



# Sanitary Sewer Overflow (SSO) Reduction Program

Division of Water Quality  
State Water Resources Control  
Board

# Overview

- Background on Statewide SSO Reduction Program
- Roles and Responsibilities
- Monitoring and Reporting Program (MRP) Changes
- Data Trends and Analyses
- SSO Program Activities and Priorities

# Background on Statewide SSO Reduction Program

# Background

- Goal
  - Reduce Sanitary Sewer Overflows (SSOs) and the volume of sewage spilled statewide
  - Protect public health, safety, and the environment
  - Timely notification for spill responders

# Background

- 2004: State Water Resources Control Board passed a Resolution to reduce number and volumes of SSOs
- Provides streamlined approach to permitting sewage collection systems, compared with numerous individual regional water board permits existing at the time
- Modeled after USEPA Capacity, Management, Operations and Maintenance (CMOM) national program efforts
- First comprehensive regulatory program in nation to address sanitary sewer systems (both for reporting spills and managing collection systems)
- **Statewide SSO Program Permit adopted May 2, 2006**
  - Applies to publicly owned sanitary sewer systems with a 1 mile or more in pipe length
    - 1,093 currently enrolled

# Basic Requirements

- Requires Reporting of SSOs
  - Spills of untreated sewage from publicly owned portions of sanitary sewer systems upstream of a sewage treatment plant head-works
  - Treatment plant and permitted combined sewage overflow points not regulated
  - Private Lateral Sewage Discharges (PLSDs) not regulated, enrollees are encouraged to report them
- Complete and update Collection System Questionnaire
- Maintain Compliance with MRP (9/9/2014 Version)
- Sewer System Management Plan (SSMP) for their sanitary sewer system

# Roles and Responsibilities

- State Water Board
  - Statewide General Order regulatory implementation (DWQ/WDR Unit)
  - Audits and Enforcement of General Order (DWQ, Office of Enforcement and RBs)
  - Support RBs with spill response, inspections, audits and compliance activities
  - Additional spill response / SSO Order training classes for RBs planned for Spring/Summer 2009)

# Roles and Responsibilities

- Regional Boards
  - Spill Response
  - Spill Enforcement
  - Spill notification/reporting procedures
  - Assist State Board with enrollment coverage/NOI
- Other Agencies
  - Cal OES
  - County Health Departments
  - Other



# MRP Changes



# Review and Update Process

## Monitoring and Reporting Program (MRP)

- The MRP establishes monitoring, record keeping, reporting and public notification requirements for the SSS WDRs
- The Executive Director may make revisions to this MRP at any time pursuant to the authority delegated by Water Code section 13267(f) & Resolution No. 2002-0104
- These revisions may include a reduction or increase in monitoring and reporting

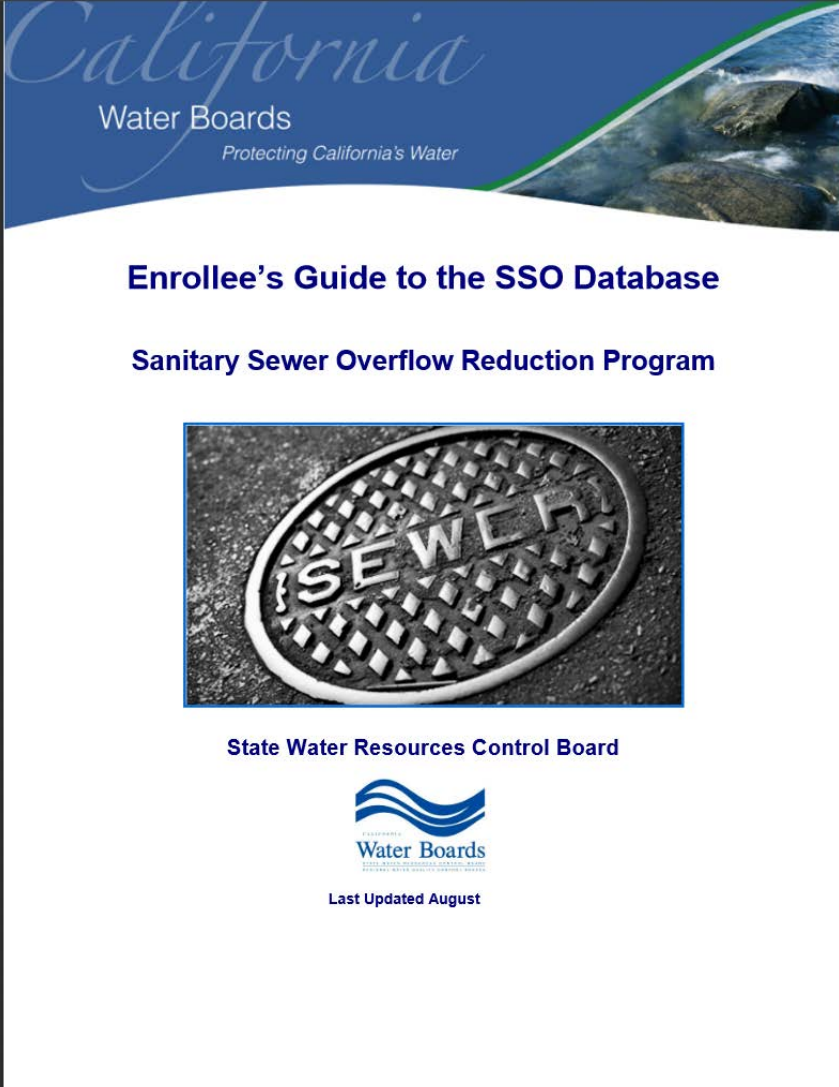


# MRP Changes

- Re-categorization of SSOs
- Notification Streamlining
- Event Based Spill Reporting
- SSO Technical Report (required for SSOs where 50K gallons or more reach surface water)
- Water Quality Monitoring Plan
- Provide electronic copy of SSMP


# Major MRP Changes (Cont.)

- Enrollee's Guide to the SSO Database
  - Posted on the SSO Reduction Program Website:  
[http://www.waterboards.ca.gov/water\\_issues/programs/ss0/docs/discharger\\_workbook.pdf](http://www.waterboards.ca.gov/water_issues/programs/ss0/docs/discharger_workbook.pdf)
  - Provides Step-by-step guidance, FAQs, Acronyms, glossary, etc.
  - Self-audit information, pre-inspection questionnaire, and other resources
  - Develop with assistance from enrollees




