California
Water Boards
Protecting California's Water

Statewide
Sanitary Sewer Overflow Reduction Program
Annual Compliance Report

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

FISCAL YEAR 2012 – 2013

EXECUTIVE SUMMARY

The State Water Resources Control Board (State Water Board) adopted the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDRs) as Water Quality Order 2006-0003-DWQ in May 2006. The purpose of the SSS WDRs is to provide consistent statewide requirements for notification and reporting of sewage spills and sewer system management with the goal of reducing both the number of Sanitary Sewer Overflows (SSOs) and the volume of wastewater spilled in the state. This Fiscal Year 2012-2013 report provides an annual update on the statewide Sanitary Sewer Overflow Reduction Program (SSO Reduction Program). The report contains detailed information on implementation efforts, compliance, and enforcement actions completed.

Currently, 1,093 sanitary sewer systems are enrolled under the SSS WDRs. All enrollees are required to report all SSOs regardless of volume. For any month in which an enrollee does not have an SSO, the enrollee is still required to do a no-spill certification 30 days after the end of the month or within that quarter. The average monthly reporting compliance for Fiscal Year 2012-2013 (i.e., the percent of enrollees either reporting a spill or submitting a no-spill certification during a calendar month) was 92 percent, which is one percent less than during Fiscal Year 2011-2012. Overall, 493 enrollees (approximately 45 percent) reported one or more SSOs and 600 enrollees (approximately 55 percent) reported no SSOs for Fiscal Year 2012-2013. Since inception of the program, 802 enrollees (approximately 73 percent) have reported one or more SSOs and 291 enrollees (approximately 27 percent) reported no SSOs.

State Water Board staff's analyses of SSO reports show that SSOs have a seasonal pattern with more SSOs occurring and higher volumes of sewage spilled during the wet seasons. Although most SSOs are small, less than 1,000 gallons, the relatively few large SSOs that occur account for the majority of the sewage volume spilled. A significant cause of the large SSOs appears to be excessive infiltration and inflow. Staff's analyses of Regional Water Quality Control Boards' (Regional Water Boards) spill data for Fiscal Year 2012-2013 indicate that (1) the San Francisco Bay, Central Valley, and Los Angeles Water Boards account for 82 percent of reported spills in the state and (2) the San Francisco Bay and Central Valley Water Boards account for 74 percent of reported spill volume in the state. Staff ranked the sanitary sewer systems with the largest volumes of sewage spilled for Fiscal Year 2012-2013 and identified the 20 highest volume spillers in the state in this report.

Staff focused compliance and enforcement activities in Fiscal Year 2012-2013 on providing compliance assistance to enrollees and following up on past enforcement actions. Staff sent 148 notices of violation (NOVs) in Fiscal Year 2011-2012 to enrolled agencies that failed to complete and certify some or all the elements of their Sewer System Management Plan (SSMP), as required by the SSS WDRs. Of the 148 enrollees that received NOVs, 128 have returned to compliance and 8 have contacted staff requesting additional time to comply and/or submit completion schedules. The remaining 12 non-responsive enrollees have been referred to the State Water Board Office of Enforcement for further enforcement action. Staff also continues to address reporting deficiencies by implementing the automated email reminder tool developed and implemented in Fiscal Year 2011-2012. This tool identifies system specific reporting deficiencies and sends monthly email reminders to enrollees. Enrollees that do not respond to the NOVs or fail to correct deficiencies identified by the automated email reminders are referred to the Office of Enforcement for further enforcement action.

The Regional Water Boards and the Office of Enforcement are actively conducting sanitary sewer system inspections. Twenty three inspections were conducted in Fiscal Year 2012-2013. Additionally, the Regional Water Boards have taken 137 enforcement actions for violations, in whole or in part, related to the Statewide SSS WDRs during Fiscal Year 2012-2013.

SSO Reduction Program activities planned for the upcoming year include:

- Conducting additional enforcement to address SSS WDRs compliance;
- Making further refinements to the SSO database and public reports;
- Providing additional outreach and written guidance to assist staff and enrollees in program implementation; and
- Implementing Monitoring and Reporting Program (MRP) amendments per Order 2013-0058-EXEC.

