required. Truesdail Laboratories will take samples of the receiving waters, as necessary.

The environmental consultant, **John L. Hunter & Associates ((562) 802-7880)**, will also be contacted. The environmental consultant will be provided all reports, notes, pictures, video footage, and any information regarding the overflow. He/she will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultant will also evaluate what City actions have and need to be taken to meet the health requirements.

As detailed in Section 8-1, a detailed Sanitary Sewer Overflow Technical Report will be required by the State Water Resources Control Board (SWRCB) for any overflow greater than 50,000 gallons that reach the waters of the State. Truesdail Laboratory will need to be contacted to perform all water quality samples and to perform all environmental analyses, as required by the State Water Resources Control Board (SWRCB). The sampling will include the following, at minimum:

- Dissolved oxygen
- Total ammonia
- Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan Water Quality Objective or as directed by the SWRCB
- pH
- Electrical Conductivity
- Temperature
- Biochemical Oxygen Demand (BOD or CBOD)

## D2-12 Training

Maintenance staff will be trained on the emergency response procedures for a sewer overflow at the Aquatic Park Pump Station. Training will be conducted annually. At minimum, the following site specific tasks will be addressed during the training session:

- Identification of the capture points, where the maintenance staff will need to divert sewer overflows from the adjacent harbor
- Instruction of how to set up by-pass pumping

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**APPENDIX D-3  
PIER PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**APPENDIX D-3**  
**PIER PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**D3-1 General**

The Pier Pump Station was destroyed by the fire on the Seal Beach Municipal Pier in early 2016. Overflow procedures should be revised upon reconstruction of this pump station.

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**APPENDIX D-4  
BOEING PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**APPENDIX D-4**

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**BOEING PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**D4-1 General**

The Boeing Pump Station is a submersible pump station located adjacent to the Boeing Company campus along Seal Beach Boulevard, southwest of the intersection of Seal Beach Boulevard and Westminster Boulevard. Access to the pump station is from Seal Beach Boulevard. The existing station was constructed in 2003. The ground elevation at the pump station site is approximately 8.5 feet amsl.

The Boeing Pump Station currently serves an 80.4-acre tributary area consisting of light manufacturing and general commercial land uses. Tributary area land uses are summarized in Table D4-1 and shown in Figure D4-1.

**Table D4-1  
Boeing Pump Station Tributary Land Uses**

<b>Land Use</b>	<b>Area (ac)</b>
General Commercial	7.5
Light Manufacturing	68.3
Public Right-of-Way	4.6
<b>TOTAL</b>	<b>80.4</b>

**Tributary Flows**

The model was updated during the development of the 2018 Sewer Master Plan Update. The modeled tributary average dry weather flow (ADWF) is approximately 27.4 gpm, as determined by weekly meter reads on the discharge piping during the 2014-2015 period. The modeled peak dry weather flow (PDWF) and peak wet weather flow (PWWF) are 63.3 gpm and 88.6 gpm respectively.

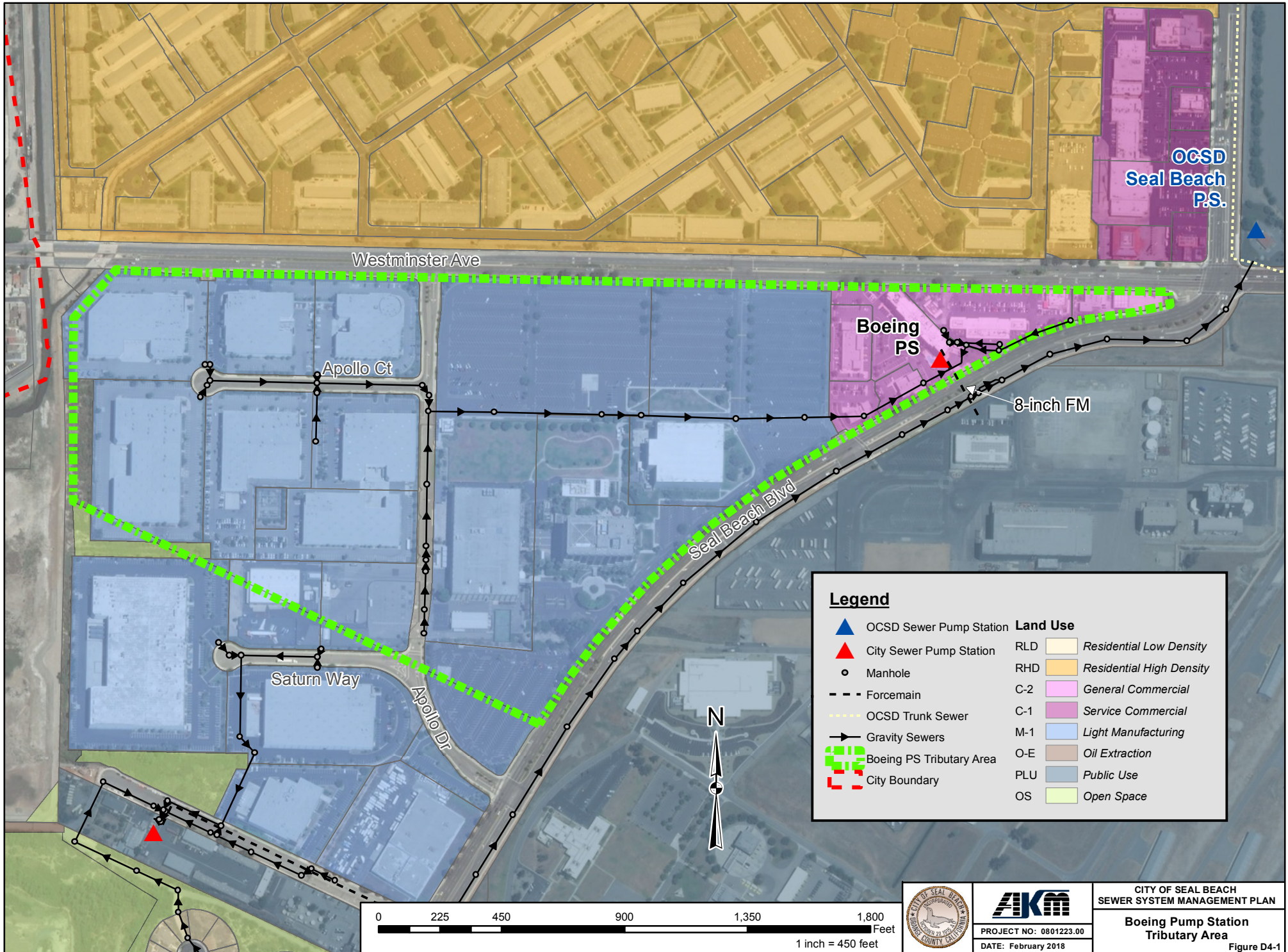
**Pumps**

The Boeing Pump Station utilizes two (2) WEMCO vortex submersible pumps (Model 6X6ES). The pumps are driven by 10 HP drive motors. Per the certified pump testing curves, the pumps deliver 530 gpm at a total dynamic head of 21 feet when operating at 1170 rpm. The pumps have the capacity to pump the ADWF of 27.4 gpm, the PDWF of 63.3 gpm, and the PWWF of 88.6 gpm.

**Wet Well**

The wet well is a reinforced concrete, T-Lock PVC lined circular structure that is 8'-0" in diameter and 28' high. The bottom elevation of the structure is -19.5 feet amsl. Access to the wet well is through a 5' x 5', aluminum double door, spring-assisted hatch at ground level (8.5 feet amsl). The pump station is equipped with level sensors and back up float switches. Per discussion with the City maintenance staff in July 2016, the lead pump will start when the level rises to 6 feet (-13.5 feet amsl) above the wet well floor, and turns off when the level drops to about 3.0 feet (-16.5 feet amsl) above the wet well floor. The lag pump turns on when the level rises to 7 feet (-12.5 ft amsl) above the bottom of the wet well and turns off when the level falls to 3.5 feet (-16.0 ft amsl).

It is recommended that the City install Smart Manhole covers at MH U02-E17 (Apollo Court, west of Apollo Drive) and at the upstream manhole to the Boeing Pump station (MH S01-136) to provide additional backup alarms to inform maintenance staff of a possible pump station failure. The Boeing Pump Station tributary area and the locations of the recommended Smart MH covers are detailed on Figure D4-2.



**AKM**  
PROJECT NO: 0801223.00  
DATE: February 2018

CITY OF SEAL BEACH  
SEWER SYSTEM MANAGEMENT PLAN  
**Boeing Pump Station  
Tributary Area**  
Figure D4-1





## Electrical

The Boeing Pump Station is powered by a 100-amp, 3-phase, 4-wire service. A natural gas powered, 100-kW generator is located just north of the valve vault.

## Forcemain

The Boeing Pump Station forcemain is an 8-inch diameter PVC pipe, which was constructed in 2003 when the pump station was upgraded. The forcemain extends approximately 50 feet from the east side of the dry well towards the northeast, then east to MH S01-102 in Seal Beach Boulevard. The forcemain empties into a 12" lateral which feeds the 24" Seal Beach Boulevard Trunk Line. Based on the existing average pump capacity of 530 gpm, the velocity in the 8-inch forcemain is approximately 3.8 feet per second (fps), which is in the recommended velocity range of 3 to 5 fps.

## D4-2 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If a spill occurs during a wet weather event, and it enters the storm drain system, no drainage facility will be entered or blocked with sandbags or plugs to contain the spill, as such action could potentially cause flooding. Additionally, City staff should not enter the storm drain system if unsafe conditions are observed.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system. Since the maintenance staff will not be addressing the containment and clean-up activities, any sewage that has overflowed from the sewer system will be considered part of the unrecovered overflow volume. To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall record the length of time the sewer system is overflowing. If possible, he/she will take photographs of the sewer overflow.

The following procedures generally deal with dry weather conditions. Procedures for wet weather spill response will be similar, except the storm drain system will not be entered to intercept and remove the sewage that has already entered the storm drain system, and no flow will be blocked from entering the storm drains.

## D4-3 Preliminary Assessment Procedures

The Boeing Pump Station is on a dialer system, which notifies the Seal Beach Police Department in the event of an alarm. Police Dispatch then notifies the Responsible Staff to oversee the overflow response.

The following are alarms monitored at the Boeing Pump Station:

- High Wet Well Level
- Pump Failure
- Power Failures
- Generator Failure

Once an alarm has been identified, the maintenance staff will respond to the alarm within 1 hour of the initial notification.

Upon arrival the responding maintenance staff will assess and determine the course of action. The maintenance staff shall evaluate the pump station and spill site and request additional staff and/or equipment under the following circumstances:

- An overflow has entered the storm drain system, requiring at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- Without additional staff, an overflow has the potential of entering the storm drain system, which would require at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- The maintenance staff determines if additional expertise and/or work power is required to correct a failed pump, to contain an overflow, or to clean up the site

He/she shall complete the Sanitary Sewer Overflow (SSO) Spill Report (Appendix B), which should include the following, at a minimum.



- Call time, or the time that the City became aware of the spill
- Location of the spill (manhole, clean out, interceptor, etc.)
- The cause of the SCADA alarm and potential overflow (clogged pump, broken pump, broken forcemain, etc.)
- Whether the spillage entered a storm drain and, if so, if it was contained there
- Name and contact number of person reporting the SSO Spill Report
- Name(s) of responding City staff
- Actions taken by responding City staff
- Time, location, and volume details of spill and cleanup, including:
  - Spill Volume
  - Recovered Spill Volume
  - Wash Water Volume
  - Recovered Wash Water Volume
  - Spill Start and End Time
  - Final Destination of Overflow
- Whether additional agencies need to be contacted. See Table 4-4 for the detailed list of agencies and their contact information. Potential agencies include but are not limited to:
  - Orange County Health Care Agency (OCHCA)
  - Office of Emergency Services (OES)
  - Orange County Public Works (OCPW)
  - On-call Contractors
  - Orange County Fire Department (Hazardous Materials)
  - Seal Beach Police Department (Traffic Control)
  - Southern California Edison (if alarm/failure is due to a power outage)
- Whether public and/or private property has been damaged
- RWQCB Spill Category
- Location of prior overflows within 1,000 feet of overflow
- Amount of precipitation 72-hour prior to overflow
- Notification times and person(s) contacted at OCHCA, OES, and OCPW

He/she will notify the Responsible Staff of his/her findings at the earliest opportunity.

#### **D4-4 Response Time**

##### **Emergency Storage Fill Time**

The maintenance staff will strive to respond to a notification of an alarm before sewage has overflowed from a sewer facility. According to the City's topographic maps, hydraulic model, and GIS shapefiles, the upstream sewers to the Boeing Pump Station are deep and will provide significant storage in the event of a pump station failure. In the event of a such failure, the wastewater will back up into the upstream gravity sewers and manholes, which will act as part of the pump station's emergency storage.

Based on the upstream system estimated emergency storage volume and the tributary PDWF, the City will have approximately 11 hours to respond to the pump station before an overflow would occur. The cited minimum response time was calculated by dividing the total available system storage volume (calculated as the volume of influent sewer pipe network and associated manholes below the estimated rim elevation at the expected spill manhole, plus the storage volume available in the wet well between the high-level alarm elevation and the spill elevation) by the PDWF.

The maintenance staff will respond to a notification of a pump station alarm within one (1) hour, regardless of the emergency storage available at this pump station.

If the maintenance staff anticipate an overflow will occur before they arrive to the site, the staff will be prepared to try to contain and capture the sewage on the local street and within the storm drain system.

#### **D4-5 Containment Procedures**

In the event of a pump station failure, there is a minimum of 11 hours of emergency storage available. The storm drain manholes and catch basins requiring protection in the event of an overflow are prioritized on Figure D4-2.

#### **Overflow Sewer Manhole**

The ground surface elevation at the Boeing Pump Station wet well is 8.5 feet. The City's 1-foot contour data shows that the tributary area generally slopes east to west towards the San Gabriel River in the western portion of the area. Although elevation data is uncertain for much of the Boeing Pump Station sewershed, the City's GIS sewer manhole data indicate that the lowest manhole rim elevation is 9.3 feet at MH U02-E17. It is anticipated that an overflow would occur at this manhole, in the event of a pump station failure. The sewer manhole rim elevations at MH U02-E19, MH U02-E22, and MH U02-E24 are also low should be evaluated if there is a pump station failure. The potential overflow sewer manholes are illustrated on Figure D4-2. The maintenance staff will contain the overflow as close to the overflow manhole as possible by using sand bags, waddles, plastic sheets, rubber mats, earth berms, and other obstructing material.

#### **Street and Private Property Containment**

The maintenance staff shall keep the overflow area clear from the public by setting up barriers around the overflow. The area impacted by the overflow and potential subsequent work area will be secured with the use of signs, cones, delineators, barricades, arrowboards, and tape, as appropriate to divert traffic and to protect the public health and safety.