California  
Water Boards  
*Protecting California's Water*

**Enrollee's Guide to the SSO Database**  
**Sanitary Sewer Overflow Reduction Program**



State Water Resources Control Board



Last Updated August

# Data Trends and Analyses

# Statewide Sewer Overflow Data

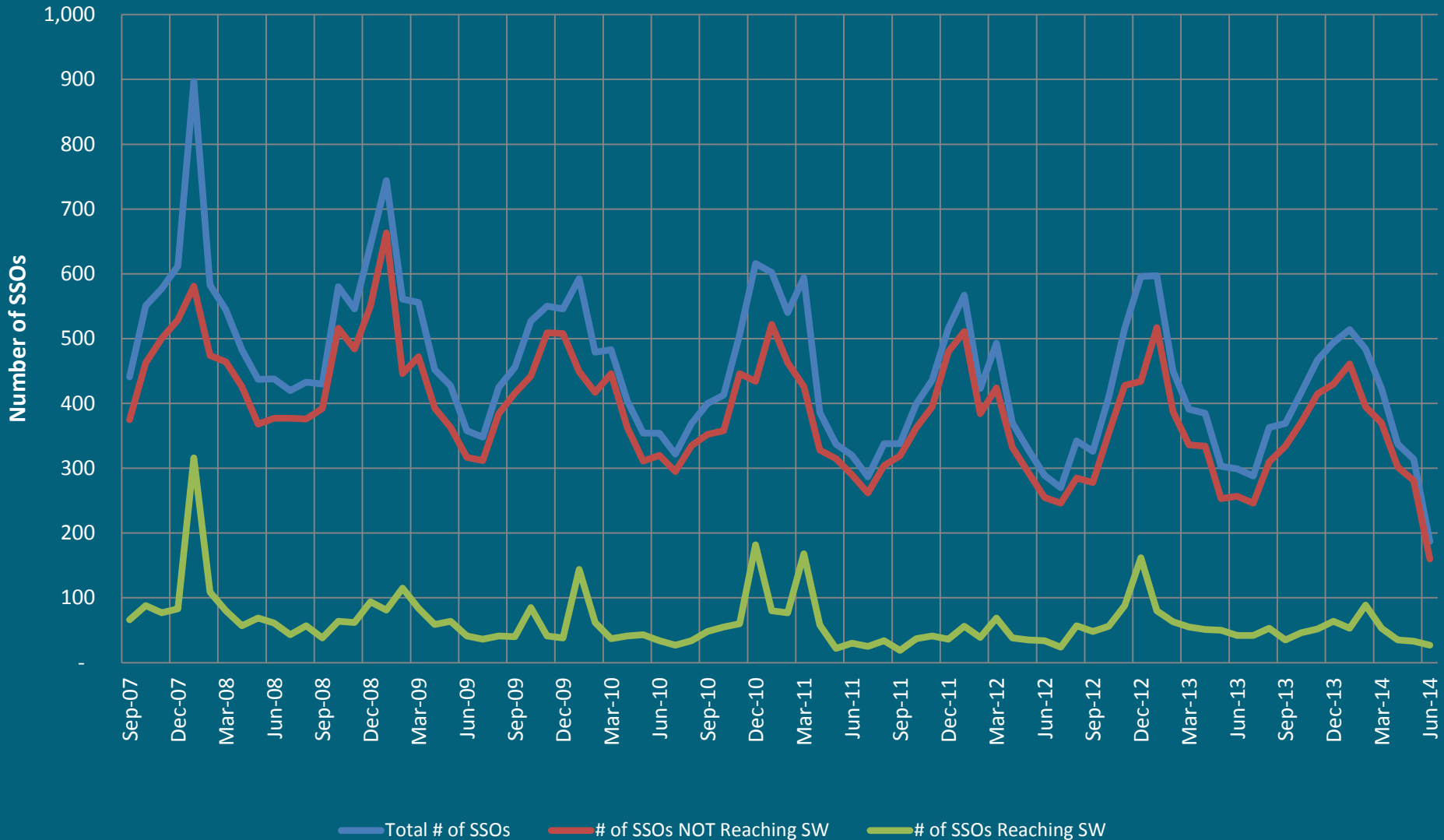
- Statewide data from January 2007 through June 2014:
  - 38,576 SSOs reported
    - 14% of sewer overflows reached surface water
  - ~196.6 million gallons of raw sewage overflow
    - 84% reached surface water
- SF Region data from January 2007 through June 2014:
  - 12,393 SSOs reported
    - 14% of sewer overflows reached surface water
  - ~72.9 million gallons of raw sewage overflow
    - 91% reached surface water

# Statewide Spill Data Trends

- Trends in sewer overflow characteristics:
  - ~91% of sewer overflows are < 1,000 gallons
    - Leading causes are roots, fats/oils/grease, and debris
  - ~5% of total sewer overflow volumes resulted from these 91% of sewer overflow events
  - ~9% are > 1,000 gallons
    - Leading causes are capacity and structural issues
  - 5% of enrollees (57) Responsible for 90% of the volume

# Sewer Overflows Trend

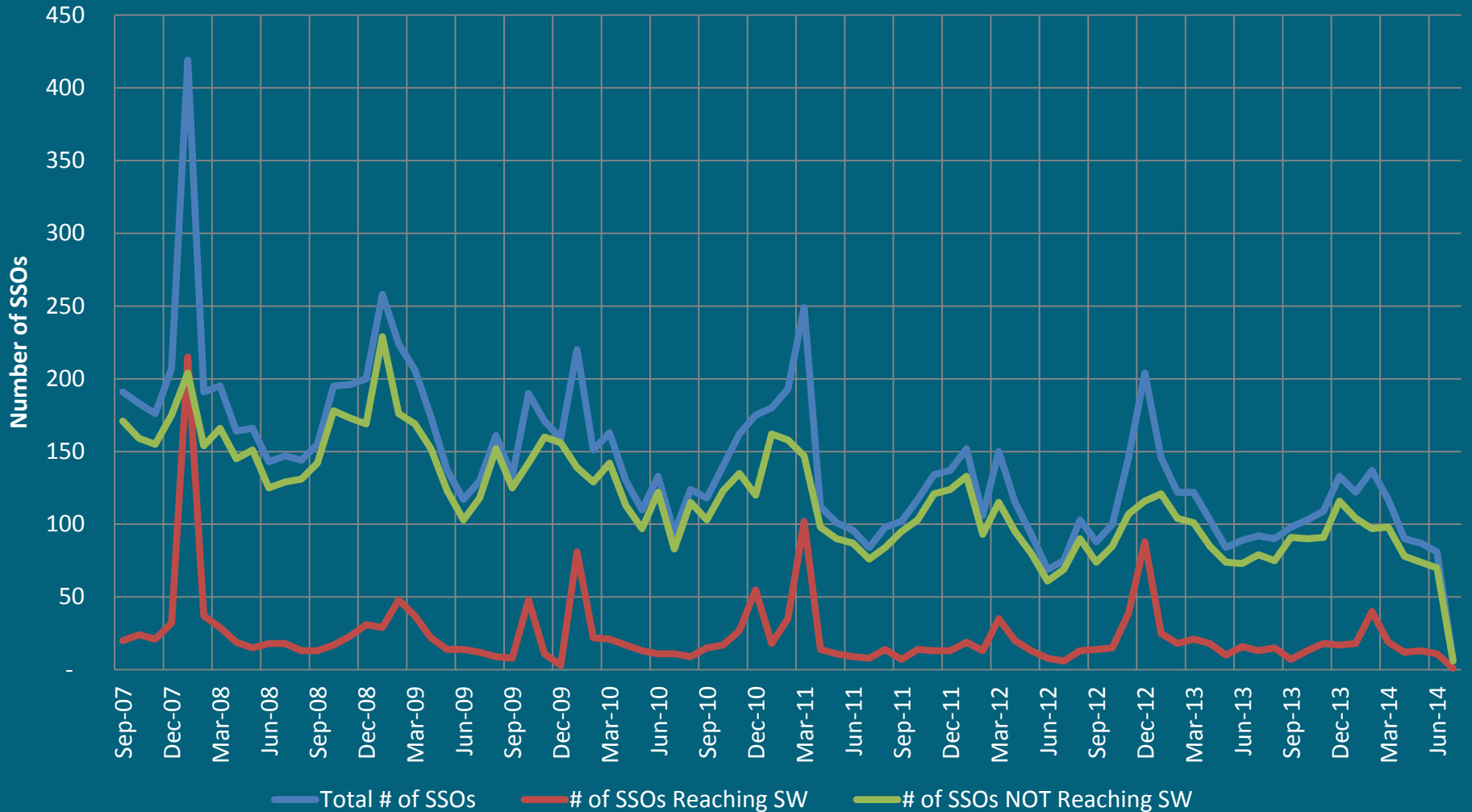
## Statewide Monthly Trend Number of Sewer Overflows