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1.0 INTRODUCTION

A. General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (SSS WDRs)

This report provides an annual update on the statewide Sanitary Sewer Overflow Reduction Program (SSO Reduction Program) which implements the SSS WDRs. This report contains detailed information on the SSO Reduction Program covering implementation, compliance, and enforcement for Fiscal Year 2012-2013. Staff issued prior editions of this annual report in May 2008, May 2009, May 2010, August 2011, and January 2013. Staff aligned issuance of this annual report with the state fiscal year beginning in 2011-2012 to match other statewide performance reporting activities.

The SSS WDRs apply to all public agencies that own or operate a sanitary sewer system greater than one mile in pipe length. A publicly-owned sanitary sewer system is any system of pipes, pump stations, sewer lines, or other conveyances used to collect and convey wastewater to a publicly owned treatment facility. Agencies operating sanitary sewer systems in affected Regional Water Boards jurisdictions were required to enroll in the SSS WDRs at times. For instance, sanitary sewer systems in the San Diego, Los Angeles, and Santa Ana Regional Water Boards were required to enroll by January 2, 2007. Sanitary sewer systems in the Central Coast, North Coast and San Francisco Bay Water Boards were required to enroll in the program by May 2, 2007. Finally, sanitary sewer systems in the Central Valley[1], Lahontan[2], and Colorado River Basins were required to enroll on September 2, 2007. Throughout this report, the reader will note that the data analyses are presented for each Regional Water Board or its sub-areas (i.e., offices), as in the case of the Central Valley and Lahontan Regional Water Boards. The data are presented by sub-area due to the unique characteristics of each sub-area (i.e., geography, socio-economic setting, etc.).

An SSO is any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a publicly owned sanitary sewer system upstream of a treatment plant head-works. SSOs do not include overflows from privately-owned service laterals when these overflows are caused by blockages or other problems within the privately-owned lateral, but do include overflows from privately-owned laterals when the cause of the overflow is a problem within the publicly-owned portion of the sanitary sewer system. Overflows caused by problems in privately-owned service laterals and other private sewer assets like private lift stations are generally referred to as private lateral sewage discharges (PLSDs) even though the discharges do not always occur from laterals.

SSOs contain high levels of suspended solids, pathogens, toxic pollutants, nutrients, oil and grease, and other pollutants. SSOs can pollute surface water and groundwater, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface water. SSOs can also result in closure of beaches and other recreational areas and cause damage to properties.

The objective of the SSS WDRs is to reduce the number of SSOs and the volume of sewage spilled across the state by: (1) increasing transparency in terms of making spill data available to the public; and (2) encouraging the proper operation and maintenance of sanitary sewer systems by requiring the development and implementation of Sewer System Management Plans (SSMPs). The SSS WDRs require that any public agency with more than one mile of publicly-owned sewer lines that collects and/or conveys untreated or partially treated wastewater to a publicly owned treatment facility in the state must enroll for coverage, develop and implement an SSMP, and report all SSOs. If no SSOs occur during a month, the enrollee must submit a “no-spill” certification after the end of that month.

In addition to the statewide requirements of the SSS WDRs, sanitary sewer systems owned by public agencies in specific Regional Water Board jurisdictions are subject to additional requirements.

[1] The Central Valley Water Board has three offices in Fresno, Redding, and Sacramento.
[2] The Lahontan Water Board has two offices in South Lake Tahoe, and Victorville.

Although it is the State Water Board's intent that the SSS WDRs be the primary mechanism for regulation of sanitary sewer systems statewide, the SSS WDRs provide that a Regional Water Board may issue more stringent or prescriptive requirements for sanitary sewer systems in its region.

B. Additional SSS Requirements

San Diego Water Board

The San Diego Water Board's Order R9-2007-0005 contains the following requirements for sanitary sewer systems that are in addition to the requirements of the statewide SSS WDRs:

1) Prohibits all discharges of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant.
2) Requires that sanitary sewer system agencies notify the San Diego Water Board of all PLSDs in their service area when they become aware of them and report PLSDs to the State Water Board's SSO database.