#### **Storm Drain Containment**

Sewer MH U02-E17 is approximately 1,000 feet east of an OCPW drainage canal just upstream of the Los Alamitos Retarding Basin. Figure D4-2 indicates the storm drain catch basins and storm drain manholes that need to be protected, in order of priority. If the spill occurs at the sewer pump station, sewage will enter the storm drain system on Seal Beach Boulevard. It will be conveyed northwest to Westminster Avenue and west to the Los Alamitos Detention Basin.

If sewage is flowing any sewer manhole, the responding maintenance staff will block it from entering the storm drain catch basin system using sandbags, plastic sheeting or other obstructing material. The nearby storm drain manholes will also be protected from the sanitary sewer overflow. The pick holes and vents will be plugged and the flow diverted from these structures, if possible. To contain the overflow within the storm drain, the maintenance staff will try to intercept the overflows in the downstream storm drains before it reaches the waters of the State. He/she will place sand bags inside the storm drain manhole to block the sewage and use the City Vector truck to pump the sewage out of the storm drain.

In any event, the maintenance staff will contain the sewage and prevent it from entering the Los Alamitos Retarding Basin. If the spill has reached the basin and it is dry, the spill should be contained as close as possible to the entry point. Refer to Section 7 for detailed steps for spills that have reached the Los Alamitos Retarding Basin. Upon arrival at the site, the maintenance staff will determine if the overflow can be contained in the access road, away from the storm drain system, as the sewer pump failure is being addressed. If necessary he/she will contact additional crews to request work power and equipment to handle both tasks simultaneously. The maintenance staff will block raw sewage from entering the retarding basin, if possible, using sandbags, dirt berms, waddles, rubber mats, plastic sheeting or other obstructing material. The pick holes



and vents of any storm drain manholes in the path of the spill will be plugged and the flow diverted from these structures, if possible.

Maintenance staff shall start the removal of the wastewater from the street with a Vactor truck. Additional Vactor and/or combination trucks from outside sources and/or neighboring agencies may be requested as necessary. The contact information is included in Table 4-3 and Table 4-4 of this report. If an overflow reaches surface water in the Los Alamitos Retarding Basin, the Responsible Staff will contact the City-approved environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**.

#### Notification

The responding maintenance staff will notify OCPW if the overflow has reached the Los Alamitos Retarding Basin. The maintenance staff will inform OCPW of the overflow and the plan of action for containment and clean-up.

The responding maintenance staff will follow the notification procedures laid out in Chapter 4 for a Category 1 spill if the overflow has reached the beach or waters of the State. In general, CalOES, OCHCA, and OCPW must be notified. The City approved laboratory and environmental consultant will be contacted, as necessary.

### D4-6 Pump Station and Forcemain Correctional Procedures

#### Failed Pump

In the event of one pump failure, the maintenance staff will manually switch the pump station to operate with the second (operable) pump, if the SCADA system has not automatically done so. The City has a standby pump and motor for the Boeing Pump Station at the City Public Works Maintenance Yard.

If one pump at the station can be operated, the maintenance staff will address the pump failure.

- If there is an obstruction in the pump that can be removed easily, the maintenance staff will clear the pump obstruction and place the pump back in service.
- If the failure is due to a closed check valve or isolation valve, the maintenance staff will fix the check valve setting and/or open the closed isolation valve.

If the failure is due to severe ragging or a broken pump, the maintenance staff will request an additional crew, if necessary, to transport the standby pump from the City public works yard. The standby pump will be placed into service, as the ragging is cleared. The maintenance staff will determine if the pump can be salvaged. If not, a new pump will be ordered to replace the broken pump.

If the failure is due to a broken check valve or isolation valve, the maintenance staff will replace the broken valve. The maintenance staff will determine if the valve can be salvaged. If not, a new valve will be ordered to replace the broken valve.

#### Failed Electrical Facilities

If the failure is due to a Southern California Edison (SCE) power outage, the responding maintenance staff will contact Southern California Edison to expedite repairs. The pump station is equipped with a 100-KW onsite natural gas generator with an automatic transfer switch. However, if upon arrival to the pump station the maintenance staff finds that the automatic transfer switch has failed to connect to the generator, he/she will set the generator as the main power source.

If the overflow is due to an electrical failure at the pump station, a City electrician or a contract electrician will be contacted. In the event that there is a failure at one motor, the maintenance staff will request an additional crew, if necessary, to transport the standby pump and motor from the City Public Works Maintenance Yard. He/she will place the backup pump and motor into operation. The maintenance staff will determine if the motor can be salvaged. If not, a new motor will be ordered.

#### Failed Forcemain

If the overflow is due to a failure of the 4-inch forcemain, rendering it unusable, by-pass pumping may be set up.

The City may also use its combination truck to remove the wastewater from the wet well. Additional Vector and/or combination trucks from outside sources and/or neighboring agencies may be requested, as necessary. The contact information is included in Table 4-3 and Table 4-4.

Collected wastewater will be hauled to the Orange County Sanitation District's (OCSD) Treatment Plant No. 2, located in the City of Huntington Beach.

### By-pass Pumping

The maintenance staff may need to utilize by-pass pumping under any of the following circumstances:

- Rising sewage levels in the wet well, greater than the pump start setting
- Failure of both pumps and/or motors leave the pump station inoperable
- No power is available from either SCE or the emergency generator
- Failure of the 8-inch forcemain

When the 8-inch forcemain is operable, the City may contact an on-call contractor to set up by-pass pumping. The suction end of the by-pass pump will be placed into the bottom of the wet well and a temporary discharge hose will be run to the by-pass connection in the valve vault.

When the existing forcemain is not usable, the on-call contractor may set up by-pass pumping, which consists of long hose to be laid at least partially on the street surface. When it is necessary, this form of by-pass pumping may interfere with residents' access to their homes. Maintenance staff shall inform neighbors of the inconvenience and request that they park their vehicles on the streets while by-pass pumping continues. All by-pass hoses will be secured with signs, cones, delineators, arrowboards, and tape, as appropriate.

If the 8-inch forcemain is not usable, combination and/or Vector trucks will be utilized to remove the wastewater. Residents may be notified to halt water use to minimize the sewage generation.

### D4-7 Traffic Control and Crowd Control

As stated in Section 4-14, if an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

All traffic control will comply with the Work Area Traffic Control Handbook (WATCH) standards.

### D4-8 Clean-up Procedures

#### Public Right of Way

Once the overflow has been corrected and contained, the maintenance staff will clean up all sewage. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system.

Any solids and semisolids remaining will be swept, raked, picked-up and transported for disposal at the OCSD Treatment Plant No. 2, located in the City of Huntington Beach.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

The site shall be disinfected and deodorized.

#### Storm Drain

As necessary, the maintenance staff will cordon off affected dry areas of the storm drain channel or the Los Alamitos Retarding Basin to block the sewage from reaching waters of the State. He/she shall start the removal of wastewater with the City's combination truck.

Once the overflow volume within the storm drain and/or retarding basin has been vacuumed out, the areas of the facility in contact with the sewer overflow will be washed down. The wash water will be vacuumed from the basin and disposed of at the OCSD Treatment Plant No. 2.

If an overflow reaches the Los Alamitos Retarding Basin or waters of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239) and John L. Hunter & Associates, Inc. ((562) 802-7880)**, respectively.

Portable aerators may be required where complete recovery of sewage is not possible. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultants.

### Private Property

If there is damage to private property due to an overflow from a City pump station or forcemain, the maintenance staff will perform the initial clean-up operations, consisting of the following:

- Initial cleaning, including wiping and cleaning furniture
- Collect solid waste material
- Remove standing fluid from both indoor and outdoor areas
- Take photographs and video footage of the damaged and undamaged areas
- Inform the property owner of their right to hire a professional sewer clean-up service, which will be reimbursed by the City.
- Make arrangements to place the residents in a nearby hotel, as necessary

### D4-9 Overflow Volume Calculation

Overflow volume shall be calculated by the methodology developed by the Orange County Area Waste Discharge Requirements Steering Committee. The rate of the overflow is estimated by the characteristics of the overflow at the manhole, as depicted in Appendix C. The start and stop times will also be estimated from the Sanitary Sewer Overflow Reports. The calculated overflow volume will be the product of the estimated rate of the overflow and the estimated duration of the overflow. If the estimated rate or duration of the overflow could not be determined, the overflow can be estimated by evaluating the containment areas of the overflow.

As feasible, the maintenance staff will take photographs and video footage of the overflow manhole and containment area throughout the overflow period at different times throughout the overflow event as the overflow flowrate and volume change with time.

### D4-10 Reporting

As detailed in Section 8 of this report, once the cause of the overflow has been corrected and the overflow area has been cleaned, the maintenance staff will compile all pictures, video footage, the sewer overflow spill report (Appendix B), and any other notes. The City will report the spill to the State Water Resources Control Board, via the California Integrated Water Quality System online database.

### D4-11 Sampling Requirements

If the overflow has reached the waters of the State, the Responsible Staff will contact the City-approved laboratory, **Truesdail Laboratories ((714) 734-6239)**, to conduct sampling and analysis, as required. Truesdail Laboratories will take samples of the receiving waters, as necessary.

The environmental consultant, **John L. Hunter & Associates ((562) 802-7880)**, will also be contacted. The environmental consultant will be provided all reports, notes, pictures, video footage, and any information regarding the overflow. He/she will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultant will also evaluate what City actions have and need to be taken to meet the health requirements.

As detailed in Section 8-1, a detailed Sanitary Sewer Overflow Technical Report will be required by the State Water Resources Control Board (SWRCB) for any overflow greater than 50,000 gallons that reach the waters of the State. Truesdail Laboratory will need to be contacted to perform all water quality samples and to perform all environmental analyses, as required by the State Water Resources Control Board (SWRCB). The sampling will include the following, at minimum:

- Dissolved oxygen
- Total ammonia
- Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan Water Quality Objective or as directed by the SWRCB
- pH

- Electrical Conductivity
- Temperature
- Biochemical Oxygen Demand (BOD or CBOD)

#### **D4-12 Training**

Maintenance staff will be trained on the emergency response procedures for a sewer overflow at the Boeing Pump Station. Training will be conducted annually. At minimum, the following site specific tasks will be addressed during the training session:

- Identification of the Overflow Sewer Manhole (MH U01-A05)
- Identification of the capture points, where the maintenance staff will need to divert sewer overflows from the nearby Los Alamitos Retarding Basin
- Instruction of how to set up by-pass pumping



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**APPENDIX D-5**  
**8<sup>th</sup> STREET PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**APPENDIX D-5**

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**8<sup>th</sup> STREET PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**D5-1 General**

The 8<sup>th</sup> Street is the oldest pump station in the City, constructed in the 1920's. As a result of the recommendation in the 2005 Master Plan Update, this station was completely rebuilt in 2014-15. The ground elevation at the pump station site is approximately 13.7 feet amsl. The station serves the entire strip of residential homes south of Ocean Avenue, and the pier. 1<sup>st</sup> Street Pump Station and the future Pier Pump Station are tributary to the 8<sup>th</sup> Street Pump Station.

The 8<sup>th</sup> Street Pump Station currently serves a 31.2-acre area, which includes the areas tributary to the 1<sup>st</sup> Street Pump Station and Pier Pump Station. Tributary area land uses are summarized in Table D5-1 and shown in Figure D5-1.

**Table D5-1  
8<sup>th</sup> Street Pump Station Tributary Land Uses**

<b>Land Use</b>	<b>8th Street PS Gravity Tributary Area (ac)</b>	<b>1st Street PS Tributary Area (ac)</b>	<b>Total Tributary Area (ac)</b>
Main Street Specific Plan (Commercial)	2.8		2.8
High Density Residential	6.0		6.0
Low Density Residential	8.9		8.9
Public Right-of-Way	1.9		1.9
Open Space		9.2	9.2
Light Commercial		0.7	0.7
Public Lands		1.7	1.7
<b>TOTAL</b>	<b>19.5</b>	<b>11.6</b>	<b>31.2</b>

The 1<sup>st</sup> Street Pump Station pumps to MH F15-328, where the flow is conveyed west by gravity to the 8<sup>th</sup> Street Pump Station. Once the restaurant at the end of the pier is reconstructed, the wastewater flows will be pumped into the 8<sup>th</sup> Street Pump Station tributary gravity sewers at MH F15-367.

**Tributary Flows**

The model was updated during the development of the 2018 Sewer Master Plan Update. The model tributary average dry weather flow (ADWF) is approximately 23.4 gpm, as estimated from weekly meter reads on the discharge piping of the pump station during the 2014-2015 period.

At ultimate buildout, the Department of Water and Power (DWP) will develop the parcel adjacent to the 1<sup>st</sup> Street Pump Station and the restaurant at the end of the Pier will be reconstructed. At ultimate buildout, the expected average dry weather flows are expected to increase to 35 gpm. The ultimate peak dry weather flows (PDWF) and peak wet weather flows (PWWF) are expected to increase to 76 gpm and 103 gpm, respectively.

**Pumps**

The 8<sup>th</sup> Street Pump Station utilizes two (2) WEMCO recessed impeller pumps with submersible 7.5 HP drive motors (Model No. 4x11 TF CLCESR). Per the certified pump testing curves, the pumps deliver 290 gpm at a total dynamic head of 22 feet when operating at 1170 rpm. The pumps have the capacity to pump the ultimate ADWF of 35 gpm, the ultimate PDWF of 76 gpm, and the ultimate PWWF of 103 gpm.

**Wet Well**

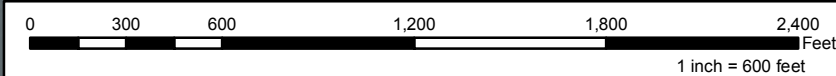
There is a primary and an auxiliary wet well at the 8<sup>th</sup> Street Pump Station. The 2014-15 improvement project included structural improvements and combination of the original wet well and dry well into a new wet well. The original dry well section is lined with PVC, and the original wet well is coated with Sancon 100





**Legend**

- |  |                              |                 |  |
|--|------------------------------|-----------------|--|
|  | Sewer Pump Station           | <b>Land Use</b> |  |
|  | Manhole                      | RLD             | Residential Low Density                          |
|  | Gravity Sewers               | RMD             | Residential Medium Density                       |
|  | Forcemain                    | RHD             | Residential High Density                         |
|  | 8th Street PS Tributary Area | L-C             | Light Commercial                                 |
|  | 1st St PS Tributary Area     | C-2             | General Commercial                               |
|  | City Boundary                | C-1             | Service Commercial                               |
|  |                              | MSSP            | Main Street Specific Plan (Commercial)           |
|  |                              | O-E             | Oil Extraction                                   |
|  |                              | PLU             | Public Use                                       |
|  |                              | OS              | Open Space                                       |
|  |                              | SPR             | Specific Plan Regulatory Zone (currently vacant) |



**AKM**  
 PROJECT NO: 0801223.00  
 DATE: February 2018

CITY OF SEAL BEACH  
 SEWER SYSTEM MANAGEMENT PLAN  
**8th Street Pump Station  
 Tributary Area**  
 Figure D5-1

epoxy/polyurethane system. The main chamber of the wet well where the pumps are is 6 feet wide, 5.33 feet long and 15.23 feet deep. The auxiliary chamber is 7.33 feet wide, 6.67 feet long, and 9.2 feet to 12.7 feet deep. The two chambers are connected with a 12-inch diameter PVC sleeve through the common wall.