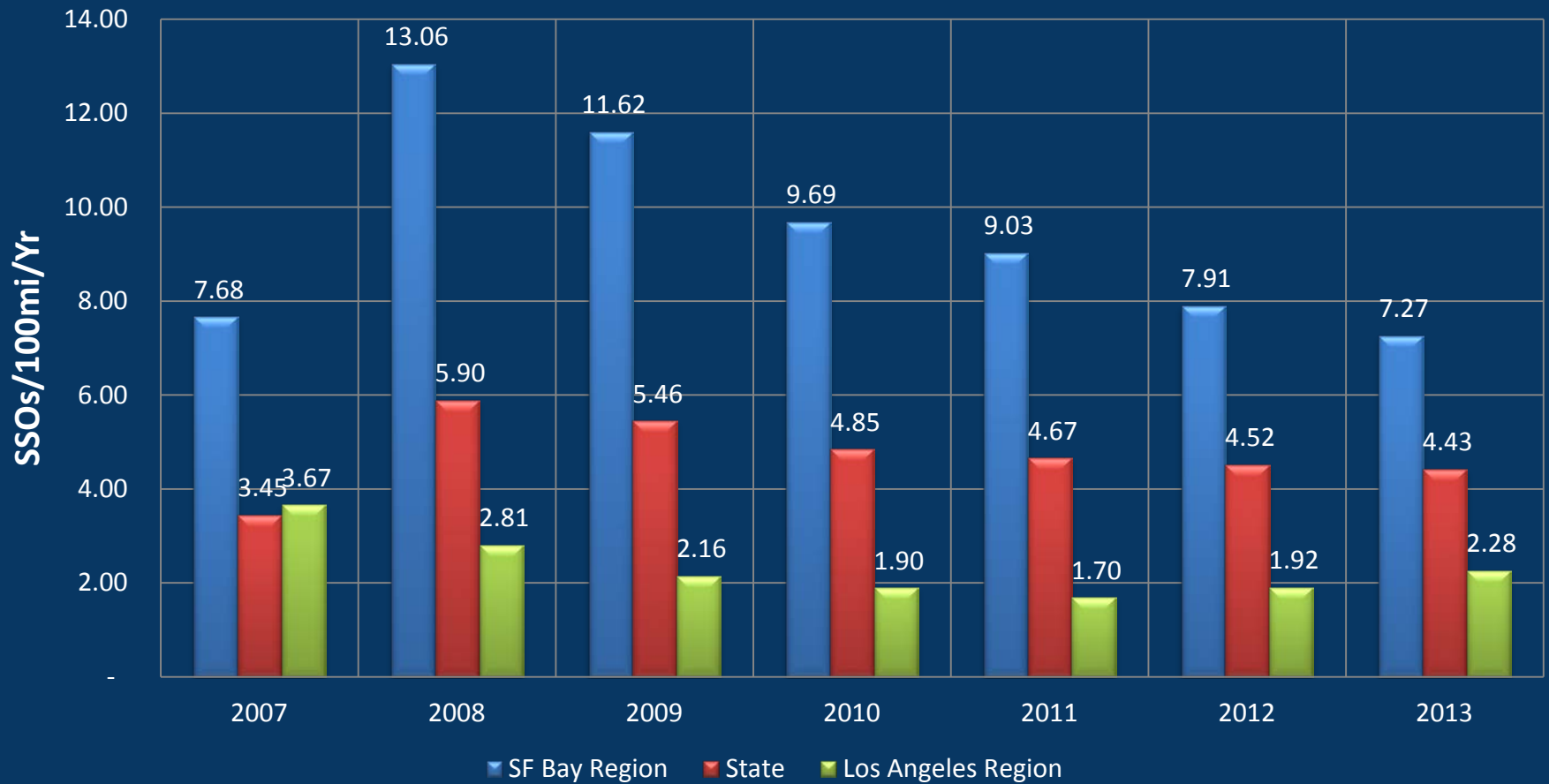
# Sewer Overflows Trend

## Monthly Trend Number of Sewer Overflows in SF Bay Region



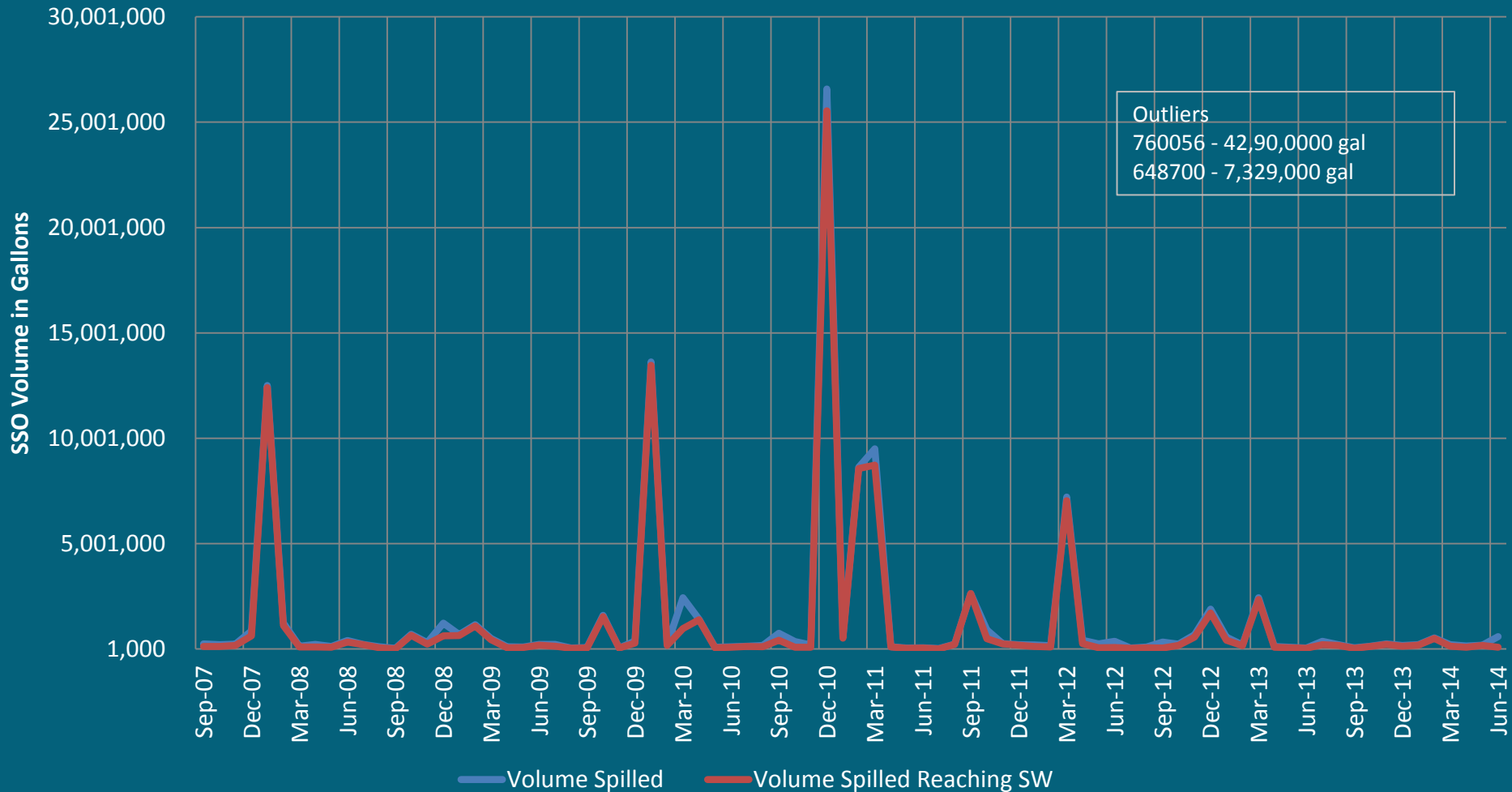
# Sewer Overflows Trend

SSOs/100mi/Yr



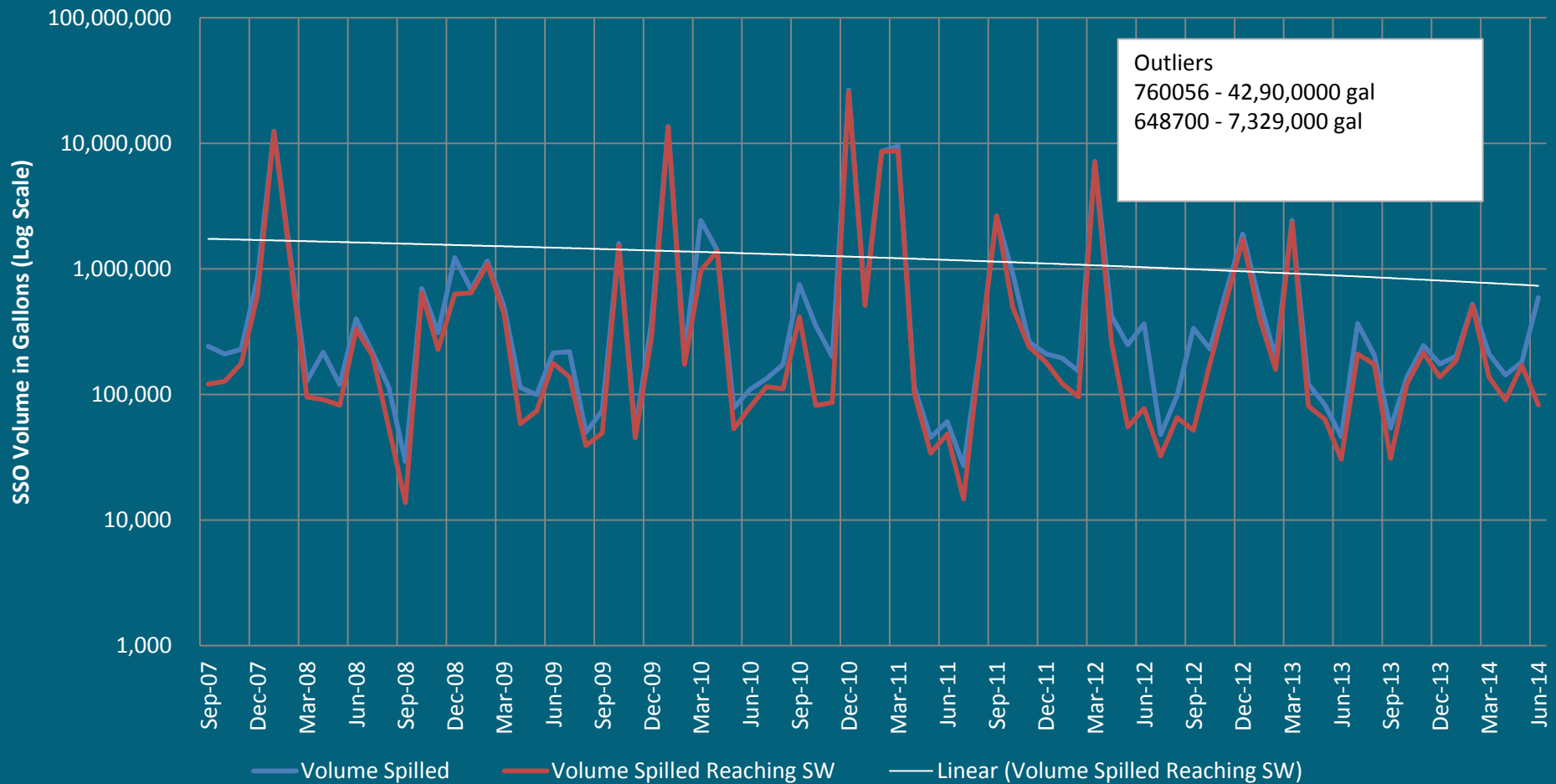