Los Angeles Water Board

The Los Angeles Water Board places the following SSO notification and reporting requirements in National Pollutant Discharge Elimination System (NPDES) permits it issues to publicly owned treatment works (POTWs):

1) Requires POTWs to provide a 2-hour notification to health departments and the Los Angeles Water Board.
2) Requires water quality monitoring for spills 1,000 gallons or larger (includes spills to shallow groundwater and specifies additional water quality parameters above and beyond the statewide Monitoring and Reporting Program (MRP) requirements).
3) Requires POTWs to provide a 24-hour report to the Los Angeles Water Board and U.S. Environmental Protection Agency (U.S. EPA).
4) Requires POTWs to provide a 5-day preliminary report to Regional Water Board and U.S. EPA.
5) Requires POTWs to provide an Annual Report to the Los Angeles Water Board summarizing all spills that occurred during the year.
6) Requires POTWs to provide and retain additional records above and beyond the statewide MRP requirements.

The Los Angeles Water Board accepts some of the documentation prepared by the enrollee under the SSS WDRs for compliance purposes as satisfying the requirements of its spill contingency plan, construction, operation and maintenance, and spill reporting requirements provided that any additional or more stringent provisions enumerated in the permit are addressed (e.g., annual report, record keeping).

San Francisco Bay Water Board

On October 3, 2012, the San Francisco Bay Water Board rescinded additional requirements it had placed on sanitary sewer systems enrolled in the SSS WDRs. These requirements included annual SSO reports, 24-hour SSO online reporting, and annual SSMP audit reporting. The SSS WDRs already require enrollees to complete internal SSMP audits at least every two years and submit all SSOs to the database. However, the SSS WDRs do not require an annual report. Instead of requiring an annual report, Regional Water Board staff has worked with stakeholders to develop a performance report, which summarizes the performance of individual sanitary sewer systems and provides comparison to similar systems.

The San Francisco Bay Water Board has also issued individual NPDES permits to satellite sanitary sewer systems connected to the East Bay Municipal Utility District Regional Interceptor System in accordance with State Water Board Water Quality Order 2007-0004. These permits are unique and support other enforcement and regulatory activities to address excessive inflow and infiltration into these sanitary sewer systems and resulting wet weather discharges to San Francisco Bay.

Central Coast Water Board

The Central Coast Water Board has rescinded individual WDRs it had issued to several sanitary sewer systems in its region, and has directed applicable agencies to enroll in the statewide SSS WDRs. The Central Coast Water Board is scheduled to rescind another two individual orders on sanitary sewer systems at its January 30, 2014 meeting.

2.0 STATEWIDE SSS WDRS IMPLEMENTATION

Since the implementation of the SSS WDRs, staff resources have been focused on outreach, reporting, database development, training, development of a spill mapping tool, enforcement, and review and update of the SSS WDRs to achieve successful statewide implementation and compliance. Staff outreach to stakeholders since inception of the SSO Reduction Program has played a key role in the successful implementation of the program. Over the years, staff has partnered with stakeholder representative organizations to provide outreach and training opportunities, and to develop easy access to data submitted to the SSO database. In addition, increased compliance and enforcement activities have contributed to the overall successful implementation of the program.

A. SSO Reduction Program Outreach

Outreach continues to play a key role in both increasing enrollee participation in the SSO Reduction Program and reaching other interested stakeholders such as environmental groups and the general public. State and Regional Water Board staff has conducted specific outreach to provide information about the SSS WDRs to as many different audiences as possible. Specific tasks include the following:

1) Giving presentations and online training for trade and non-profit associations such as the California Water Environment Association (CWEA), Southern California Alliance of POTWs, Bay Area Clean Water Association, Central Valley Clean Water Association (CVCWA), California Fat, Oils, and Grease work group, American Public Works Association, Rural Community Assistance Corporation (RCAC), and the California Rural Water Association (CRWA).
2) Providing reporting assistance and resolving issues related to the SSO database.
3) Enhancing the SSO Public Reports.
4) Enhancing and maintaining the SSO website.
5) Broadcasting list-serve email announcements regarding program activities.