The bottom elevation of the primary wet well structure is -1.53 feet amsl. Access to the primary wet well is through a 4'-5" x 5', aluminum double door, spring-assisted hatch at ground level (13.7 feet amsl). The pump station is equipped with level sensors and back up float switches. Per discussion with the City maintenance staff in July 2016, the lead pump starts when the level rises to 4.5 feet (3.0 feet amsl) above the wet well floor, and turns off when the level drops to about 2.5 feet (1.0 feet amsl) above the wet well floor. The lag pump turns on when the level rises to 5 feet (-3.5 ft amsl) above the bottom of the wet well and turns off when the level falls to 2.5 feet (1.0 ft amsl).

It is recommended that the City install Smart Manhole covers at MH F15-370 (approximately 1,000 feet east of the station in the alley south of Ocean Avenue) to provide an additional backup alarm to inform maintenance staff of a possible pump station failure. The 8<sup>th</sup> Street Pump Station tributary area and the locations of the recommended Smart MH covers are detailed on Figure D5-2.

### Electrical

The 8th Street Pump Station is powered by a 200-amp, 3-phase, 4-wire service. A natural gas powered, 100-kW generator is located just north of the valve vault.

### Forcemain

The 8th Street Pump Station feeds two parallel 6-inch diameter forcemains. One forcemain is PVC and was constructed in 2013 with the upgraded pump station. The other is cast-iron pipe and dates to the early 1900s. The new forcemain extends from the east side of the wet well, northeast to MH F05-314 at 8<sup>th</sup> Street, north of Ocean Avenue. The older forcemain extends from the wet well, northeast to MH F15-320. The forcemains discharge to an 8" sewer which extend north east to Pump Station 35. Based on the existing average pump capacity of 290 gpm, the velocity in the 6-inch forcemain is approximately 3.3 feet per second (fps), which is in the recommended velocity range of 3 to 5 fps.

### D5-2 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If a spill occurs during a wet weather event, and it enters the storm drain system, no drainage facilities will be entered or blocked with sandbags or plugs in attempt to contain the spill, as such action could potentially cause flooding. Additionally, City personnel should not enter the storm drain system if unsafe conditions are observed.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system. Since the maintenance staff will not be addressing the containment and clean-up activities, any sewage that has overflowed from the sewer system will be considered part of the unrecovered overflow volume. To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall record the length of time the sewer system is overflowing. If possible, he/she will take photographs of the sewer overflow.

The following procedures generally deal with dry weather conditions. Procedures for wet weather spill response will be similar, except the storm drain system will not be entered to intercept and remove the sewage that has already entered the storm drain system and flow will not be blocked from entering the storm drains.

### D5-3 Preliminary Assessment Procedures

The 8<sup>th</sup> Street Pump Station is equipped with SCADA capabilities for remote monitoring. The pump station is also on a dialer system, which notifies the Seal Beach Police Department in the event of an alarm. Police Dispatch then notifies the Responsible Staff to oversee the overflow response.

The following are alarms are monitored at the 8<sup>th</sup> Street Pump Station:

- High Wet Well Level
- Pump Failure



- Power Failures
- Motor High Temperature
- Valve Vault Flooded
- Grease Interceptor High Level
- Site Intrusion
- Pump Seal Failure
- Generator Failure

Once an alarm has been identified, the maintenance staff will respond to the alarm within 1 hour of the initial notification.

Upon arrival the responding maintenance staff will assess and determine the course of action. The maintenance staff shall evaluate the pump station and spill site and request additional staff and/or equipment under the following circumstances:

- An overflow has entered the waters of the State, requiring at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- Without additional staff, an overflow has the potential of entering waters of the State, which would require at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- The maintenance staff determines if additional expertise and/or work power is required to correct a failed pump, to contain an overflow, or to clean up the site

He/she shall complete the Sanitary Sewer Overflow (SSO) Spill Report (Appendix B), which should include the following, at a minimum.

- Call time, or the time that the City became aware of the spill
- Location of the spill (manhole, clean out, interceptor, etc.)
- The cause of the SCADA alarm and potential overflow (clogged pump, broken pump, broken forcemain, etc.)
- Name and contact number of person reporting the SSO Spill Report
- Name(s) of responding City staff
- Actions taken by responding City staff
- Time, location, and volume details of spill and cleanup, including:
  - Spill Volume
  - Recovered Spill Volume
  - Wash Water Volume
  - Recovered Wash Water Volume
  - Spill Start and End Time
  - Final Destination of Overflow
- Whether additional agencies need to be contacted. See Table 4-4 for the detailed list of agencies and their contact information. Potential agencies include but are not limited to:
  - Orange County Health Care Agency (OCHCA)
  - Office of Emergency Services (OES)
  - Orange County Public Works (OCPW)
  - On-call Contractors
  - Orange County Fire Department (Hazardous Materials)
  - Seal Beach Police Department (Traffic Control)
  - Southern California Edison (if alarm/failure is due to a power outage)
- Whether public and/or private property has been damaged
- RWQCB Spill Category
- Location of prior overflows within 1,000 feet of overflow





- Amount of precipitation 72-hour prior to overflow
- Notification times and person(s) contacted at OCHCA, OES, and OCPW

He/she will notify the Responsible Staff of his/her findings at the earliest opportunity.

#### **D5-4 Response Time**

##### **Emergency Storage Fill Time**

The maintenance staff will strive to respond to a notification of an alarm before sewage has overflowed from a sewer facility. According to the City's topographic maps, hydraulic model, and GIS shapefiles, the upstream sewers to the 8<sup>th</sup> Street Pump Station are deep and will provide significant storage in the event of a pump station failure. In the event of a such failure, the wastewater will back up into significant portions of the upstream gravity sewers and manholes, which will act as part of the pump station's emergency storage.

Based on the upstream system estimated emergency storage volume and the tributary PDWF, the City will have approximately 6 hours to respond to the pump station before an overflow would occur. The cited minimum response time was calculated by dividing the total available system storage volume (calculated as the volume of influent sewer pipe network and associated manholes below the estimated rim elevation at the expected spill manhole, plus the storage volume available in the wet well between the high-level alarm elevation and the spill elevation) by the PDWF.

The maintenance staff will respond to a notification of a pump station alarm within one (1) hour, regardless of the emergency storage available at this pump station.

If the maintenance staff anticipate an overflow will occur before they arrive to the site, the staff will be prepared to try to contain and capture the sewage on the local street.

#### **D5-5 Containment Procedures**

In the event of a pump station failure, there is a minimum of 6 hours of emergency storage available. The storm drain manholes and catch basins requiring protection in the event of an overflow are prioritized on Figure D4-2.

##### **Overflow Sewer Manhole**

The ground surface elevation at the 8<sup>th</sup> Street Pump Station wet well is 13.7 feet. The City's topographic maps show that there is a local sump at 11<sup>th</sup> Street and the alley south of Ocean Avenue. As illustrated on Figure D5-2, MH F15-370 is anticipated to overflow in the event of a failure at the 8<sup>th</sup> Street Pump Station. According to the City's topographic map, the rim elevation at MH F15-370 is 11.0 feet. The maintenance staff will contain the overflow as close to the overflow manhole as possible by using sand bags, waddles, plastic sheets, rubber mats, earth berms, and other obstructing material.

##### **Street and Private Property Containment**

The maintenance staff shall keep the overflow area clear from the public by setting up barriers around the overflow. The area impacted by the overflow and potential subsequent work area will be secured with the use of signs, cones, delineators, barricades, arrowboards, and tape, as appropriate to divert traffic and to protect the public health and safety.

##### **Beach Containment**

MH F15-370 is located in a residential alley approximately 250 feet from the beach and roughly 600 feet from the Pacific Ocean. As detailed on Figure 5-2, there are no storm drains or catch basins in this area, and an overflow would extend to the beach and waters of the State. There are no curbs in the alley to help contain an overflow.

In the event of a spill at MH F15-370 and/or any manholes, the maintenance staff will contain the sewage on the street and prevent it from flowing onto the beach. If the spill has reached the beach and it is dry, the spill should be contained as close as possible to the entry point to the beach.

Upon arrival at the site, the maintenance staff will determine if the overflow can be contained in the alley as the sewer pump failure is being addressed. If necessary he/she will contact additional crews to request work power and equipment to handle both tasks simultaneously. The maintenance staff will block raw sewage from entering

the beach, if possible, using sandbags, dirt berms, waddles, rubber mats, plastic sheeting or other obstructing material.

Maintenance staff shall start the removal of the wastewater with the City's combination truck. Additional Vector and/or combination trucks from outside sources and/or neighboring agencies may be requested as necessary. The contact information is included in Table 4-3 and Table 4-4 of this report. If an overflow reaches the beach or surface water of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**, respectively

### Notification

The responding maintenance staff will follow the notification procedures laid out in Chapter 4 for a Category 1 spill if the overflow has reached the beach or waters of the State. In general, CalOES, OCHCA, and OCPW must be notified. The City approved laboratory and environmental consultant will be contacted, as necessary.

## D5-6 Pump Station and Forcemain Correctional Procedures

### Failed Pump

In the event of one pump failure, the maintenance staff will manually switch the pump station to operate with the second (operable) pump, if the SCADA system has not automatically done so. The City has a standby pump and motor for the 8<sup>th</sup> Street Pump Station at the City Public Works Maintenance Yard.

If one pump at the station can be operated, the maintenance staff will address the pump failure.

- If there is an obstruction in the pump that can be removed easily, the maintenance staff will clear the pump obstruction and place the pump back in service.
- If the failure is due to a closed check valve or isolation valve, the maintenance staff will fix the check valve setting and/or open the closed isolation valve.

If the failure is due to severe ragging or a broken pump, the maintenance staff will request an additional crew, if necessary, to transport the standby pump from the City public works yard. The standby pump will be placed into service, as the ragging is cleared. The maintenance staff will determine if the pump can be salvaged. If not, a new pump will be ordered to replace the broken pump.

If the failure is due to a broken check valve or isolation valve, the maintenance staff will replace the broken valve. The maintenance staff will determine if the valve can be salvaged. If not, a new valve will be ordered to replace the broken valve.

### Failed Electrical Facilities

If the failure is due to a Southern California Edison (SCE) power outage, the responding maintenance staff will contact Southern California Edison to expedite repairs. The pump station is equipped with a 100-kW onsite natural gas generator with an automatic transfer switch. However, if upon arrival to the pump station the maintenance staff finds that the automatic transfer switch has failed to connect to the generator, he/she will set the generator as the main power source.

If the overflow is due to an electrical failure at the pump station, a City electrician or a contract electrician will be contacted. In the event that there is a failure at one motor, the maintenance staff will request an additional crew, if necessary, to transport the standby pump and motor from the City Public Works Maintenance Yard. He/she will place the backup pump and motor into operation. The maintenance staff will determine if the motor can be salvaged. If not, a new motor will be ordered.

### Failed Forcemain

When there is a failure at either of the parallel 6-inch forcemains, the flow will be routed to the operable forcemain.

If the overflow is due to a failure of both 6-inch forcemain, rendering them both unusable, by-pass pumping may be set up. The City may also use its combination trucks to remove the wastewater from the wet well. Additional Vector and/or combination trucks from outside sources and/or neighboring agencies may be requested, as necessary. The contact information is included in Table 4-3 and Table 4-4.



Collected wastewater will be hauled to the Orange County Sanitation District's (OCSD) Treatment Plant No. 2, located in the City of Huntington Beach.

### By-pass Pumping

The maintenance staff may need to utilize by-pass pumping under any of the following circumstances:

- Rising sewage levels in the wet well, greater than the pump start setting
- Failure of both pumps and/or motors leave the pump station inoperable
- No power is available from either SCE or the emergency generator
- Failure of both 6-inch forcemains

When one of the 6-inch forcemains is operable but both pumps are not, the City will contact a private contractor to set up by-pass pumping. The suction end of the by-pass pump will be placed into the bottom of the wet well and a temporary discharge hose will be connected to the by-pass port on the operable forcemain.

If both 6-inch forcemains are not usable, by-pass pumps will be used and temporary hose will be set up on the street to the gravity manholes MH F15-320. When it is necessary, this form of by-pass pumping may interfere with residents' access to their homes. Maintenance staff shall inform neighbors of the inconvenience and request that they park their vehicles on the streets while by-pass pumping continues. All by-pass hoses will be secured with signs, cones, delineators, arrowboards, and tape, as appropriate.

If both 6-inch forcemains are not usable, combination and/or Vactor trucks will be utilized to remove the wastewater. Residents may be notified to halt water use to minimize sewage generation.

### D5-7 Traffic Control and Crowd Control

As stated in Section 4-14, if an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

All traffic control will comply with the Work Area Traffic Control Handbook (WATCH) standards.

### D5-8 Clean-up Procedures

#### Public Right of Way

Once the overflow has been corrected and contained, the maintenance staff will clean up all sewage. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system.

Any solids and semisolids remaining will be swept, raked, picked-up and transported for disposal at the OCSD Treatment Plant No. 2, located in the City of Huntington Beach.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

The site shall be disinfected and deodorized.

#### Beach and Waters of the State

There are no storm drain catch basins located in the vicinity of the influent station manhole.

If an overflow reaches the beach or waters of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultant **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates, Inc. ((562) 802-7880)**, respectively.

Portable aerators may be required where complete recovery of sewage is not possible. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultant.

#### Private Property

If there is damage to private property due to an overflow from a City pump station or forcemain, the maintenance staff will perform the initial clean-up operations, consisting of the following:

- Initial cleaning, including wiping and cleaning furniture

- Collect solid waste material
- Remove standing fluid from both indoor and outdoor areas
- Take photographs and video footage of the damaged and undamaged areas
- Inform the property owner of their right to hire a professional sewer clean-up service, which will be reimbursed by the City.
- Make arrangements to place the residents in a nearby hotel, as necessary

#### **D5-9 Overflow Volume Calculation**

Overflow volume shall be calculated by the methodology developed by the Orange County Area Waste Discharge Requirements Steering Committee. The rate of the overflow is estimated by the characteristics of the overflow at the manhole, as depicted in Appendix C. The start and stop times will also be estimated from the Sanitary Sewer Overflow Reports. The calculated overflow volume will be the product of the estimated rate of the overflow and the estimated duration of the overflow. If the estimated rate or duration of the overflow could not be determined, the overflow can be estimated by evaluating the containment areas of the overflow.

As feasible, the maintenance staff will take photographs and video footage of the overflow manhole and containment area throughout the overflow period at different times throughout the overflow event as the overflow flowrate and volume change with time.

#### **D5-10 Reporting**

As detailed in Section 8 of this report, once the cause of the overflow has been corrected and the overflow area has been cleaned, the maintenance staff will compile all pictures, video footage, the sewer overflow spill report (Appendix B), and any other notes. The City will report the spill to the State Water Resources Control Board, via the California Integrated Water Quality System online database.