# Sewer Overflow Volume

## Statewide Monthly Trend in SSO Volume



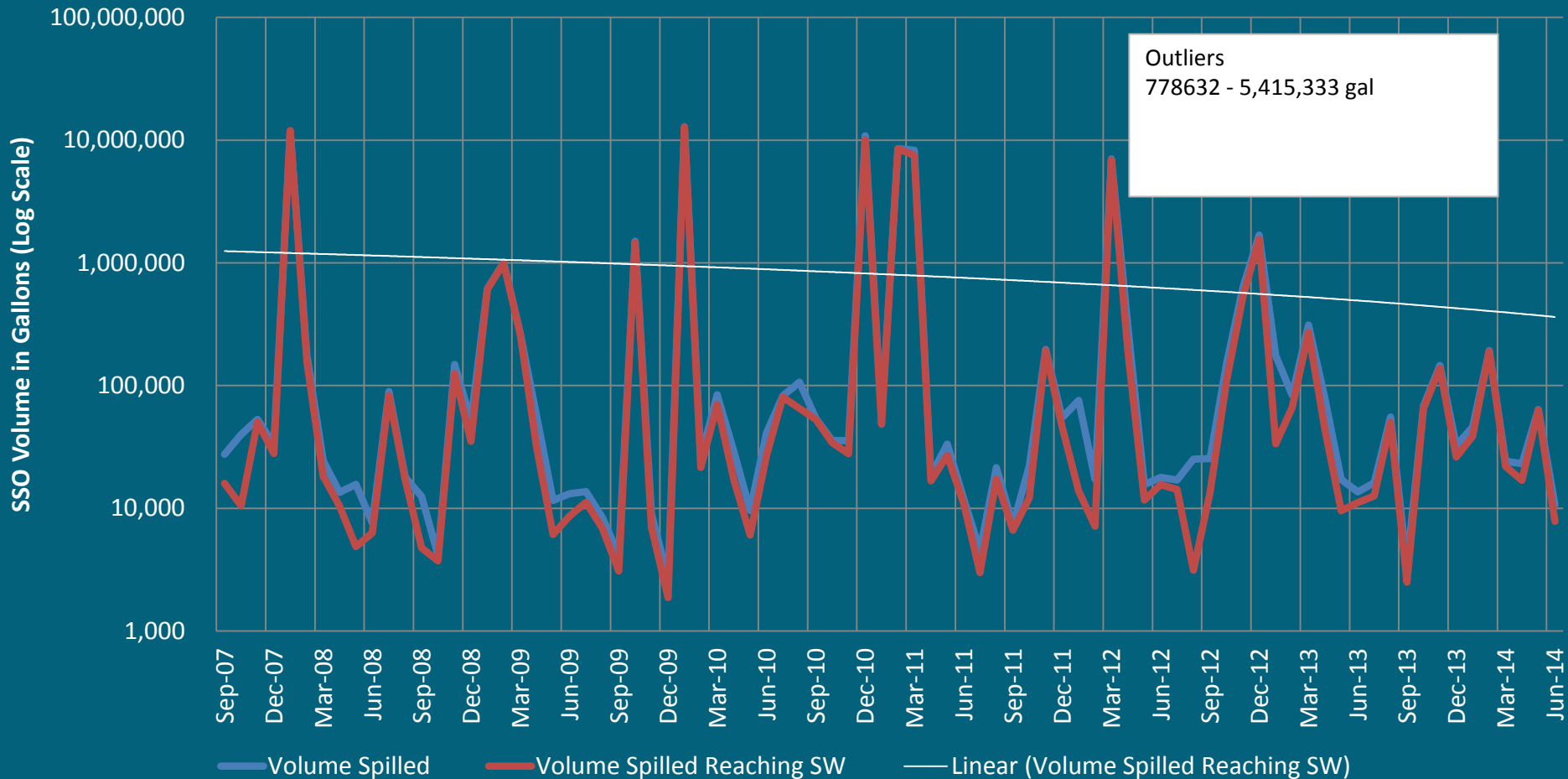
# Sewer Overflow Volume

## Is SSO Volume Decreasing Statewide?



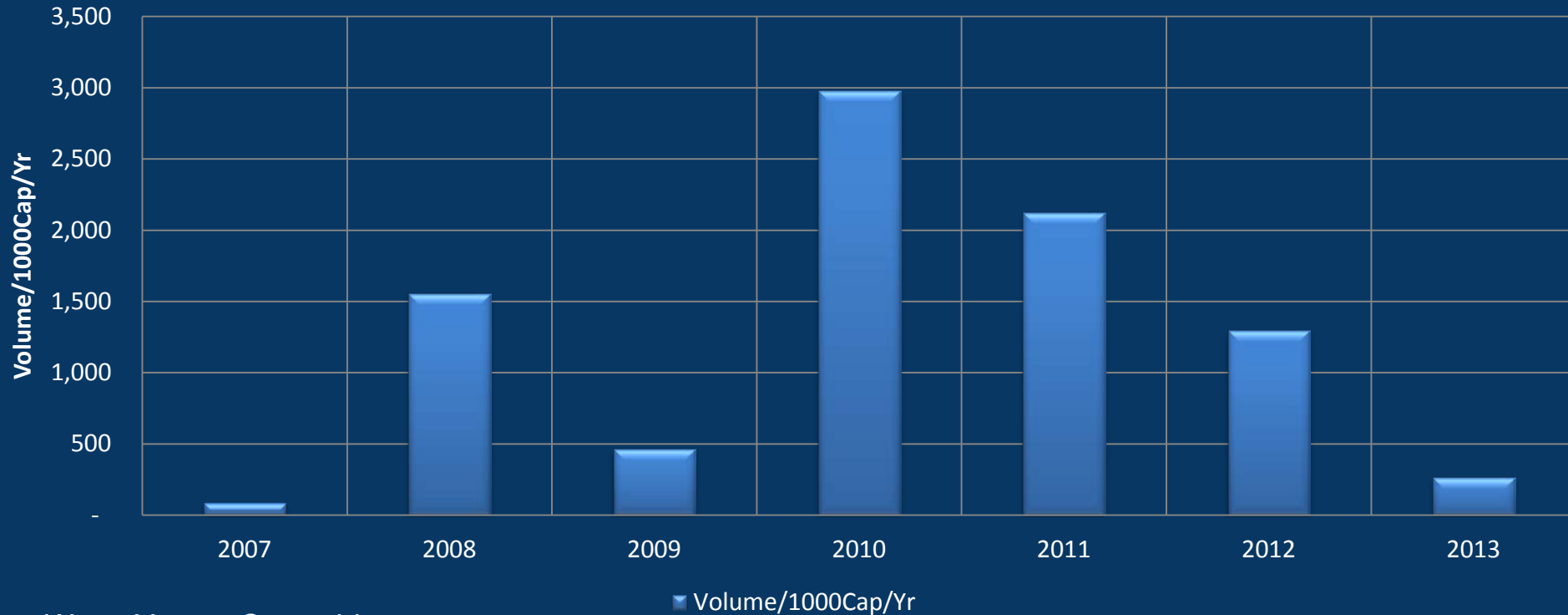
# Sewer Overflow Volume

## Is SSO Volume Decreasing in SF Bay Region?



# Sewer Overflow Volume

Volume/1000Cap/Yr