B. SSO Database and External Users Group

The SSO database is part of the California Integrated Water Quality System (CIWQS). The SSO database allows online submittal of information by enrollees and makes these data available to the public through the use of the public reports. The SSO database was created in collaboration with an advisory group of enrollees with the goal of achieving accurate and consistent spill data reporting. Staff continues to maintain and enhance the SSO database with available resources. Staff coordinates enhancements with an external users' group comprised of enrollees and other participating stakeholders. Once the SSO database enhancements resulting from the implementation of the 2013 amended MRP are completed, staff plans to re-initiate the bi-monthly data review meetings with stakeholders that were conducted in the past to evaluate the data collected and address database issues and enhancements.

C. Enrollee Training

Staff continues to implement the Memorandum of Agreement (MOA) with CWEA, which has been in place since inception of the program, to offer training on the SSS WDRs to enrollees. The current MOA is in effect until December 2015. With staff assistance, CWEA has created training courses on reporting a spill to the SSO database, developing an SSMP, communicating with the media during and after spill events, and estimating spill volumes. CWEA has offered these training courses statewide and will continue to do so under the terms of the MOA. In addition, CWEA has 17 independent local chapters throughout the state that provide training on topics related to the SSS WDRs.

Staff continues to provide assistance to CWEA for the production of new SSO Reduction Program education materials and for the periodic review and update of existing educational materials in accordance with the established MOA. This task includes participation in regular CWEA Training Task Force meetings, communication with education and marketing staff at CWEA, and development and presentation of training.

As part of the outreach and training cooperation with CWEA, staff plans to offer coordinated training throughout the state to educate enrollees of the SSS WDRs on the 2013 amendments to the MRP. Staff plans to use these training opportunities to inform enrollees of the changes to the MRP and the SSO database. In addition, staff will continue to work with small and disadvantaged communities and the organizations representing them (e.g., RCAC CRWA, and CVCWA) to provide accessible training. Staff has made it a priority to assist small and disadvantaged communities through one-on-one assistance and training.

D. Regional Water Board SSO Reduction Program Training

With technical assistance from outside consultants, staff provided customized training in northern and southern California for Regional Water Board staff in September 2008 that covered the requirements of the SSS WDRs and proper sanitary sewer system operation and maintenance. Class curriculum included training on the requirements of the SSS WDRs, conducting audits of sanitary sewer systems, evaluating SSMPs, and responding to and investigating SSOs. Additional advanced training classes are planned for development and will be presented, as staff time permits, to representative State and Regional Water Board staff in the future.

E. SSO Incident Maps

As part of the public spill reports, staff developed GIS spill incident maps and made them available to the public in May 2009. The spill incident maps are updated daily and depict SSO and PLSD incidents that have been reported to CIWQS by enrollees. The spill maps include spills from sanitary sewer systems only and do not include spills from wastewater treatment plants. The GIS maps serve to implement California Water Code section 13193 which requires the State Water Board to make reports available to the public using GIS maps where possible.

In addition, the GIS maps support the State Water Board's Strategic Plan goal of communicating public information regarding California water quality in an easily understood form. The mapping tool incorporates numerous recommendations from external users including the capability to search for spills by spill date, spill size, enrolled agency, county, Regional Water Board, and spill street address. Future enhancements are planned and will be made as staff time permits. Figure 1 is a screen shot of the incident map for SSOs illustrating certified spill incidents in CIWQS entered by enrollees in Fiscal Year 2012-2013.