#### **D5-11 Sampling Requirements**

If the overflow has reached the waters of the State, the Responsible Staff will contact the City-approved laboratory, **Truesdail Laboratories ((714) 734-6239)**, to conduct sampling and analysis, as required. Truesdail Laboratories will take samples of the receiving waters, as necessary.

The environmental consultant, **John L. Hunter & Associates ((562) 802-7880)**, will also be contacted. The environmental consultant will be provided all reports, notes, pictures, video footage, and any information regarding the overflow. He/she will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultant will also evaluate what City actions have and need to be taken to meet the health requirements.

As detailed in Section 8-1, a detailed Sanitary Sewer Overflow Technical Report will be required by the State Water Resources Control Board (SWRCB) for any overflow greater than 50,000 gallons that reach the waters of the State. Truesdail Laboratory will need to be contacted to perform all water quality samples and to perform all environmental analyses, as required by the State Water Resources Control Board (SWRCB). The sampling will include the following, at minimum:

- Dissolved oxygen
- Total ammonia
- Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan Water Quality Objective or as directed by the SWRCB
- pH
- Electrical Conductivity
- Temperature
- Biochemical Oxygen Demand (BOD or CBOD)

## **D5-12 Training**

Maintenance staff will be trained on the emergency response procedures for a sewer overflow at the 8<sup>th</sup> Street Pump Station. Training will be conducted annually. At minimum, the following site specific tasks will be addressed during the training session:

- Identification of the Overflow Sewer Manhole (MH F15-370)
- Identification of the capture points, where the maintenance staff will need to divert sewer overflows from the waters of the State
- Instruction of how to set up by-pass pumping

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**APPENDIX D-6**  
**ADOLFO LOPEZ PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**APPENDIX D-6**

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**1<sup>st</sup> STREET PUMP STATION AND FORCEMAIN OVERFLOW PROCEDURES**

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**D6-1 General**

The 1<sup>st</sup> Street Pump Station is a small submersible facility located adjacent to a beach parking lot at the end of 1<sup>st</sup> Street. Flow to the station is currently limited to domestic sewage generated at the restaurant and the City's maintenance shop located adjacent to the San Gabriel River.

The pump station was originally constructed in 1968. It consists of a 5-foot diameter manhole (recently lined) which serves as the wet well. Pumps, piping and valves are all located in the wet well. The original pumps and control panel were replaced in the mid 1980's and again in 2007.

The 1<sup>st</sup> Street Pump Station currently serves 11.6 acres of open space, public land, and light commercial area land use. A breakdown of the land uses in the tributary area is shown in Table D6-1. The tributary area is shown in Figure D6-1.

**Table D6-1  
1st Pump Station Tributary Land Uses**

<b>Land Use</b>	<b>Area (ac)</b>
Open Space	9.2
Light Commercial	0.7
Public Lands	1.7
<b>TOTAL</b>	<b>11.6</b>

**Tributary Flows**

The model was updated during the development of the 2018 Sewer Master Plan Update. The modeled tributary average dry weather flow (ADWF) is approximately 0.9 gpm, as estimated from weekly meter reads on the discharge piping of the pump station, during the 2014-2015 period. The existing model peak dry weather flow (PDWF) and peak wet weather flows are 3 gpm and 4 gpm, respectively.

**Pumps**

The 1<sup>st</sup> Street Pump Station utilizes two (2) WEMCO vortex submersible grinder pumps (Model 4x9 ESR). The pumps are driven by 3 HP drive motors. Per the certified pump testing curves, the pumps deliver 120 gpm at a total dynamic head of 19 feet when operating at 1170 rpm. At a capacity of 120 gpm each, the pumps have the capacity to pump the ultimate ADWF of 6 gpm, the PDWF of 16 gpm, and the peak wet-weather flow (PWWF) of 20 gpm.

**Wet Well**

The wet well is a pre-cast concrete, lined circular manhole structure with a diameter of 5-feet and height 6'1". The bottom elevation of the structure is 3.1 feet amsl. Access to the wet well is through a 5' x 3'-3", aluminum double door, spring-assisted hatch at ground level (9.2 feet amsl). The pump station is equipped with level sensors and back up float switches. Per discussion with the City maintenance staff in July 2016, the lead pump starts when the level rises to 4.5 feet (7.6 feet amsl) above the wet well floor, and turns off when the level drops to about 3.5 feet (6.6 feet amsl) above the wet well floor. The lag pump turns on when the level rises to 5 feet (8.1 ft amsl) above the bottom of the wet well and turns off when the level falls to 3.5 feet (6.6 ft amsl).

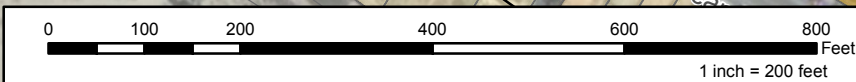




**Legend**

- ▲ Sewer Pump Station
- Manhole
- Gravity Sewers
- - - - - Forcemain
- ▬ 1st St PS Tributary Area
- ▬ City Boundary

**Land Use**

- RLD Residential Low Density
- RHD Residential High Density
- L-C Light Commercial
- C-1 Service Commercial
- O-E Oil Extraction
- PLU Public Use
- OS Open Space
- SPR Specific Plan Regulatory Zone (currently vacant)



		<b>CITY OF SEAL BEACH</b> <b>SEWER SYSTEM MANAGEMENT PLAN</b>
	PROJECT NO: 0801223.00	<b>1st Street Pump Station</b> <b>Tributary Area</b>
	DATE: February 2018	Figure D6-1



## Electrical

The 1<sup>st</sup> Street Pump Station is powered by a 100-amp, 3-phase, 4-wire service. The electrical equipment is protected by a 60 A circuit breaker. There is no emergency generator located at this station; however, the pump station is set up to connect to a portable 50 A generator.

## Forcemain

The 1<sup>st</sup> Street Pump Station forcemain is a 4-inch diameter PVC pipe that extends approximately 455 feet north east to MH F15-C328, located near 1<sup>st</sup> Street and the alley in the Gold Coast development. Based on the existing average pump capacity of 120 gpm, the velocity in the 4-inch forcemain is approximately 3.1 feet per second (fps), which is in the recommended velocity range of 3 to 5 fps.

## D6-2 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If a spill occurs during a wet weather event, and it enters the storm drain system, no drainage facilities will be entered or blocked with sandbags or plugs in attempt to contain the spill, as such action could potentially cause flooding. Additionally, City personnel should not enter the storm drain system if unsafe conditions are observed.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system. Since the maintenance staff will not be addressing the containment and clean-up activities, any sewage that has overflowed from the sewer system will be considered part of the unrecovered overflow volume. To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall record the length of time the sewer system is overflowing. If possible, he/she will take photographs of the sewer overflow.

The following procedures generally deal with dry weather conditions. Procedures for wet weather spill response will be similar, except the storm drain system will not be entered to intercept and remove the sewage that has already entered the storm drain system and flow will not be blocked from entering the storm drains.

## D6-3 Preliminary Assessment Procedures

The 1<sup>st</sup> Street Pump Station is equipped with SCADA capabilities for remote monitoring. The pump station is also on a dialer system, which notifies the Seal Beach Police Department in the event of an alarm. Police Dispatch then notifies the Responsible Staff to oversee the overflow response.

The following are alarms are monitored at the 1<sup>st</sup> Street Pump Station:

- High Wet Well Level
- Pump Failure
- Seal Failures
- Power Failures

Once an alarm has been identified, the maintenance staff will respond to the alarm within 1 hour of the initial notification.

Upon arrival, the responding maintenance staff will assess and determine the course of action. The maintenance staff shall evaluate the pump station and spill site and request additional staff and/or equipment under the following circumstances:

- An overflow has entered waters of the State, requiring at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- Without additional staff, an overflow has the potential of entering waters of the State, which would require at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- The maintenance staff determines if additional expertise and/or work power is required to correct a failed pump, to contain an overflow, or to clean up the site

He/she shall complete the Sanitary Sewer Overflow (SSO) Spill Report (Appendix A), which should include the following, at a minimum.

- Call time, or the time that the City became aware of the spill
- Location of the spill (manhole, clean out, interceptor, etc.)
- The cause of the SCADA alarm and potential overflow (clogged pump, broken pump, broken forcemain, etc.)
- Name and contact number of person reporting the SSO Spill Report
- Name(s) of responding City staff
- Actions taken of responding City staff
- Time, location, and volume details of spill and cleanup, including:
  - Spill Volume
  - Recovered Spill Volume
  - Wash Water Volume
  - Recovered Wash Water Volume
  - Spill Start and End Time
  - Final Destination of Overflow
- Whether additional agencies need to be contacted. See Table 4-4 for the detailed list of agencies and their contact information. Potential agencies include but are not limited to:
  - Orange County Health Care Agency (OCHCA)
  - Office of Emergency Services (OES)
  - Orange County Public Works (OCPW)
  - On-call Contractors
  - Orange County Fire Department (Hazardous Materials)
  - Seal Beach Police Department (Traffic Control)
  - Southern California Edison (if alarm/failure is due to a power outage)
- Whether public and/or private property has been damaged
- RWQCB Spill Category
- Location of prior overflows within 1,000 feet of overflow
- Amount of precipitation 72-hour prior to overflow
- Notification times and person(s) contacted at OCHCA, OES, and OCPW

He/she will notify the Responsible Staff of his/her findings at the earliest opportunity.

#### **D6-4 Response Time**

##### **Emergency Storage Fill Time**

The maintenance staff will strive to respond to a notification of an alarm before sewage has overflowed from a sewer facility. According to the 1<sup>st</sup> Street Pump Station as-built plans, the wet well has adequate storage in the event of a pump station failure.

Based on the upstream system estimated emergency storage volume and the tributary PDWF, the City will have a minimum of 2.5 hours to respond to the pump station before an overflow would occur. The cited minimum response time was calculated by dividing the storage volume within the wet well between the high-level alarm and the spill elevation by the PDWF. The accuracy of the City's GIS shapefiles for the 1<sup>st</sup> Street Pump Station tributary sewer system is not complete. There may be additional storage within the upstream sewers and manholes, which are currently not included in the GIS shapefile. It is recommended that in the event of an overflow, water services to the restroom facility, snack shop building, and City's maintenance building be shutoff, which ultimately stops the wastewater discharge to the 1<sup>st</sup> Street Pump Station.

The maintenance staff will respond to a notification of a pump station alarm within one (1) hour, regardless of the emergency storage available at this pump station.



If the maintenance staff anticipate an overflow will occur before they arrive to the site, the staff will be prepared to try to contain and capture the sewage on the local street and within the storm drain system.

#### **D6-5 Containment Procedures**

In the event of a pump station failure, there is a minimum of 2.5 hours of emergency storage. The high-priority areas to be contained in the event of an overflow are detailed on Figure D6-2.

##### **Overflow Sewer Manhole**

The ground surface elevation at the 1<sup>st</sup> Street Pump Station wet well is 7.7 feet.. The pad elevation of the wet well is approximately 9.2'. There is an upstream manhole located 6 feet to the northwest of the existing wet well, In the event of a failure at 1<sup>st</sup> Street Pump Station, it is anticipated that the wet well or this manhole will overflow. The maintenance staff will contain the overflow as close to the wet well and/or nearby manhole as possible by using sand bags, waddles, plastic sheets, rubber mats, earth berms, and other obstructing material.

##### **Street and Private Property Containment**

The maintenance staff shall keep the overflow area clear from the public by setting up barriers around the overflow. The area impacted by the overflow and potential subsequent work area will be secured with the use of signs, cones, delineators, barricades, arrowboards, and tape, as appropriate to divert traffic and to protect the public health and safety.

##### **Beach Containment**

There are no storm drain catch basins in the immediate vicinity of the 1<sup>st</sup> Street Pump Station.

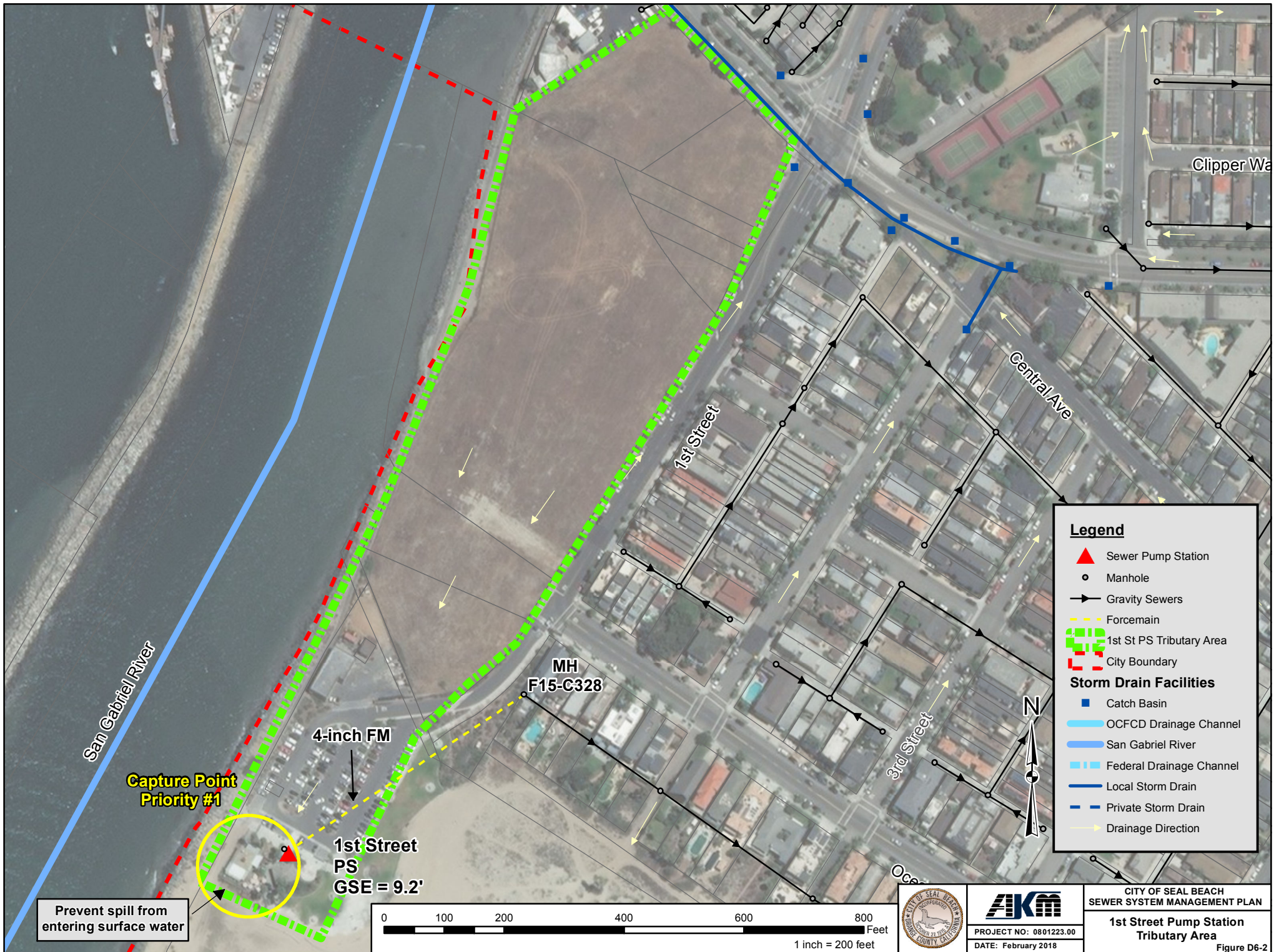
In the event of a spill at the 1<sup>st</sup> Street Pump Station, immediate action should be taken to prevent the spill from flowing onto the beach and ultimately the San Gabriel River and Pacific Ocean. If the spill has reached the beach and it is dry, the spill should be contained as close as possible to the entry point to the beach.