- Water Years - Statewide:

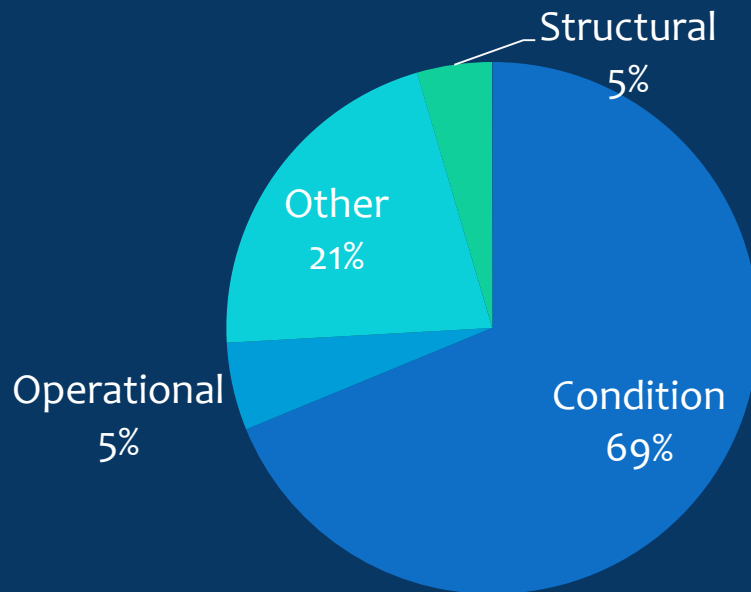
- 2008-2009 – 82% of normal
- 2009-2010 – 108% of normal
- 2010-2011 – 135% of normal
- 2011-2012 – 77% of normal
- 2012-2013 – 79% of Normal
- 2013-2014 – 49.5% of Normal (up to June)