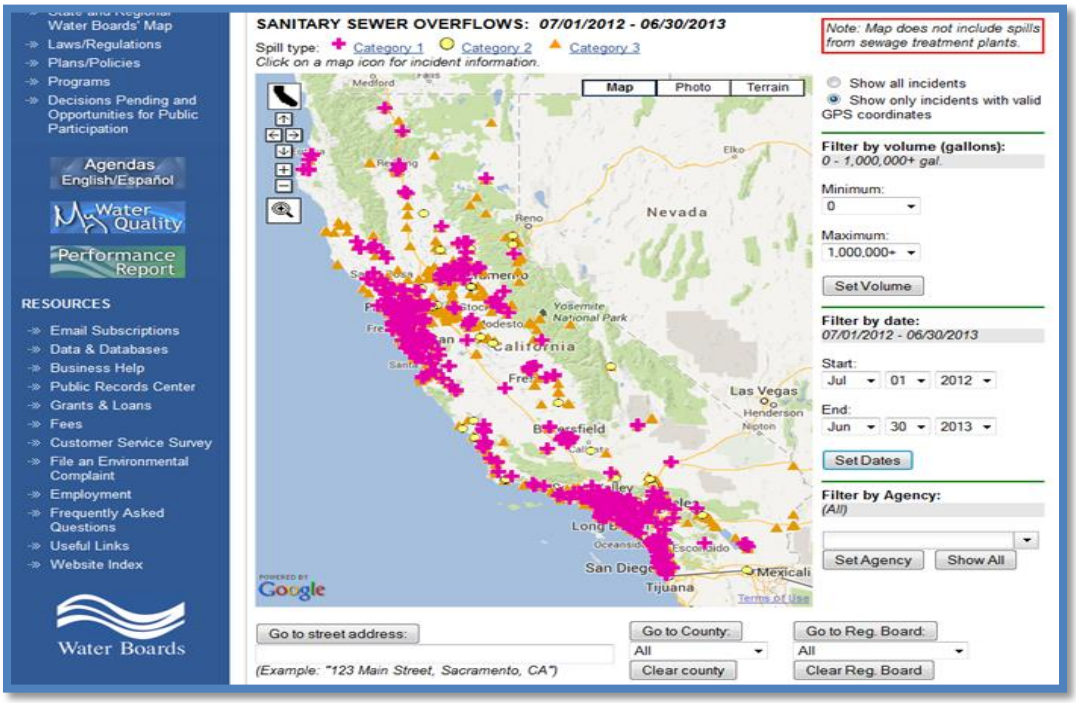


Figure 1 – SSO GIS Incident Map

F. Enforcement of the SSS WDRs

Between September 2007 and July 2013, State and Regional Water Board staff increased enforcement of the SSS WDRs as illustrated on Figure 2.