Upon arrival at the site, the maintenance staff will determine if the overflow can be contained as the sewer pump failure is being addressed. If necessary, he/she will contact additional crews to request work power and equipment to handle both tasks simultaneously. The maintenance staff will block raw sewage from flowing onto the beach, if possible, using sandbags, dirt berms, waddles, rubber mats, plastic sheeting or other obstructing material.

Maintenance staff shall start the removal of the wastewater with the City's combination truck. Additional Vector and/or combination trucks from outside sources and/or neighboring agencies may be requested as necessary. The contact information is included in Table 4-3 and Table 4-4 of this report. If an overflow reaches the storm drain and/or surface water in the harbor, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**, respectively.

##### **Notification**

The responding maintenance staff will follow the notification procedures laid out in Chapter 4 for a Category 1 spill if the overflow has reached the beach or any waters of the State. In general, CalOES, OCHCA, and OCPW must be notified.



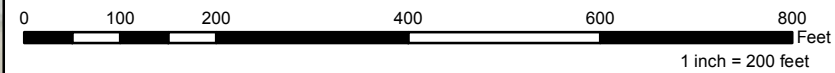
**Legend**

- ▲ Sewer Pump Station
- Manhole
- Gravity Sewers
- - - Forcemain
- ▭ 1st St PS Tributary Area
- - - City Boundary

**Storm Drain Facilities**

- Catch Basin
- ▬ OCFCD Drainage Channel
- ▬ San Gabriel River
- ▬ Federal Drainage Channel
- ▬ Local Storm Drain
- ▬ Private Storm Drain
- Drainage Direction

Prevent spill from entering surface water



**AKM**  
 PROJECT NO: 0801223.00  
 DATE: February 2018

CITY OF SEAL BEACH  
 SEWER SYSTEM MANAGEMENT PLAN  
**1st Street Pump Station Tributary Area**  
 Figure D6-2



## D6-6 Pump Station and Forcemain Correctional Procedures

### Failed Pump

In the event of one pump failure, the maintenance staff will manually switch the pump station to operate with the second (operable) pump, if the SCADA system has not automatically done so. The City has a standby pump and motor for the 1st Street Pump Station at the City Public Works Maintenance Yard.

If one pump at the station can be operated, the maintenance staff will address the pump failure.

- If there is an obstruction in the pump that can be removed easily, the maintenance staff will clear the pump obstruction and place the pump back in service.
- If the failure is due to a closed check valve or isolation valve, the maintenance staff will fix the check valve setting and/or open the closed isolation valve.

If the failure is due to severe ragging or a broken pump, the maintenance staff will request an additional crew, if necessary, to transport the standby pump from the City public works yard. The standby pump will be placed into service, as the ragging is cleared. The maintenance staff will determine if the pump can be salvaged. If not, a new pump will be ordered to replace the broken pump.

If the failure is due to a broken check valve or isolation valve, the maintenance staff will replace the broken valve. The maintenance staff will determine if the valve can be salvaged. If not, a new valve will be ordered to replace the broken valve.

### Failed Electrical Facilities

If the failure is due to a Southern California Edison (SCE) power outage, the responding maintenance staff will contact Southern California Edison to expedite repairs. The pump station is not equipped with an on-site generator. As such, the responding staff will arrive with the City's portable 50 A generator, which will be used to power the pump station.

If the overflow is due to an electrical failure at the pump station, a City electrician or a contract electrician will be contacted. In the event that there is a failure at one motor, the maintenance staff will request an additional crew, if necessary, to transport the standby pump and motor from the City Public Works Maintenance Yard. He/she will place the backup pump and motor into operation. The maintenance staff will determine if the motor can be salvaged. If not, a new motor will be ordered.

### Failed Forcemain

If an overflow is due to a failure of the 4-inch forcemain, by-pass pumping may be set up.

If the 4-inch forcemain is rendered unusable, the City's combination truck may be utilized to remove the wastewater.

Collected wastewater will be hauled to the Orange County Sanitation District's (OCSD) Treatment Plant No. 2, located in the City of Huntington Beach.

### By-pass Pumping

The maintenance staff may need to utilize by-pass pumping under any of the following circumstances:

- Rising sewage levels in the wet well, greater than the pump start setting
- Failure of both pumps and/or motors leave the pump station inoperable
- No power is available from either SCE or the emergency generator
- Failure of the 4-inch forcemain

When the 4-inch forcemain is not operable, the City may contact an on-call contractor to set up by-pass pumping. The suction end of the by-pass pump will be placed into the bottom of the wet well and a temporary discharge hose will connect to the by-pass port in the valve vault.

If the by-pass pumping is not viable, combination and/or Vactor trucks will be utilized to remove the wastewater.

### D6-7 Traffic Control and Crowd Control

As stated in Section 4-14, if an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The Seal Beach Police Department will be contacted when traffic and crowd control is necessary.

All traffic control will comply with the Work Area Traffic Control Handbook (WATCH) standards.

### D6-8 Clean-up Procedures

#### Public Right of Way

Once the overflow has been corrected and contained, the maintenance staff will clean up all sewage. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system.

Any solids and semisolids remaining will be swept, raked, picked-up and transported for disposal at the OCSD Treatment Plant No. 2, located in the City of Huntington Beach.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

The site shall be disinfected and deodorized.

#### Beach

There are no storm drain catch basins located in the vicinity of the influent station manhole.

If an overflow reaches the beach or surface water of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates, Inc. ((562) 802-7880)**, respectively.

Portable aerators may be required where complete recovery of sewage is not possible. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultant.

#### Private Property

If there is damage to private property due to an overflow from a City pump station or forcemain, the maintenance staff will perform the initial clean-up operations, consisting of the following:

- Initial cleaning, including wiping and cleaning furniture
- Collect solid waste material
- Remove standing fluid from both indoor and outdoor areas
- Take photographs and video footage of the damaged and undamaged areas
- Inform the property owner of their right to hire a professional sewer clean-up service, which will be reimbursed by the City.

### D6-9 Overflow Volume Calculation

Overflow volume shall be calculated by the methodology developed by the Orange County Area Waste Discharge Requirements Steering Committee. The rate of the overflow is estimated by the characteristics of the overflow at the manhole, as depicted in Appendix C. The start and stop times will also be estimated from the Sanitary Sewer Overflow Reports. The calculated overflow volume will be the product of the estimated rate of the overflow and the estimated duration of the overflow. If the estimated rate or duration of the overflow could not be determined, the overflow can be estimated by evaluating the containment areas of the overflow.

As feasible, the maintenance staff will take photographs and video footage of the overflow manhole and containment area throughout the overflow period at different times throughout the overflow event as the overflow flowrate and volume change with time.

### D6-10 Reporting

As detailed in Section 8 of this report, once the cause of the overflow has been corrected and the overflow area has been cleaned, the maintenance staff will compile all pictures, video footage, the sewer overflow spill report



(Appendix A), and any other notes. The City will report the spill to the State Water Resources Control Board, via the California Integrated Water Quality System online database.

#### **D6-11 Sampling Requirements**

If the overflow has reached the waters of the State, the Responsible Staff will contact the City-approved laboratory, **Truesdail Laboratories ((714) 734-6239)**, to conduct sampling and analysis, as required. Truesdail Laboratories will take samples of the receiving waters, as necessary.

The environmental consultant, **John L. Hunter & Associates ((562) 802-7880)**, will also be contacted. The environmental consultant will be provided all reports, notes, pictures, video footage, and any information regarding the overflow. He/she will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultant will also evaluate what City actions have and need to be taken to meet the health requirements.

As detailed in Section 8-2, a detailed Sanitary Sewer Overflow Technical Report will be required by the State Water Resources Control Board (SWRCB) for any overflow greater than 50,000 gallons that reach the waters of the State. Truesdail Laboratory will need to be contacted to perform all water quality samples and to perform all environmental analyses, as required by the State Water Resources Control Board (SWRCB). The sampling will include the following, at minimum:

- Dissolved oxygen
- Total ammonia
- Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan Water Quality Objective or as directed by the SWRCB
- pH
- Electrical Conductivity
- Temperature
- Biochemical Oxygen Demand (BOD or CBOD)

#### **D6-12 Training**

Maintenance staff will be trained on the emergency response procedures for a sewer overflow at the 1<sup>st</sup> Street Pump Station. Training will be conducted annually. At minimum, the following site specific tasks will be addressed during the training session:

- Identification of the capture points, where the maintenance staff will need to divert sewer overflows from waters of the State
- Instruction of how to set up by-pass pumping

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**APPENDIX D-7  
PUMP STATION NO. 35 AND FORCEMAIN OVERFLOW PROCEDURES**

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**APPENDIX D-7**

**PUMP STATION NO. 35 AND FORCEMAIN OVERFLOW PROCEDURES**

**D7-1 General**

Pump Station No. 35 is located in the southeast corner of the Old Town area at Electric Avenue and Seal Beach Boulevard. It is a large wet well/dry well station which receives all of the flows generated in the Old Town, Marina Hill, and Bridgeport communities, as well as the US Naval Weapons Station. Sewage is then pumped north to the 24-inch VCP Seal Beach Boulevard Trunk line, where it is conveyed to the OCSD system for treatment and disposal. The station was constructed in 1973 as part of a comprehensive program that eliminated the City's treatment facility. The project redirected flows from the southwest quadrant of the City, where the treatment plant was located, to the southeast quadrant of the City where the pump station was constructed via a new Electric Avenue Trunk Sewer. Pump Station No. 35 was renovated in two phases in 2005 and 2006. The ground elevation at the pump station site is approximately 7.1 feet amsl.

8<sup>th</sup> Street Pump Station, 1<sup>st</sup> Street Pump Station and the future Pier Pump Station are tributary to the Pump Station No. 35. The tributary area consists of approximately 833.2 acres of low, medium, and high density residential neighborhoods, commercial areas, open space, as well as public lands (US Naval Weapons Station). Tributary area land uses are summarized in Table D7-1 and shown in Figure D7-1.

**Table D7-1  
Pump Station No. 35 Tributary Land Uses**

<b>Land Use</b>	<b>Pump Station No. 35 Gravity Tributary Area (ac)</b>	<b>8th Street PS Gravity Tributary Area (ac)</b>	<b>1st Street PS Tributary Area (ac)</b>	<b>Total Tributary Area (ac)</b>
Service Commercial	8.1			8.1
General Commercial	12.5			12.5
Light Commercial	3.4		0.7	4.0
Main Street Specific Plan (Commercial)	10.6	2.8		13.4
Oil Extraction	4.3			4.3
Public Lands	261.4		1.7	263.1
Low Density Residential	146.0	8.9		154.9
Medium Density Residential	17.2			17.2
High Density Residential	105.6	6.0		111.6
Specific Plan Regulatory Zone (currently vacant)	0.6			0.6
Open Space	42.0		9.2	51.2
Public Right-of-Way	190.3	1.9		192.2
<b>TOTAL</b>	<b>802.0</b>	<b>19.5</b>	<b>11.6</b>	<b>833.2</b>

Pump Station No. 35 is adjacent to the Orange County Public Works (OCPW) Seal Beach Stormwater Pump Station, which is located to the northeast. In the event of a failure at the City's sewer Pump Station No. 35, the maintenance staff will try to prevent a sewer overflow from reaching the Seal Beach Stormwater Pump Station. In the event of an overflow that reaches the stormwater pump station, the maintenance staff will follow the response procedures included in Section 7 of this report.

**Tributary Flows**

The model was updated during the development of the 2018 Sewer Master Plan Update. The modeled tributary average dry weather flow (ADWF) is approximately 448 gpm, as estimated from weekly meter reads on the discharge piping of the pump station, during the 2014-2015 period. Approximately 48 gpm of the average dry-weather flow comes from the US Naval Weapons Station. The modeled peak dry weather flow (PDWF) and peak wet weather flows are 829 gpm and 1,119 gpm, respectively.





**Legend**

- ▲ Sewer Pump Station
- Manhole
- Forcemain
- Gravity Sewers

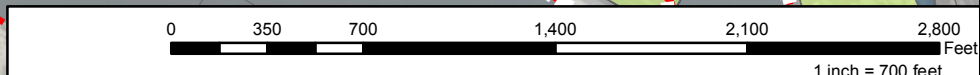
**Collection System Sewersheds**

**Name**

- 8th Street PS Tributary Area
- 1st St PS Tributary Area
- Pump Station No. 35 Tributary Area
- City Boundary

**Land Use**


- RLD Residential Low Density
- RMD Residential Medium Density
- RHD Residential High Density
- L-C Light Commercial
- C-2 General Commercial
- C-1 Service Commercial
- MSSP Main Street Specific Plan (Commercial)
- M-1 Light Manufacturing
- O-E Oil Extraction
- PLU Public Use
- OS Open Space
- SPR Specific Plan Regulatory Zone (currently vacant)




**CITY OF SEAL BEACH**  
SEWER SYSTEM MANAGEMENT PLAN

**Pump Station 35**  
Tributary Area

Figure D7-1



PROJECT NO: 0801223.00  
DATE: February 2018





## Pumps

Pump Station No. 35 utilizes three (3) WEMCO vertical, dry pit, open shaft pumps (Hidrostral Model H8K-H) operated by 100 HP variable frequency drive (VFD) motors. The pumps are rated at 1,500 gpm with total dynamic head of 97 feet and speed of 1200 rpm. The pumps have the capacity to pump the ADWF of 448 gpm, the PDWF of 829 gpm, and the PWWF of 1,119 gpm.

## Wet Well/Dry Well

The wet well at Pump Station No. 35 is reinforced concrete, epoxy urethane lined rectangular structure 19' long, 4' wide, and 20' high. The bottom elevation of the wet well structure is approximately -13.0 feet amsl. Access to the wet well is through a manhole cover inside the pump station building.

The station's dry well is a 19' x 20' x 21' deep structure which houses the pumps, valves, discharge piping, and ventilation equipment. The pumps are connected by long shafts to the motors and drives above. Access to the dry well is via stairway from the engine room directly above.