- Water Years – SF Bay:

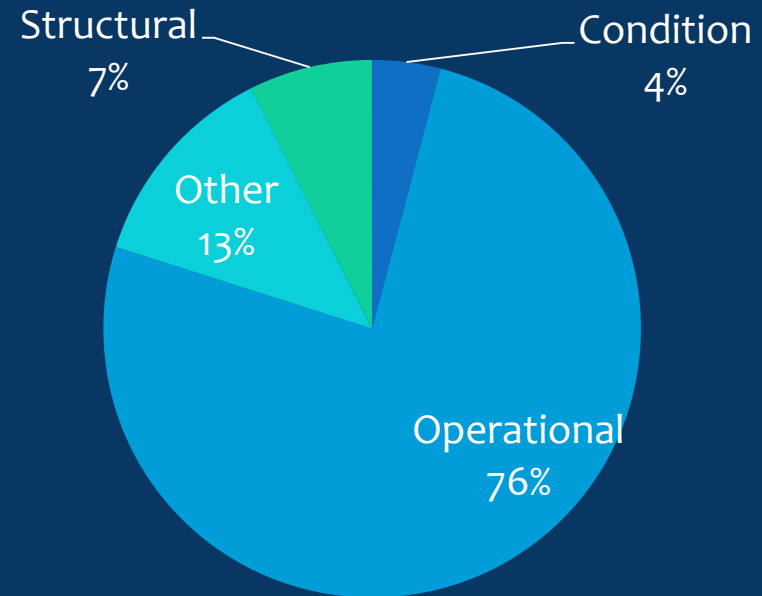
- 2008-2009 –
- 2009-2010 –
- 2010-2011 – 131% of normal
- 2011-2012 – 82% of normal
- 2012-2013 – 84% of Normal
- 2013-2014 – 43% of Normal (up to June)

# Causes of Sewer Overflows 2007-2014 in SF Bay Region

Percent of SSOs by Cause



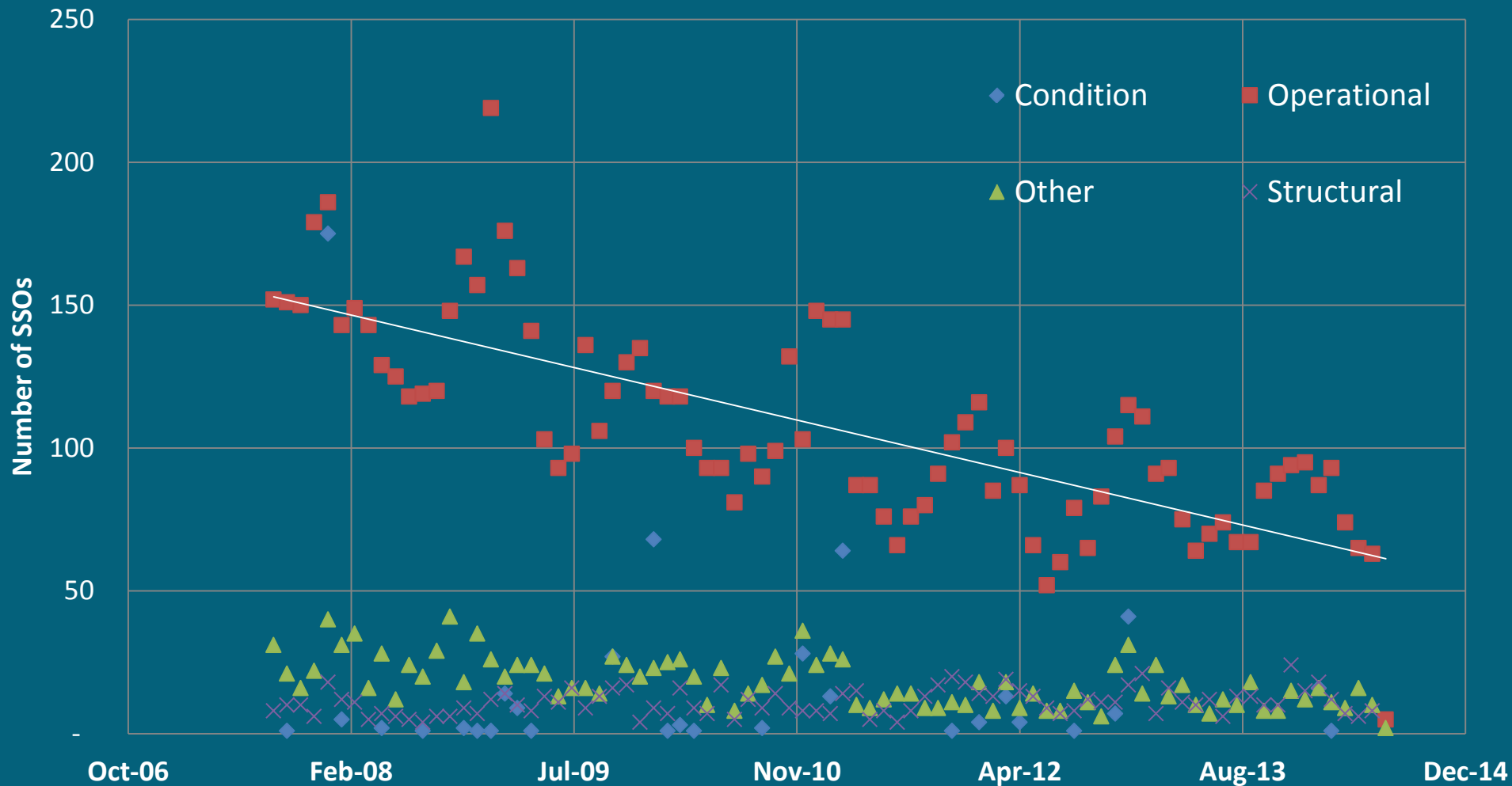
Percent of SSO Volume by Cause



- Operational – Caused by debris; fats, oil, and grease; and roots.
- Condition – Caused by flow exceeded capacity issues.
- Structural – Caused by pipe structural failures and pump station failure.
- Other – Includes unknown cause, multiple causes, vandalism, operator error, maintenance, improper installation, valve failure, failure from diversion during construction, siphon failure, inappropriate discharge, and non-sanitary sewer system related.