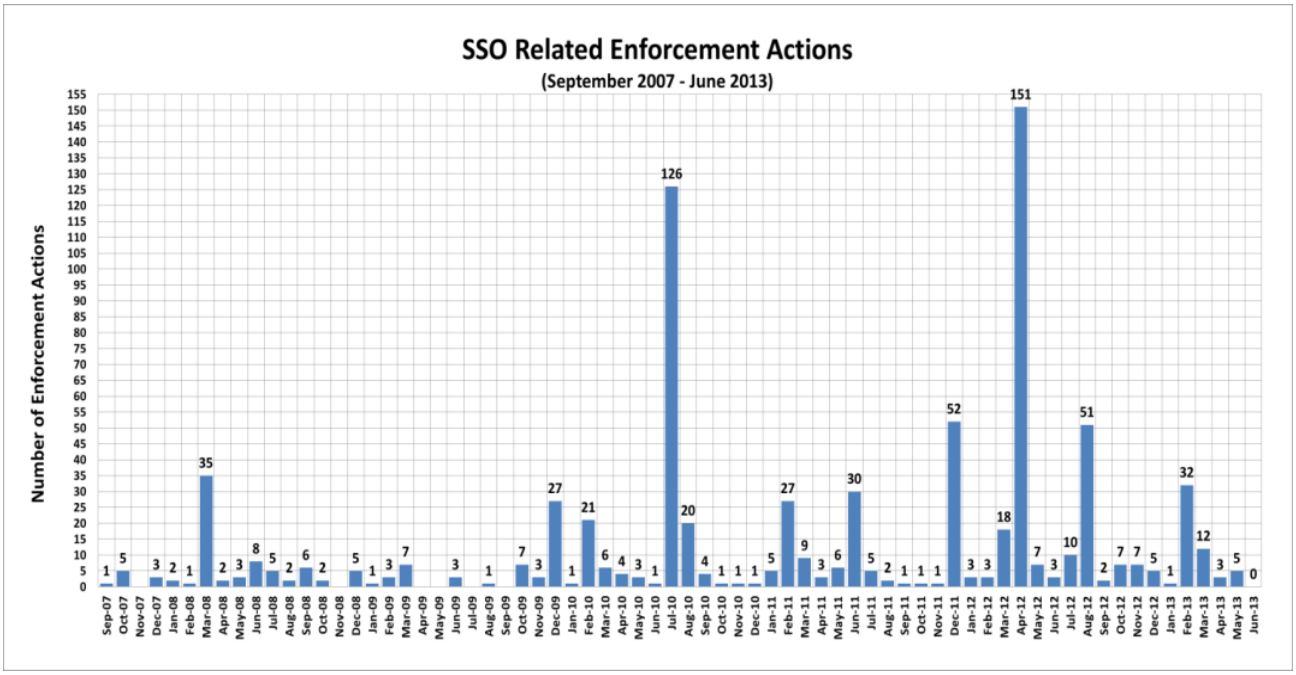


Figure 2 – SSO Enforcement Actions

To ensure a fair and consistent approach to achieve statewide compliance, State Water Board staff implements the Sanitary Sewer Overflow Reduction Program Compliance and Enforcement Plan. This plan identifies the specific enforcement actions to be undertaken to comprehensively address noncompliance with the SSS WDRs.

Current compliance and enforcement tasks are focused on addressing violations of the SSS WDRs in the following areas:

1) Evaluating compliance and implementing enforcement actions for failing to provide required reporting elements (i.e., failure to participate), and
2) Evaluating the accuracy and completeness of required reporting elements via facility inspections.

Evaluating compliance and implementing enforcement actions are handled solely by State Water Board staff. Evaluating reporting requirements is addressed jointly by State and Regional Water Board staff through sanitary sewer system inspections. Due to limited staff resources, enforcement tasks for the Sanitary Sewer Overflow Reduction Program are implemented in the following three phases:

- **Phase I –** During Phase I, staff identified agencies not meeting the basic program participation requirements (e.g., enrollment, reporting, and SSMP development) and conducted enforcement actions to bring the identified noncompliant agencies into compliance. Staff will continue to address non-compliant enrollees by providing compliance assistance, issuing NOVs, and, where necessary, applying additional enforcement actions. Additional information on enforcement actions is discussed in section G below.

- **Phase II –** In Phase II, staff is addressing enrollees with deficiencies to the reporting and implementation requirements of the SSS WDRs. Staff continues to implement the automated email system developed in Fiscal Year 2011-2012 that identifies collection system specific deficiencies and sends an email reminder to deficient enrollees monthly. This tool is discussed in further detail in section G below.

- **Phase III –** Phase III includes evaluation of the completeness and accuracy of enrollee SSMPs and spill reporting. Staff plans to use targeted and random sanitary sewer system inspections in this phase.

G. Enforcement Activities

On July 20, 2010, staff sent 119 Notices of Violation (NOVs). These NOVs were aimed at enrolled agencies that failed to meet the MRP requirements and failed to complete their SSMPs on time. Of the 119 enrollees that received the NOVs, 18 submitted Notices of Non-Applicability (NONs), 83 resolved the deficiencies and returned to compliance, and 18 enrollees were non-responsive and subsequently referred to the Office of Enforcement for further enforcement action. The Office of Enforcement has been working with the referred enrollees to bring them into compliance by providing compliance assistance and applying additional enforcement actions to non-responsive enrollees.

In addition, on April 10, 2012, staff sent 148 NOVs to agencies that failed to timely certify in CIWQS that they had developed the required SSMP elements. The NOVs directed the agencies to complete their SSMPs and certify in CIWQS that all the elements have been developed and approved by their governing board. Per the State Water Board's Enforcement Policy, the NOVs gave small and disadvantaged communities additional time to come into compliance.

To date, 128 enrollees have completed and certified all elements of their SSMPs, 13 have completed and certified some elements of their SSMPs, and seven have not completed and certified any of the elements of their SSMPs. Out of the 20 enrollees that have completed some elements or have not completed any elements of the SSMP, eight have submitted completion schedules or requested

additional time to comply. Staff referred the remaining 12 non-responsive enrollees to the Office of Enforcement for further enforcement action, which is pending.

In addition, the automated email reminder system developed in Fiscal Year 2011-2012 continues to be implemented, Email reminders are sent to enrollees with minor reporting deficiencies identified in CIWQS. The automated email system identifies CIWQS reporting deficiencies for each enrolled sanitary sewer system (e.g., uncertified spill reports, uncertified SSSMP element, etc.) and sends an automatic monthly email reminder detailing the reporting deficiencies. The automated email system also sends courtesy reminders to enrollees as their sanitary sewer system questionnaire yearly update approaches the due date.