Pump Station No. 35 is equipped with level sensors and back up float switches. Per discussion with the City maintenance staff in July 2016, the lead pump turns on when the level rises to 6.0 feet (-7.0 feet amsl) above the wet well floor, and turns off when the level drops to about 4.0 feet (-9.0 feet amsl) above the wet well floor. The lag pump turns on when the level rises to 6.5 feet (-6.5 ft amsl) above the bottom of the wet well and turns off when the level falls to 4.0 feet (-9.0 ft amsl). The third pump, designated as the back-up pump, turns on when the wet well level rises to 7.0 feet (-6.0 feet amsl) above the wet well floor, and turns off when the level drops to 5.0 feet (-8.0 feet amsl) above the wet well floor.

## Electrical

Pump Station No. 35 is powered by a 400-amp, 3-phase, 4-wire service.

In addition to the three electrically driven pump motors, two of the pumps are also connected to natural gas powered engines which can drive the pumps in the event of a power outage or a motor failure.

## Forcemain

Pump Station No. 35 pumps into a 16-inch diameter ductile iron forcemain, which extends approximately 4,150 feet from the west side of the dry well to MH S01-120 at the intersection of Seal Beach Boulevard and Catalina Avenue. The forcemain empties into the 24" gravity sewer which extends north to the OCSD Seal Beach Pump Station. Based on the existing average pump capacity of 1500 gpm, the velocity in the 16-inch forcemain with two pumps on is approximately 4.8 feet per second (fps), which is in the recommended velocity range of 3 to 5 fps. With one pump on the velocity falls to 2.4 fps, slightly below the recommended range.

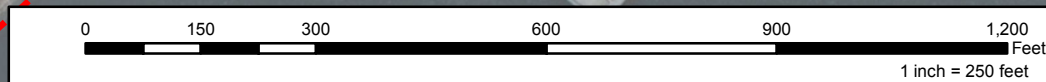
## D7-2 Wet Weather Flow Procedures

The function of a storm drain system is to prevent flooding, which provides safety to the public as well as protection of public and private property. If a spill occurs during a wet weather event, and it enters the storm drain system, no drainage facilities will be entered or blocked with sandbags or plugs in attempt to contain the spill, as such action could potentially cause flooding. Additionally, City staff should not enter the storm drain system if unsafe conditions are observed.

Under these circumstances, the maintenance staff will concentrate on correcting the cause of the sanitary sewer overflow to minimize the volume that is discharged to the waters of the State, and prevent additional discharge of sewage into the storm drain system. Since the maintenance staff will not be addressing the containment and clean-up activities, any sewage that has overflowed from the sewer system will be considered part of the unrecovered overflow volume. To collect the information necessary for completing the overflow report to the State Water Resources Control Board (SWRCB), the maintenance staff shall record the length of time the sewer system is overflowing. If possible, he/she will take photographs of the sewer overflow.

The following procedures generally deal with dry weather conditions. Procedures for wet weather spill response will be similar, except the storm drain system will not be entered to intercept and remove the sewage that has already entered the storm drain system and flow will not be blocked from entering the storm drains.





**AKM**  
 PROJECT NO: 0801223.00  
 DATE: February 2018

CITY OF SEAL BEACH  
 SEWER SYSTEM MANAGEMENT PLAN  
**Pump Station 35  
 Capture Points**  
 Figure X-X

**Legend**

▲ Sewer Pump Station	<b>Storm Drain Facilities</b>
○ Manhole	■ Catch Basin
● Potential Spill Manhole	▭ Pump Station No. 35 Tributary Area
→ Gravity Sewers	▬ OCFCD Drainage Channel
--- Forcemain	▬ San Gabriel River
- - - City Boundary	▬ Federal Drainage Channel
	▬ Local Storm Drain
	▬ Private Storm Drain
	→ Drainage Direction
	▲ Stormwater Pump Station



### D7-3 Preliminary Assessment Procedures

The Pump Station No. 35 is equipped with SCADA capabilities for remote monitoring. The pump station is also on a dialer system, which notifies the Seal Beach Police Department in the event of an alarm. Police Dispatch then notifies the Responsible Staff to oversee the overflow response.

The following are alarms are monitored at Pump Station No. 35:

- High Wet Well Level
- Pump Failure
- Power Failures
- Site Intrusion
- Controller Failure

Once an alarm has been identified, the maintenance staff will respond to the alarm within 1 hour of the initial notification.

Upon arrival the responding maintenance staff will assess and determine the course of action. The maintenance staff shall evaluate the pump station and spill site and request additional staff and/or equipment under the following circumstances:

- An overflow has entered the storm drain system, requiring at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- Without additional staff, an overflow has the potential of entering the storm drain system, which would require at least two crews to simultaneously address the pump station failure and to contain the sanitary sewer overflow.
- The maintenance staff determines if additional expertise and/or work power is required to correct a failed pump, to contain an overflow, or to clean up the site

He/she shall complete the Sanitary Sewer Overflow (SSO) Spill Report (Appendix A), which should include the following, at a minimum.

- Call time, or the time that the City became aware of the spill
- Location of the spill (manhole, clean out, interceptor, etc.)
- The cause of the SCADA alarm and potential overflow (clogged pump, broken pump, broken forcemain, etc.)
- Whether the spillage entered a storm drain and, if so, if it was contained there
- Name and contact number of person reporting the SSO Spill Report
- Name(s) of responding City staff
- Actions taken of responding City staff
- Time, location, and volume details of spill and cleanup, including:
  - Spill Volume
  - Recovered Spill Volume
  - Wash Water Volume
  - Recovered Wash Water Volume
  - Spill Start and End Time
  - Final Destination of Overflow
- Whether additional agencies need to be contacted. See Table 4-4 for the detailed list of agencies and their contact information. Potential agencies include but are not limited to:
  - Orange County Health Care Agency (OCHCA)
  - Office of Emergency Services (OES)
  - Orange County Public Works (OCPW)
  - On-call Contractors
  - Orange County Fire Department (Hazardous Materials)

- Seal Beach Police Department (Traffic Control)
- Southern California Edison (if alarm/failure is due to a power outage)
- Whether public and/or private property has been damaged
- RWQCB Spill Category
- Location of prior overflows within 1,000 feet of overflow
- Amount of precipitation 72-hour prior to overflow
- Notification times and person(s) contacted at OCHCA, OES, and OCPW

He/she will notify the Responsible Staff of his/her findings at the earliest opportunity.

#### **D7-4 Response Time**

##### **Emergency Storage Fill Time**

The maintenance staff will strive to respond to a notification of an alarm before sewage has overflowed from a sewer facility. According to the City's topographic maps, hydraulic model, and GIS shapefiles, the upstream sewers to Pump Station No. 35 are deep and will provide significant storage in the event of a pump station failure. In the event of a such failure, the wastewater will back up into significant portions of the upstream gravity sewers and manholes, which will act as part of the pump station's emergency storage.

Based on the upstream system estimated emergency storage volume and the tributary PDWF, the City will have approximately 10 hours to respond to the pump station before an overflow would occur. The cited minimum response time was calculated by dividing the total available system storage volume (calculated as the volume of influent sewer pipe network and associated manholes below the estimated rim elevation at the expected spill manhole, plus the storage volume available in the wet well between the high-level alarm elevation and the spill elevation) by the PDWF.

The maintenance staff will respond to a notification of a pump station alarm within one (1) hour, regardless of the emergency storage available at this pump station.

If the maintenance staff anticipate an overflow will occur before they arrive to the site, the staff will be prepared to try to contain and capture the sewage on the local street and within the storm drain system.

#### **D7-5 Containment Procedures**

In the event of a pump station failure, there is a minimum of 10 hours of emergency storage. The anticipated areas of concern that require actions for containment are prioritized on Figure D4-2.

##### **Overflow Sewer Manhole**

The ground elevations along Electric Avenue and Seal Beach Avenue are low in the southeast portion of the Old Town area. The potential overflow sewer manholes are illustrated on Figure D7-2, and they are prioritized based on the rim elevations included on the City's topographic maps. The overflow sewer manhole with the lowest rim elevation (5.7') is MH F24-410 located on Seal Beach Boulevard and the alley north of Electric Avenue. Other potential overflow sewer manholes included MH F23-403A, MH F18-006, and MH F11-348, which are detailed on Figure D7-2. The City's topographic maps general slope from west to east toward Pump Station 35 along Electric Avenue. The maintenance staff will contain the overflow as close to the overflow sewer manhole as possible by using sand bags, waddles, plastic sheets, rubber mats, earth berms, and other obstructing material.

It is recommended that the City install Smart manhole covers at each of the potential overflow manholes to provide additional backup alarms to inform maintenance staff of a possible pump station failure.

##### **Street and Private Property Containment**

The maintenance staff shall keep the overflow area clear from the public by setting up barriers around the overflow. The area impacted by the overflow and potential subsequent work area will be secured with the use of signs, cones, delineators, barricades, arrowboards, and tape, as appropriate to divert traffic and to protect the public health and safety.



### Storm Drain Containment

In any event, the maintenance staff will contain the sewage and prevent it from entering the OCPW Seal Beach Stormwater Pump Station wet well, which is located to the north east of sewer Pump Station No. 35. If the sewer overflow has reached the stormwater wet well, the City will contact OCPW to disable the pump station to prevent the sewer overflow from being pumped into the Pacific Ocean, whenever possible. Refer to Section 7 for detailed steps for sewer overflows that reach the OCPW Seal Beach Stormwater Pump Station.

The potential overflow sewer manholes are located along Electric Avenue or along the parallel alley to the north. Overflows from these manholes would generally extend towards Electric Avenue, where it extends southeast towards Seal Beach Boulevard. As detailed on Figure D7-2, capture points are identified at the storm water catch basins that lie directly in the path of a potential overflow. The capture points are prioritized by proximity to the overflow sewer manholes.

Upon arrival at the site, the maintenance staff will determine if the overflow can be contained in the streets and/or alleys as the sewer pump failure is being addressed. If necessary he/she will contact additional crews to request work power and equipment to handle both tasks simultaneously. The maintenance staff will block raw sewage from entering the storm drain, if possible, using sandbags, dirt berms, waddles, rubber mats, plastic sheeting or other obstructing material. The pick holes and vents of any manholes in the path of the spill will be plugged and the flow diverted from these structures, if possible. To contain the overflow within the storm drain, the maintenance staff will try to intercept the overflows in the downstream storm drains before it reaches the OCPW Seal Beach Stormwater Pump Station and/or waters of the State. He/she will place sand bags inside the storm drain manhole to block the sewage and use the City Vector truck to pump the sewage out of the storm drain.

Maintenance staff shall start the removal of the wastewater from the street with its combination truck. Additional Vector and/or combination trucks from outside sources and/or neighboring agencies may be requested as necessary. The contact information is included in Table 4-3 and Table 4-4 of this report. If an overflow reaches the surface water of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultants **Truesdail Laboratories ((714) 734-6239)** and **John L. Hunter & Associates ((562) 802-7880)**, respectively.

### Notification

The responding maintenance staff will notify OCPW if the overflow has reached the any OCPW storm drain systems.

In the event that the overflow reaches the wet well of the OCPW Seal Beach Stormwater Pump Station, the maintenance staff will contact the OCPW to disable the storm water pumps to contain the overflow to the wet well and prevent any sewage from reaching the waters of the State. The City will keep OCPW updated with the plan of action for containment and clean-up within the Seal Beach Stormwater Pump Station tributary area.

The responding maintenance staff will follow the notification procedures laid out in Chapter 4 for a Category 1 spill if the overflow has reached the beach or waters of the State. In general, CalOES, OCHCA, and OCPW must be notified. The City approved laboratory and environmental consultant will be contacted, as necessary.

## D7-6 Pump Station and Forcemain Correctional Procedures

### Failed Pump

In the event of one pump failure, the maintenance staff will manually switch the pump station to run with an available operable pumps, if the SCADA system has not automatically done so. The City has a standby pump and motor for Pump Station No. 35 at the City Public Works Maintenance Yard.

If one pump at the station can be operated, the maintenance staff will address the pump failure.

- If there is an obstruction in the pump that can be removed easily, the maintenance staff will clear the pump obstruction and place the pump back in service.
- If the failure is due to a closed check valve or isolation valve, the maintenance staff will fix the check valve setting and/or open the closed isolation valve.

If the failure is due to severe ragging or a broken pump, the maintenance staff will request an additional crew, if necessary, to transport the standby pump from the City public works yard. The standby pump will be placed

into service, as the ragging is cleared. The maintenance staff will determine if the pump can be salvaged. If not, a new pump will be ordered to replace the broken pump.

If the failure is due to a broken check valve or isolation valve, the maintenance staff will replace the broken valve. The maintenance staff will determine if the valve can be salvaged. If not, a new valve will be ordered to replace the broken valve.

### **Failed Electrical Facilities**

If the failure is due to a Southern California Edison (SCE) power outage, the responding maintenance staff will contact Southern California Edison to expedite repairs. Pump Station No. 35 has backup natural gas engines that would be used to operate the pumps in the event of an electrical failure. A 5-kW onsite natural gas generator with an automatic transfer switch would provide power to all control systems. However, if upon arrival to the pump station the maintenance staff finds that the automatic transfer switch has failed to connect to the generator, he/she will set the generator as the main power source.

If the overflow is due to an electrical failure at the pump station, a City electrician or a contract electrician will be contacted. In the event that there is a failure at one motor, the maintenance staff will request an additional crew, if necessary, to transport the standby pump and motor from the City Public Works Maintenance Yard. He/she will place the backup pump and motor into operation. The maintenance staff will determine if the motor can be salvaged. If not, a new motor will be ordered.

### **Failed Forcemain**

If the overflow is due to a failure of the 16-inch forcemain, rendering it unusable, by-pass pumping may be set up.

The City may also use its combination trucks to remove the wastewater from the wet well. Additional Vactor and/or combination trucks from outside sources and/or neighboring agencies may be requested, as necessary. The contact information is included in Table 4-3 and Table 4-4.

Collected wastewater will be hauled to the Orange County Sanitation District's (OCSD) Treatment Plant No. 2, located in the City of Huntington Beach.

### **By-pass Pumping**

The maintenance staff may need to utilize by-pass pumping under any of the following circumstances:

- Rising sewage levels in the wet well, greater than the pump start setting
- Failure of both pumps and/or motors leave the pump station inoperable
- No power is available from either SCE or the emergency generator
- Failure the 16-inch forcemain

When the 16-inch forcemain is operable but all pumps are not operable, the City may contact a private contractor to set up by-pass pumping. The suction end of the by-pass pump will be placed into the bottom of the wet well and a temporary discharge hose will be connected to the by-pass port on the forcemain.

If the 16-inch forcemain is not usable, by-pass pumps will be used and temporary hose will be set up on the street between the wet well and the gravity manhole MH S01-120, located on Seal Beach Boulevard and Catalina Avenue. When it is necessary, this form of by-pass pumping may interfere with residents' access to their homes. Maintenance staff shall inform neighbors of the inconvenience and request that they park their vehicles on the streets while by-pass pumping continues. All by-pass hoses will be secured with signs, cones, delineators, arrowboards, and tape, as appropriate.

If the 16-inch forcemain is not usable, combination and/or Vactor trucks may be utilized to remove the wastewater from the Pump Station No. 35 wet well. Residents may be notified to halt water use to minimize sewage generation.