# Causes of Sewer Overflows 2007-2014 in San Francisco Region

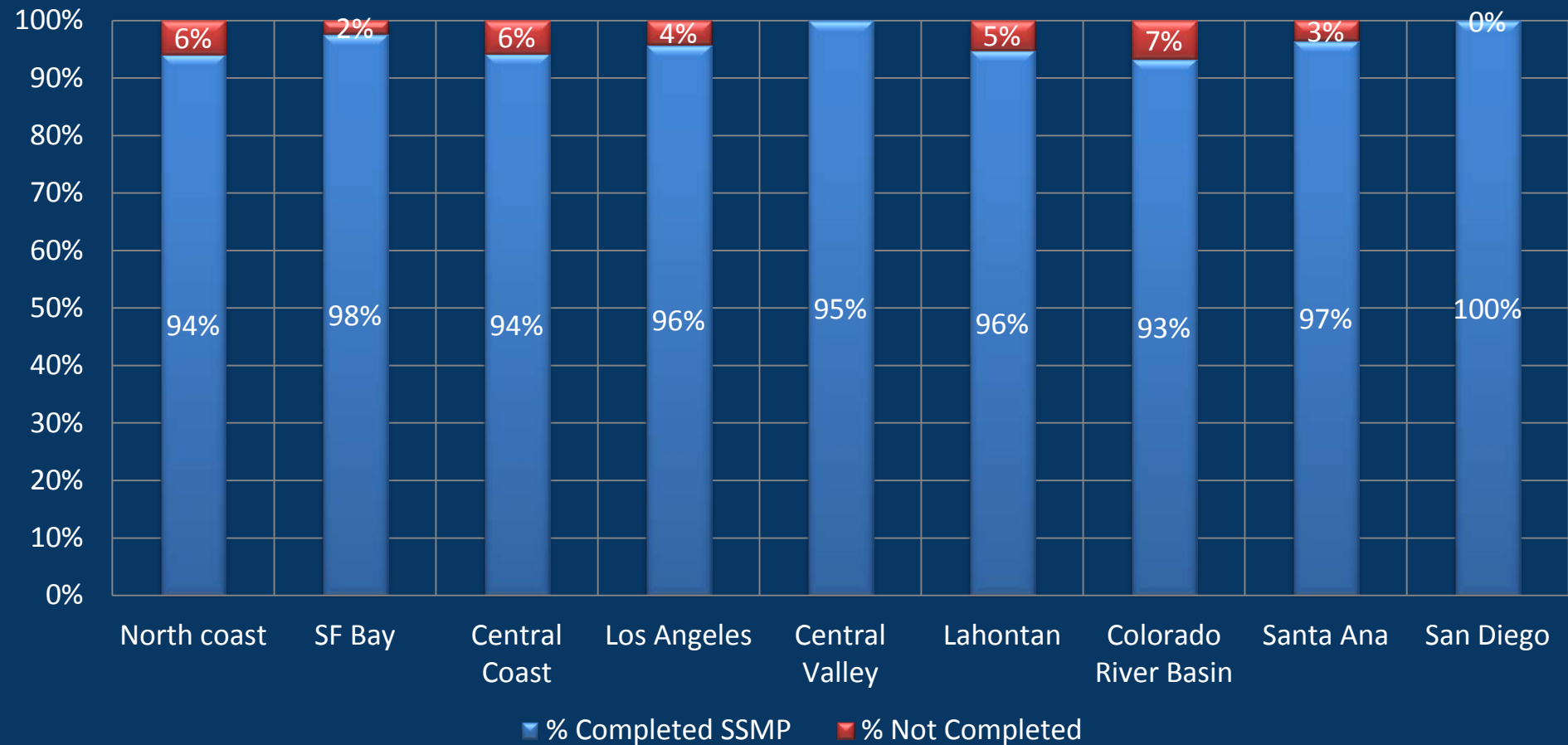
## Monthly SSO Trend by Cause Category





# SSMP Compliance

## % Completion of SSMP by Region



# SSMP Recertification

Sewer System Management Plan Time Schedule

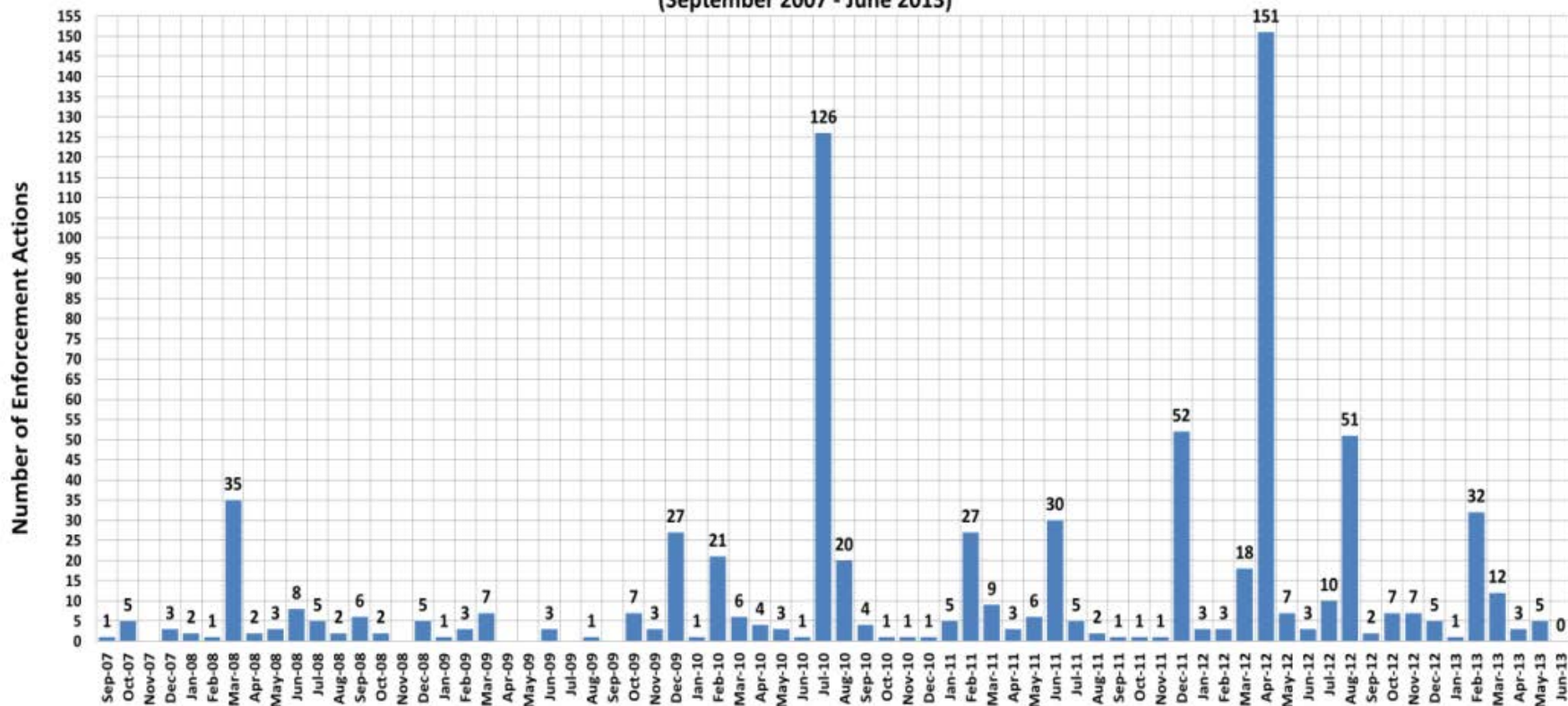
Task and Associated Section	Completion Date			
	Population > 100,000	Population between 100,000 and 10,000	Population between 10,000 and 2,500	Population < 2,500
Application for Permit Coverage <b>Section C</b>	6 months after WDRs Adoption			
Reporting Program <b>Section G</b>	6 months after WDRs Adoption <sup>1</sup>			
SSMP Development Plan and Schedule <b>No specific Section</b>	9 months after WDRs Adoption <sup>2</sup>	12 months after WDRs Adoption <sup>2</sup>	15 months after WDRs Adoption <sup>2</sup>	18 months after WDRs Adoption <sup>2</sup>
Goals and Organization Structure <b>Section D 13 (i) &amp; (ii)</b>	12 months after WDRs Adoption <sup>2</sup>		18 months after WDRs Adoption <sup>2</sup>	
Overflow Emergency Response Program <b>Section D 13 (vi)</b>	24 months after WDRs Adoption <sup>2</sup>	30 months after WDRs Adoption <sup>2</sup>	36 months after WDRs Adoption <sup>2</sup>	39 months after WDRs Adoption <sup>2</sup>
Legal Authority <b>Section D 13 (iii)</b>				
Operation and Maintenance Program <b>Section D 13 (iv)</b>				
Grease Control Program <b>Section D 13 (vii)</b>				
Design and Performance <b>Section D 13 (v)</b>	36 months after WDRs Adoption	39 months after WDRs Adoption	48 months after WDRs Adoption	51 months after WDRs Adoption
System Evaluation and Capacity Assurance Plan <b>Section D 13 (viii)</b>				
Final SSMP, incorporating all of the SSMP requirements <b>Section D 13</b>				