Staff is evaluating non-responsive agencies with minor reporting deficiencies and will pursue additional enforcement action against enrollees who fail to: 1) complete and annually update the sanitary sewer system questionnaire; 2) certify development of SSMP elements; and 3) submit monthly no-spill certifications or enter SSO spill reports each month. Since program inception, Office of Enforcement and Regional Water Board staff has conducted 103 inspections and 50 record audits throughout the state. The inspections included a mix of small, medium, and large sanitary sewer systems. The basis for selection of sanitary sewer systems inspected included referral by Regional Water Board staff, enrollees having numerous and/or large SSOs (e.g., 50,000+ gallon SSOs), enrollees failing to complete routine required reporting, suspect reporting, and complaints from the public.

State Water Board, Office of Enforcement, and Regional Water Board staff conducted 23 inspections in Fiscal Year 2012 – 2013. The inspections were conducted throughout California and targeted small to large sanitary sewer systems. Enforcement actions against some enrollees are pending. In Fiscal Year 2012 – 2013, Regional Water Board staff took 137 enforcement actions for violations, in whole or in part, related to the Statewide SSS WDRs. A summary of the enforcement actions taken by the Regional Water Boards using data since the last annual report was issued is presented in Table 1 below.

Table 1 – Enforcement Actions by Regional Water Board for Fiscal Year 2012 -2013 (*Revised*)

Row Labels	13267 Letter	Notice of Violation (NOV)	Adimistrative Civil Liability (ACL)	Cease and Desist Order (CDO)	Staff Enforcement Letter (SEL)	Verbal Communication (VER)	Grand Total
North Coast	2		1				3
San Francisco Bay		4	1	2			7
Central Coast		2	1				3
Los Angeles	3	10	1				14
Central Valley - Fresno	1	24					25
Central Valley - Redding		3					3
Central Valley - Sacramento		56					56
Lahotan - Tahoe			1		2	1	4
Lahotan - Victorville		2		1			3
Colorado River Basin			1				1
Santa Ana			1		1		2
San Diego	1		3		12		16
Total	7	101	10	3	15	1	137

H. Sanitary Sewer Systems WDRs Review and Update

The review and update of the SSS WDRs was initiated in September 2009 and culminated with a decision by the State Water Board, at a workshop on January 24, 2012, to update the MRP for the SSS WDRs for Executive Director approval. Staff worked with key stakeholders to revise the MRP and shared the draft MRP with all stakeholders registered on the Lyris email list for the SSO Reduction Program. Staff solicited public comments in January and March 2013 and considered all comments received in developing the revised MRP. The following is a summary of major updates made to the MRP (Order 2008-0002-EXEC) and incorporated in the final revised MRP (Order 2013-0058-EXEC), signed by the Executive Director on July 30, 2013 with an effective date of September 9, 2013:

1) Spill notification requirements were revised to require enrollees to notify only the California Office of Emergency Services (Cal OES) for spills of 1,000 gallons or more to surface water. Cal OES notifies the Regional Water Boards and local Health Departments when a spill notification is received. Enrollees are also required to update Cal OES when there are substantial changes to previously reported spill volume estimates or impacts. Previously, enrollees were required to notify Cal OES for spills to surface water of any volume. In addition, enrollees were required to notify their Regional Water Board and local Health Department resulting in multiple notifications being received for individual spills.
2) New spill categories were established and spill report forms were refined. Spill Categories 1 and 2 were replaced with Categories 1, 2, and 3. Spills are now classified as follows:
    - Category 1 – Spills of any volume that reach surface water.
    - Category 2 (formerly Category 1) – Spills greater than or equal to 1,000 gallons that do not reach surface water.
    - Category 3 (formerly Category 2) – Spills less than 1,000 gallons that do not reach surface water.

    All spills to surface water are now in a distinct category with this change. Spill reporting fields were refined and streamlined with stakeholder input.
3) Enrollees are now required to submit a technical report within 45 days of the end date of spills to surface water where over 50,000 gallons are spilled.
4) Enrollees are now required to develop a Water Quality Monitoring plan to be implemented within 48 hours of becoming aware of SSOs where 50,000 gallons or more are spilled to surface water.
5) Enrollees are now required to submit an electronic copy of their SSMP to the State Water Board or provide the web address where their SSMP is posted.