### **D7-7 Traffic Control and Crowd Control**

As stated in Section 4-14, if an overflow extends to the public right of way, traffic control will be set up to direct the public and automobile traffic around the overflow location. The Seal Beach Police Department will be contacted when traffic and crowd control is necessary. All traffic control will comply with the Work Area Traffic Control Handbook (WATCH) standards.

## D7-8 Clean-up Procedures

### Public Right of Way

Once the overflow has been corrected and contained, the maintenance staff will clean up all sewage. Initially, all sewage will be vacuumed from the gutter, street, and storm drain system.

Any solids and semisolids remaining will be swept, raked, picked-up and transported for disposal at the OCSD Treatment Plant No. 2, located in the City of Huntington Beach.

The impacted area will then be washed down with potable water until all evidence of sewage is removed. All wash water will be vacuumed and disposed of at the OCSD Treatment Plant No. 2.

The site shall be disinfected and deodorized.

### Storm Drain System

As part of the containment procedure, the maintenance staff will plug the storm drain pipes to block the sewage from reaching waters of the State. He/she shall start the removal of wastewater with the City's combination truck.

Once the overflow volume within the storm drain system has been vacuumed out, the drainage system will be cleaned. The solids will be removed, and the storm drain pipe will be washed down. The wash water will be vacuumed from the storm drain and disposed of at the OCSD Treatment Plant No. 2.

Refer to Section 7 for detailed steps for overflows that have reached OCPW Seal Beach Stormwater Pump Station.

As discussed in Section 4-12, if an overflow reaches waters of the State, the Responsible Staff will contact the City-approved laboratory and environmental consultant.

**Portable aerators** may be required where complete recovery of sewage is not possible. Where severe oxygen depletion in the existing surface water is expected, the City will seek assistance from its environmental consultant.

### Private Property

If there is damage to private property due to an overflow from a City pump station or forcemain, the maintenance staff will perform the initial clean-up operations, consisting of the following:

- Initial cleaning, including wiping and cleaning furniture
- Collect solid waste material
- Remove standing fluid from both indoor and outdoor areas
- Take photographs and video footage of the damaged and undamaged areas
- Inform the property owner of their right to hire a professional sewer clean-up service, which will be reimbursed by the City.
- Make arrangements to place the residents in a nearby hotel, as necessary

## D7-9 Overflow Volume Calculation

Overflow volume shall be calculated by the methodology developed by the Orange County Area Waste Discharge Requirements Steering Committee. The rate of the overflow is estimated by the characteristics of the overflow at the manhole, as depicted in Appendix C. The start and stop times will also be estimated from the Sanitary Sewer Overflow Reports. The calculated overflow volume will be the product of the estimated rate of the overflow and the estimated duration of the overflow. If the estimated rate or duration of the overflow could not be determined, the overflow can be estimated by evaluating the containment areas of the overflow.

As feasible, the maintenance staff will take photographs and video footage of the overflow manhole and containment area throughout the overflow period at different times throughout the overflow event as the overflow flowrate and volume change with time.

### D7-10 Reporting

As detailed in Section 8 of this report, once the cause of the overflow has been corrected and the overflow area has been cleaned, the maintenance staff will compile all pictures, video footage, the sewer overflow spill report (Appendix A), and any other notes. The City will report the spill to the State Water Resources Control Board, via the California Integrated Water Quality System online database.

### D7-11 Sampling Requirements

If the overflow has reached the waters of the State, the Responsible Staff will contact the City-approved laboratory, **Truesdail Laboratories ((714) 734-6239)**, to conduct sampling and analysis, as required. Truesdail Laboratories will take samples of the receiving waters, as necessary.

The environmental consultant, **John L. Hunter & Associates ((562) 802-7880)**, will also be contacted. The environmental consultant will be provided all reports, notes, pictures, video footage, and any information regarding the overflow. He/she will assess the problem and determine the effects of the overflow on special-status species, sensitive habitat, and the natural environment. The environmental consultant will also evaluate what City actions have and need to be taken to meet the health requirements.

As detailed in Section 8-2, a detailed Sanitary Sewer Overflow Technical Report will be required by the State Water Resources Control Board (SWRCB) for any overflow greater than 50,000 gallons that reach the waters of the State. Truesdail Laboratory will need to be contacted to perform all water quality samples and to perform all environmental analyses, as required by the State Water Resources Control Board (SWRCB). The sampling will include the following, at minimum:

- Dissolved oxygen
- Total ammonia
- Bacterial indicator, such as total and fecal coliform enterococcus and e-coli, per the Basin Plan Water Quality Objective or as directed by the SWRCB
- pH
- Electrical Conductivity
- Temperature
- Biochemical Oxygen Demand (BOD or CBOD)

### D7-12 Training

Maintenance staff will be trained on the emergency response procedures for a sewer overflow at Pump Station No. 35. Training will be conducted annually. At minimum, the following site specific tasks will be addressed during the training session:

- Identification of the potential overflow sewer manholes
- Identification of the capture points, where the maintenance staff will need to divert sewer overflows from the nearby storm drain catch basins
- Instruction of how to set up by-pass pumping



## 6.2 SSO CATEGORY 1



[Menu](#) | [Help](#) | [Log out](#)

Navigate to:

You are logged-in as: SSO Demo. If this account does not belong to you, please log out.

**Spill - General Information** ?

[SSO Menu](#)

Spill Event ID: New      Regional Water Board: Region 5S - Sacramento  
 Spill Location Name: Test      Agency: State Water Resources Control Board  
 WDID: 5SSO10000      Sanitary Sewer System: Demo South CS

[General Info](#)   [Spill Related Parties](#)   [Attachments](#)

**Spill - General Information, Screen 2**

You have  minutes to save your report before your session expires.

Note: Questions with **\*\*** are required to be answered for 'Save Work in Progress'.

Questions with **\*** are required to be answered for 'Submit Draft'.

Questions with **\*\*\*** are required to be answered for 'Ready to Certify'.

Submit Draft On:

Last Updated By: [SSO Demo](#)

1 - Spill Type: Category 1

**\* 2 - Estimate Spill Volumes**

a) Estimated spill volume that reached a separate storm drain that flows to a surface water body?  gallons

b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)  gallons

c) Estimated spill volume that reached a drainage channel that flows to a surface water body?  gallons

d) Estimated spill volume recovered from a drainage channel that flows to a surface water body?  gallons

e) Estimated spill volume discharged directly to a surface water body?  gallons

f) Estimated spill volume recovered from surface water body?  gallons

g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location.)  gallons

h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up)  gallons

Estimated Total spill volume to Reach Surface Water (a-b+c+e)	Estimated Total spill volume to Reach Land (g)	Estimated Total spill volume Recovered (b+d+f+h)	Estimated Total spill volume (a+c+e+g)
<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>

\* 3 - Did the spill discharge to a drainage channel and/or surface water?

\* 4 - Did the spill reach a storm drainpipe that is not part of a combined sewer system?

\* 5 - If spill reached a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?

**Physical Location Details**

\* 6 - Spill location name:

\* 7 - Latitude of spill location:  deg.  min.  sec. OR  decimal degrees [\[ Map \]](#)

\* 8 - Longitude of spill location:  deg.  min.  sec. OR  decimal degrees [\[ Map \]](#)

\* 9 - County:

\* 10 - Regional Water Quality Control Board:

11 - Spill location description:   
 (Use attachment if location description is more than 2000 characters)

**Spill Details**

**\* 12 - Number Of appearance points:**

**\* 13 - Spill appearance point:**  
(Hold Ctrl key to Select Multiple answers from the list)

**\* 14 - Spill appearance point explanation:**  
(Required if spill appearance point is "Other" and/or multiple appearance points are selected)

**\*\* 15 - Final spill destination:**  
(Hold Ctrl key to Select Multiple answers from the list)

**16 - Explanation of final spill destination:**  
(Required if final spill destination is "Other")

**\* 17 - Estimated spill start date/time:**     :   Date Format: MM/DD/YYYY

**\* 18 - Date and time sanitary sewer system agency was notified of or discovered spill:**     :   Date Format: MM/DD/YYYY

**\* 19 - Estimated Operator arrival date/time:**     :   Date Format: MM/DD/YYYY

**\*\* 20 - Estimated spill end date/time:**     :   Date Format: MM/DD/YYYY

**\*\* 21 - Spill cause:**

**22 - Spill cause explanation:**  
(Required if spill Cause is "Other")

**\*\* 23 - Where did failure occur?**

**24 - Explanation of Where Failure Occurred:**  
(Required if Where Failure Occurred is "Other")

**\*\* 25 - Was this spill associated with a storm event?**

**26 - Diameter of sewer pipe at the point of blockage or failure:**  inches

**27 - Material of sewer pipe at the point of blockage or failure:**

**28 - Estimated age of sewer asset at the point of blockage or failure:**

**\*\* 29 - Spill response activities:**  
(Hold Ctrl key to Select Multiple answers from the list)

**30 - Explanation of spill response activities:**  
(Required if spill response activities is "Other", use attachment if the text is more than 1700 characters)

**\*\* 31 - Spill response completion date:**     :   Date Format: MM/DD/YYYY

**\*\* 32 - Spill corrective action taken:**  
(Hold Ctrl key to Select Multiple answers from the list)

**33 - Explanation of spill corrective action taken:**  
(Required if spill corrective action is "Other")

**\*\* 34a - Is there an ongoing investigation?**

**34b - Reason for ongoing investigation?**

**35 - Visual inspection results from impacted receiving water:**

**\*\* 36 - Health warnings posted?**

**\*\* 37 - Did the spill result in a beach closure (If YES, answer questions 38)?**

**\*\* 38 - Name of impacted beach(es) (enter NA if None):**

**39 - Name of impacted surface water(s) (enter Un-named Tributary to XXXXX where XXXXX is the name of first named downstream tributary if receiving surface water body is un-named):**

**\*\*40 - Water quality samples analyzed for:**  
(Hold Ctrl key to Select Multiple answers from the list)

**41 - Explanation of water quality samples analyzed for:**  
(Required if water quality samples analyzed for is "Other chemical indicator(s)", "Biological indicator(s)", or "Other")

**\*\*42 - Water quality sample results reported to:**  
(Hold Ctrl key to Select Multiple answers)

County Health Agency  
Regional Water Quality Control Board  
Other (specify below)

**43 - Explanation of water quality sample results reported to:**  
(Required if water quality sample results reported to is "Other")

**\*\* 44 - Explanation of volume estimation methods used:**  
(Describe how you developed spill volume estimates for this spill)

**Notification Details**

**45 - Cal OES Control Number**  
(Required for **Category 1** - see SSO Monitoring and Reporting Program Requirements):

**46 - Cal OES Called Date/Time**  
(Required for **Category 1** - see SSO Monitoring and Reporting Program Requirements):

: :  Date Format: MM/DD/YYYY

**\* 47(a) - Name and Tittle (Contact person who can answer specific questions about this SSO)**

**\* 47(b) - Contact Person Phone Number**

Save Work in Progress

Submit Draft

Ready to Certify



## 6.3 SSO CATEGORY 2



[Menu](#) | [Help](#) | [Log out](#)

Navigate to:

You are logged-in as: SSO Demo. If this account does not belong to you, please log out.

**Spill - General Information** ?

[SSO Menu](#)

Spill Event ID: New      Regional Water Board: Region 5S - Sacramento  
 Spill Location Name: Test      Agency: State Water Resources Control Board  
 WDID: 5SSO10000      Sanitary Sewer System: Demo South CS

[General Info](#)   [Spill Related Parties](#)   [Attachments](#)

**Spill - General Information, Screen 2**

Save Work in Progress   Submit Draft   Ready to Certify

You have  minutes to save your report before your session expires.

Note: Questions with **\*\*** are required to be answered for 'Save Work in Progress'.  
 Questions with **\*** are required to be answered for 'Submit Draft'.  
 Questions with **\*\*\*** are required to be answered for 'Ready to Certify'.

Submit Draft On:

Last Updated By: [SSO Demo](#)

1 - Spill Type: Category 2

**\* 2 - Estimate Spill Volumes**

- a) Estimated spill volume that reached a separate storm drain that flows to a surface water body?  gallons
- b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)  gallons
- c) Estimated spill volume that reached a drainage channel that flows to a surface water body?  gallons
- d) Estimated spill volume recovered from a drainage channel that flows to a surface water body?  gallons
- e) Estimated spill volume discharged directly to a surface water body?  gallons
- f) Estimated spill volume recovered from surface water body?  gallons
- g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location.)  gallons
- h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up)  gallons

Estimated Total spill volume to Reach Surface Water (a-b+c+e)	Estimated Total spill volume to Reach Land (g)	Estimated Total spill volume Recovered (b+d+f+h)	Estimated Total spill volume (a+c+e+g)
<input type="text" value="0"/>	<input type="text" value="1000"/>	<input type="text" value="0"/>	<input type="text" value="1000"/>

\* 3 - Did the spill discharge to a drainage channel and/or surface water?

\* 4 - Did the spill reach a storm drainpipe that is not part of a combined sewer system?

\* 5 - If spill reached a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?

**Physical Location Details**

\* 6 - Spill location name:

\* 7 - Latitude of spill location:  deg.  min.  sec. OR  decimal degrees [\[ Map \]](#)

\* 8 - Longitude of spill location:  deg.  min.  sec. OR  decimal degrees [\[ Map \]](#)

\* 9 - County:

\* 10 - Regional Water Quality Control Board:

11 - Spill location description:  
 (Use attachment if location description is more than 2000 characters)

**Spill Details**

\* 12 - Number Of appearance points:

\* 13 - Spill appearance point:  
(Hold Ctrl key to Select Multiple answers from the list)

\* 14 - Spill appearance point explanation:  
(Required if spill appearance point is "Other" and/or multiple appearance points are selected)

\*\* 15 - Final spill destination:  
(Hold Ctrl key to Select Multiple answers from the list)

16 - Explanation of final spill destination:  
(Required if final spill destination is "Other")

\* 17 - Estimated spill start date/time:     :   Date Format: MM/DD/YYYY

\* 18 - Date and time sanitary sewer system agency was notified of or discovered spill:     :   Date Format: MM/DD/YYYY

\* 19 - Estimated Operator arrival date/time:     :   Date Format: MM/DD/YYYY

\*\* 20 - Estimated spill end date/time:     :   Date Format: MM/DD/YYYY

\*\* 21 - Spill cause:

22 - Spill cause explanation:  
(Required if spill Cause is "Other")

\*\* 23 - Where did failure occur?

24 - Explanation of Where Failure Occurred:  
(Required if Where Failure Occurred is "Other")

\*\* 25 - Was this spill associated with a storm event?

26 - Diameter of sewer pipe at the point of blockage or failure:  inches

27 - Material of sewer pipe at the point of blockage or failure:

28 - Estimated age of sewer asset at the point of blockage or failure:

\*\* 29 - Spill response activities:  
(Hold Ctrl key to Select Multiple answers from the list)

30 - Explanation of spill response activities:  
(Required if spill response activities is "Other", use attachment if the text is more than 1700 characters)

\*\* 31 - Spill response completion date:     :   Date Format: MM/DD/YYYY

\*\* 32 - Spill corrective action taken:  
(Hold Ctrl key to Select Multiple answers from the list)

33 - Explanation of spill corrective action taken:  
(Required if spill corrective action is "Other")

\*\* 34a - Is there an ongoing investigation?