# SSMP Re-certification

<b>Action</b>	<b>Population &gt; 100,000</b>	<b>Population Between 100,000 and 10,000</b>	<b>Population Between 10,000 and 2,500</b>	<b>Population &lt; 2,500</b>
Completion Deadline	5/2/2009	8/2/2009	5/2/2010	8/2/2010
5-year Update and Recertification	5/2/2014	8/2/2014	5/2/2015	8/2/2015

# Compliance and Enforcement Activities

SSO Related Enforcement Actions  
(September 2007 - June 2013)



- Sanitary Sewer System Inspections

- Office of Enforcement and Regional Water Board staff conducted 23 inspections in FY 2012 – 2013

# Data Availability

- All sanitary sewer overflow (SSO) data are publicly available:

- SSO Incident Maps
- Interactive SSO Report
- Operational Report
- Raw Data

**SANITARY SEWER OVERFLOWS: 07/01/2012 - 06/30/2013**

Spill type: Category 1 Category 2 Category 3  
Click on a map icon for incident information

Note: Map does not include spills from sewage treatment plants.

Show all incidents  
Show only incidents with valid GPS coordinates

Filter by volume (gallons):  
0 - 1,000,000+ gal.  
Minimum: 0  
Maximum: 1,000,000+  
Set Volume

Filter by date:  
07/01/2012 - 06/30/2013  
Start: Jul 01 2012  
End: Jun 30 2013  
Set Dates

Filter by Agency:  
(All)  
Set Agency Show All

**SSO REPORT FORM**

Welcome to the Interactive SSO Report!

SSOs and private lateral sewage discharges contained in the State Water Resources Control Board database can be searched by using any of the criteria below. The search criteria relate to the location, and time of sewage discharge events for which the user wishes to search. Please see Terms for explanations of the search criteria.

Search Tip: Exact agency or sanitary sewer name may not match spelling in CIWQS. If you have the record you want, try a broader search by city, county, or region.

Enter SSO Event ID: \_\_\_\_\_

Enter a sanitary sewer system agency name: \_\_\_\_\_

Enter a sanitary sewer system name: \_\_\_\_\_

Enter WIDID: \_\_\_\_\_

Enter a physical address: \_\_\_\_\_

Enter a zip code: \_\_\_\_\_

Enter a city: \_\_\_\_\_

Select a county: \_\_\_\_\_

**California Integrated Water Quality System Project (CIWQS)**

**Spill Public Report - Summary Page**

Here is the summary page with the results of your spill public report search. These results correspond to the following search criteria:

**SEARCH CRITERIA:** [REFINE SEARCH](#)

- Region (3)
- Spill Type (San\_catt\_2\_3)

Please see the [Glossary of Terms](#) for explanations of the search results column headings. [More information about the report is found at the bottom of this page.](#)

**Note: For the "Collection System Performance Report" column, the Performance report will only show the most recent 12 months of data if in the original SSO Interactive Report search the date range was not specified.**

[VIEW PRINTER FRIENDLY VERSION](#) [EXPORT THIS REPORT TO EXCEL](#) [EXPORT ALL SPILL DETAILS TO EXCEL](#)

**SSO Data Flat Files**

[Glossary of Terms](#)

All of the information collected in the SSO database is entered by enrollees. State and Regional Water board information in the SSO database. The SSO database is accessed through the California Integrated Water Quality System Project (CIWQS).

NOTE: Please email [Vector Lopez](#) with any inquiries.

File	Size	Last Modified
<a href="#">No_spill.txt</a>	904 KB	Dec 13 2013 05:31:38 PM
<a href="#">PLSD.txt</a>	2635 KB	Dec 13 2013 05:32:50 PM
<a href="#">PRA.txt</a>	191 KB	Dec 13 2013 05:31:39 PM
<a href="#">Questionnaire.txt</a>	286 KB	Dec 13 2013 05:31:40 PM
<a href="#">SSMP.txt</a>	208 KB	Dec 13 2013 05:31:40 PM
<a href="#">SSO.txt</a>	25618 KB	Dec 13 2013 05:32:44 PM

# SSO Program Activities and Priorities



# SSO Program Activities

- SSO Database (CIWQS) improvements/updates
  - Data Review Committee
  - Update SSO Database guide as needed
- Oversee SSMP 5-year Update and Recertification
  - Send Compliance notifications via email and informal enforcement actions (NOVs)
- SSMP Development Guide update
- Compliance Assistance
- Compliance Inspections



# Statewide Spill Data Trends

Phase I – Focus on sanitary sewer systems that:

- Are located in disadvantaged communities;
- May be impacting drinking water supply;
- May be impacting public health protection;
- Are identified through human bacteriological tracing methods developed by the Southern California Coastal Water Research Project (SCCWRP); or
- May have further capacity issues due to sea level rise.

Phase II – Appropriate actions necessary to address the issues currently preventing these systems from being properly rehabilitated, managed, operated and maintained.



# Questions?

# Program Contacts & Info

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Mike Chee, P.E.  
San Francisco Bay Region SSO Contact  
San Francisco Water Board  
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(510) 622-2333

SSO Main Website:

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

List Serve Sign-Up:

[http://www.waterboards.ca.gov/resources/email\\_subscriptions/wrcb\\_subscribe.shtml](http://www.waterboards.ca.gov/resources/email_subscriptions/wrcb_subscribe.shtml)