35 - Explanation of volume estimation methods used:  
(Describe how you developed spill volume estimates for this spill)

\* 36(a) - Name and Tittle (Contact person who can answer specific questions about this SSO)

\* 36(b) - Contact Person Phone Number

## 6.4 SSO CATEGORY 3





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Navigate to:

You are logged-in as: SSO Demo. If this account does not belong to you, please log out.

**Spill - General Information** ?

[SSO Menu](#)

<b>Spill Event ID:</b>	New	<b>Regional Water Board:</b>	Region 5S - Sacramento
<b>Spill Location Name:</b>	Test	<b>Agency:</b>	State Water Resources Control Board
<b>WDID:</b>	5SSO10000	<b>Sanitary Sewer System:</b>	Demo South CS

[General Info](#) | [Spill Related Parties](#) | [Attachments](#)

**Spill - General Information, Screen 2**

Save Work in Progress | Submit Draft | Ready to Certify

You have  minutes to save your report before your session expires.

Note: Questions with **\*\*** are required to be answered for 'Save Work in Progress'.  
 Questions with **\*** are required to be answered for 'Submit Draft'.  
 Questions with **\*\*\*** are required to be answered for 'Ready to Certify'.

Submit Draft On:

Last Updated By: [SSO Demo](#)

1 - Spill Type: Category 3

**\* 2 - Estimate Spill Volumes**

- a) Estimated spill volume that reached a separate storm drain that flows to a surface water body?  gallons
- b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up)  gallons
- c) Estimated spill volume that reached a drainage channel that flows to a surface water body?  gallons
- d) Estimated spill volume recovered from a drainage channel that flows to a surface water body?  gallons
- e) Estimated spill volume discharged directly to a surface water body?  gallons
- f) Estimated spill volume recovered from surface water body?  gallons
- g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location.)  gallons
- h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up)  gallons

Estimated Total spill volume to Reach Surface Water (a-b+c+e)	Estimated Total spill volume to Reach Land (g)	Estimated Total spill volume Recovered (b+d+f+h)	Estimated Total spill volume (a+c+e+g)
<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="1"/>

\* 3 - Did the spill discharge to a drainage channel and/or surface water?

\* 4 - Did the spill reach a storm drainpipe that is not part of a combined sewer system?

\* 5 - If spill reached a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?

**Physical Location Details**

\* 6 - Spill location name:

\* 7 - Latitude of spill location:  deg.  min.  sec. OR  decimal degrees [\[ Map \]](#)

\* 8 - Longitude of spill location:  deg.  min.  sec. OR  decimal degrees [\[ Map \]](#)

\* 9 - County:

\* 10 - Regional Water Quality Control Board:

11 - Spill location description:  
 (Use attachment if location description is more than 2000 characters)

**Spill Details**

\* 12 - Number Of appearance points:

\* 13 - Spill appearance point:  
(Hold Ctrl key to Select Multiple answers from the list)

\* 14 - Spill appearance point explanation:  
(Required if spill appearance point is "Other" and/or multiple appearance points are selected)

\*\* 15 - Final spill destination:  
(Hold Ctrl key to Select Multiple answers from the list)

16 - Explanation of final spill destination:  
(Required if final spill destination is "Other")

\* 17 - Estimated spill start date/time:     Date Format: MM/DD/YYYY

\* 18 - Date and time sanitary sewer system agency was notified of or discovered spill:     Date Format: MM/DD/YYYY

\* 19 - Estimated Operator arrival date/time:     Date Format: MM/DD/YYYY

\*\* 20 - Estimated spill end date/time:     Date Format: MM/DD/YYYY

\*\* 21 - Spill cause:

22 - Spill cause explanation:  
(Required if spill Cause is "Other")

\*\* 23 - Where did failure occur?

24 - Explanation of Where Failure Occurred:  
(Required if Where Failure Occurred is "Other")

\*\* 25 - Was this spill associated with a storm event?

26 - Diameter of sewer pipe at the point of blockage or failure:  inches

27 - Material of sewer pipe at the point of blockage or failure:

28 - Estimated age of sewer asset at the point of blockage or failure:

29 - Explanation of volume estimation methods used:  
(Describe how you developed spill volume estimates for this spill)

\* 30(a) - Name and Tittle (Contact person who can answer specific questions about this SSO)

\* 30(b) - Contact Person Phone Number

## 6.1 NO SPILL CERTIFICATION



[Menu](#) | [Help](#) | [Log out](#)

Navigate to:

You are logged-in as: SSO Demo . If this account does not belong to you, please log out.

**SSO - No Spill Certification** [?](#) [SSO Menu](#)

**Regional Water Board:** Region 5S - Sacramento  
**Agency:** State Water Resources Control Board  
**Sanitary Sewer System:** Demo South CS  
**WDID:** 5SSO10000

**No Spill Certification:**

I certify under penalty of law that no spills occurred for the month specified below. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine or imprisonment, for knowing violations. Clicking the "Certify" button below indicates my certification of this report and my understanding of the above conditions.

Month/Year Without Spills:

Certifier Name\*:

Certifier Title\*:

Executed On\*:

Executed At\*:

**Previously Submitted Months with "No Spill Certification"**

Confirmation Number	No Spill Certificate for the Month of	Entered Date/Time	Certified UserID	Certified Name
2362863	February 2013	2013-7-19.13.39. 26. 0	SSO Demo	d
2362859	January 2013	2013-7-17.14.51. 11. 0	SSO Demo	test
2306210	September 2011	2011-11-10.9.34. 37. 0	SSO Demo	Test
2294930	January 2011	2011-7-15.11.57. 22. 0	SSO Demo	
2253851	July 2010	2010-8-19.8.59. 38. 0	SSO Demo	
2247649	June 2010	2010-7-7.13.43. 35. 0	SSO Demo	
2239286	April 2010	2010-4-29.11.10. 18. 0	SSO Demo	
2212902	December 2009	2009-11-9.8.19. 48. 0	SSO Demo	
821795	December 2009	2009-4-9.7.47. 6. 0	SSO Demo	
2199725	August 2009	2009-8-31.7.18. 33. 0	SSO Demo	
2186309	July 2009	2009-7-13.10.4. 36. 0	SSO Demo	
2186308	July 2009	2009-7-13.9.47. 7. 0	SSO Demo	
829411	June 2009	2009-5-27.16.9. 12. 0	SSO Demo	
821794	April 2009	2009-4-9.7.42. 29. 0	SSO Demo	
826402	March 2009	2009-5-11.8.26. 15. 0	SSO Demo	
821793	March 2009	2009-4-9.7.41. 39. 0	SSO Demo	
821792	March 2009	2009-4-9.7.28. 7. 0	SSO Demo	
803308	November 2008	2008-11-12.15.7. 17. 0	SSO Demo	
803281	October 2008	2008-11-12.10.16. 34. 0	SSO Demo	
803282	October 2008	2008-11-12.10.18. 7. 0	SSO Demo	
821791	April 2008	2009-4-9.7.25. 16. 0	SSO Demo	
2182154	February 2008	2009-7-1.10.40. 39. 0	SSO Demo	
803303	January 2008	2008-11-12.14.1. 34. 0	SSO Demo	
2174848	December 2007	2009-6-22.13.7. 40. 0	SSO Demo	
2232727	January 2007	2010-3-8.11.33. 49. 0	SSO Demo	
2248328	August 2006	2010-7-12.9.40. 51. 0	SSO Demo	
491397	February 2006	2007-4-10.9.41. 34. 0	SSO Demo	



**EMERGENCY RELEASE FOLLOW - UP NOTICE REPORTING FORM**

A	BUSINESS NAME	FACILITY EMERGENCY CONTACT & PHONE NUMBER (    )    -					
B	INCIDENT DATE	MO	DAY	YR	TIME OES NOTIFIED	(use 24 hr time)	OES CONTROL NO.
C	INCIDENT ADDRESS LOCATION			CITY / COMMUNITY	COUNTY	ZIP	
D	CHEMICAL OR TRADE NAME (print or type)				CAS Number		
D	CHECK IF CHEMICAL IS LISTED IN 40 CFR 355, APPENDIX A <input type="checkbox"/>				CHECK IF RELEASE REQUIRES NOTIFICATION UNDER 42 U.S.C. Section 9603 (a) <input type="checkbox"/>		
D	PHYSICAL STATE CONTAINED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS		PHYSICAL STATE RELEASED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS		QUANTITY RELEASED		
D	ENVIRONMENTAL CONTAMINATION <input type="checkbox"/> AIR <input type="checkbox"/> WATER <input type="checkbox"/> GROUND <input type="checkbox"/> OTHER			TIME OF RELEASE	DURATION OF RELEASE ___DAYS ___HOURS ___MINUTES		
E	ACTIONS TAKEN						
F	KNOWN OR ANTICIPATED HEALTH EFFECTS (Use the comments section for addition information)						
<input type="checkbox"/> ACUTE OR IMMEDIATE (explain) _____							
<input type="checkbox"/> CHRONIC OR DELAYED (explain) _____							
<input type="checkbox"/> NOTKNOWN (explain) _____							
G	ADVICE REGARDING MEDICAL ATTENTION NECESSARY FOR EXPOSED INDIVIDUALS						
H	COMMENTS (INDICATE SECTION (A - G) AND ITEM WITH COMMENTS OR ADDITIONAL INFORMATION)						
I	CERTIFICATION: I certify under penalty of law that I have personally examined and I am familiar with the information submitted and believe the submitted information is true, accurate, and complete. REPORTING FACILITY REPRESENTATIVE (print or type) _____ SIGNATURE OF REPORTING FACILITY REPRESENTATIVE _____ DATE: _____						

**EMERGENCY RELEASE FOLLOW-UP NOTICE**  
**REPORTING FORM INSTRUCTIONS**  
(This form may be reproduced, as needed)

**GENERAL INFORMATION:**

Chapter 6.95 of Division 20 of the California Health and Safety Code requires that written emergency release follow-up notices prepared pursuant to 42 U.S.C. § 11004, be submitted using this reporting form. Non-permitted releases of reportable quantities of Extremely Hazardous Substances (listed in 40 CFR 355, appendix A) or of chemicals that require release reporting under section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. § 9603(a)] must be reported on the form, as soon as practicable, but no later than 30 days, following a release. The written follow-up report is required in addition to the verbal notification.

**BASIC INSTRUCTIONS:**

- The form, when filled out, reports follow-up information required by 42 U.S.C § 11004. Ensure that all information requested by the form is provided as completely as possible.
- If the incident involves reportable releases of more than one chemical, prepare one report form for each chemical released.
- If the incident involves a series of separate releases of chemical(s) at different times, the releases should be reported on separate reporting forms.

**SPECIFIC INSTRUCTIONS:**

Block A: Enter the name of the business and the name and phone number of a contact person who can provide detailed facility information concerning the release.

Block B: Enter the date of the incident and the time that verbal notification was made to OES. The OES control number is provided to the caller by OES at the time verbal notification is made. Enter this control number in the space provided.

Block C: Provide information pertaining to the location where the release occurred. Include the street address, the city or community, the county and the zip code.

Block D: Provide information concerning the specific chemical that was released. Include the chemical or trade name and the Chemical Abstract Service (CAS) number. Check all categories that apply. Provide best available information on quantity, time and duration of the release.

Block E: Indicate all actions taken to respond to and contain the release as specified in 42 U.S.C. § 11004(c).

Block F: Check the categories that apply to the health effects that occurred or could result from the release. Provide an explanation or description of the effects in the space provided. Use Block H for additional comments/information if necessary to meet requirements specified in 42 U.S.C. § 11004(c).

Block G: Include information on the type of medical attention required for exposure to the chemical released. Indicate when and how this information was made available to individuals exposed and to medical personnel, if appropriate for the incident, as specified in 42 U.S.C. § 11004(c).

Block H: List any additional pertinent information.

Block I: Print or type the name of the facility representative submitting the report. Include the official signature and the date that the form was prepared.

**MAIL THE COMPLETED REPORT TO:**

**Chemical Emergency Planning and Response Commission (CEPRC) /  
Local Emergency Planning Committee (LEPC)  
Attn: Section 304 Reports  
3650 Schriever Avenue  
Mather, CA 95655**

NOTE: Authority cited: Sections 25503, 25503.1 and 25507.1, Health and Safety Code.  
Reference: Sections 25503(b)(4), 25503.1, 25507.1, 25518 and 25520, Health and Safety Code.

**Article 3. Minimum Standards for Area Plans**

**Section 2720. Proposed Area Plans.**

The proposed area plan, as required by Section 25503(d) of the Health and Safety Code, shall include:

- (a) a description of the extent to which the administering agency has met the requirements of this Article, and a schedule for implementing the final area plan, by December 29, 1987, to include the provisions of Sections 2722-2736 of this Article;
- (b) provisions for integrating, in the final area plan, information from business plans submitted by handlers within the jurisdiction of an administering agency;
- (c) protocols for responses to pesticide drift exposure incidents; and
- (d) a form providing information on the elements within the area plan, substantially equivalent to the following optional model reporting form for area plans.

NOTE: Authority cited: Sections 25503 and 25517.5, Health and Safety Code, Section 12997.7, Food and Agricultural Code. Reference: Section 25503, Health and Safety Code, Section 12997.7, Food and Agricultural Code.

**OPTIONAL MODEL REPORTING FORM - AREA PLAN**

<p align="center"><b>CHECKLIST for AREA PLAN ELEMENT and reference section</b></p>	<p align="center"><b>ELEMENT ATTACHED</b></p>	<p align="center"><b>ELEMENT NOT PROVIDED, JUSTIFICATION ATTACHED</b></p>	<p align="center"><b>PROPOSED DATE FOR COMPLETION</b></p>
SECTION 2722 - EMERGENCY RESPONSE PROCEDURES			
Approach, Recognition & Evaluation			
Personnel Monitoring & Decontamination			
Equipment Monitoring & Decontamination			
SECTION 2723 - PREEMERGENCY PLANNING			
Pre-incident Site Surveys			
Planning & Coordination			
Emergency Funding Access			
Disposal Facility Access			
Emergency Response Contractor Access			
Integrated Response Management System			
SECTION 2724 - NOTIFICATION & COORDINATION			
Notification & Coordination			
Emergency Communications			
Responsibility Matrix			
OES Notification			
SECTION 2725 - TRAINING			
Emergency Response Personnel Training			
Training Documentation			
Training Exercises			
SECTION 2726 - PUBLIC SAFETY & INFORMATION			
Site Perimeter Security			
Safety Procedure Information			
Information Release Responsibility			
Medical Notification			
Evacuation Plans			
SECTION 2727 - SUPPLIES AND EQUIPMENT			
Listing & Description			
Testing & Maintenance			
SECTION 2728 - INCIDENT CRITIQUE AND FOLLOWUP			