Staff conducted outreach activities through the representative organizations (e.g., CWEA, CVCWA, etc.) regarding the changes to the MRP and the SSO database. Staff has coordinated with CWEA to provide three workshops in Northern, Central, and Southern California. The workshops consisted of two sessions that focused on the changes to the MRP and the SSO Database. In total, 171 participants attended the three workshops. State Water Board staff plans to provide additional training to Regional Water Board staff and enrollees as needed. In addition to this outreach, staff has developed and released, with stakeholder input, a document to provide step-by-step guidance on how to use the SSO Database. The Enrollee's Guide to the SSO Database can be found at: http://www.waterboards.ca.gov/water_issues/programs/sso/docs/discharger_workbook.pdf

3.0 SSS WDRS COMPLIANCE SUMMARY

The following section provides an update on enrollee participation compliance. Measures of enrollee participation include enrolling for coverage under the SSS WDRs, completing required monthly reporting elements, completing required SSMP development and certification, and completing and annually updating their sanitary sewer system questionnaire.

A. Enrollment for Coverage

All public agencies that own or operate sanitary sewer systems consisting of more than one mile of pipe that collect and/or convey, directly or indirectly via other connected sanitary sewer systems, untreated or partially treated wastewater to a publicly owned wastewater treatment facility are required to apply for coverage under the SSS WDRs. Since implementation of the SSS WDRs, the number of enrolled sanitary sewer systems has varied between 1,080 and 1,100. Currently, 1,093 sanitary sewer systems are enrolled for coverage. As illustrated in Figure 3, the Central Valley Water Board (Sacramento office) has the highest number of enrolled sanitary sewer systems with 183, followed by the Central Valley Water Board (Fresno office) with 156 systems enrolled and the Los Angeles Water Board with 144 systems enrolled.

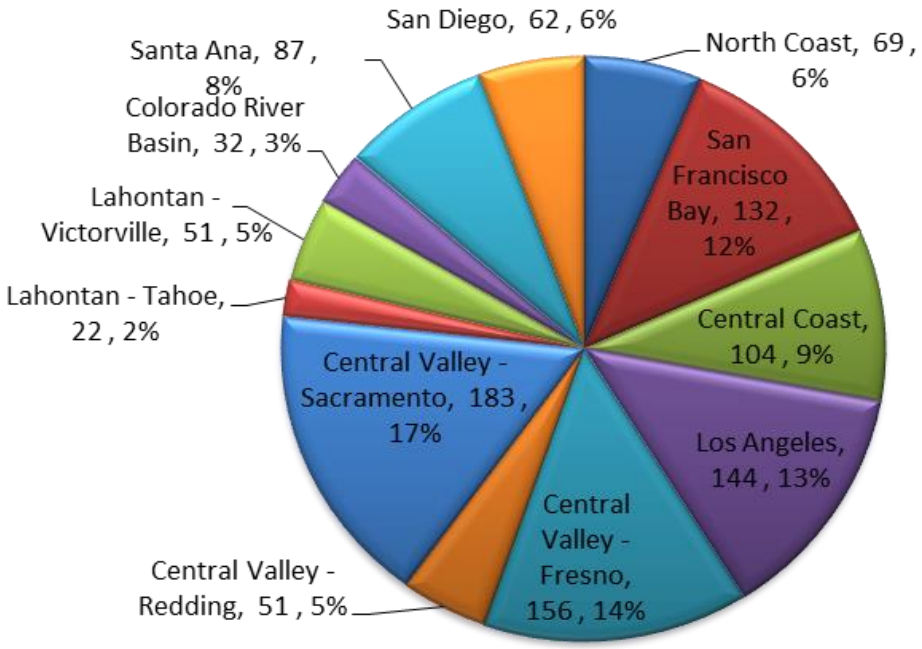


Figure 3 – Number and Percentage of Enrolled Sanitary Sewer Systems by Regional Water Board

The number of enrollees in the state varies due to new applications being received for coverage and cancellations of enrollment. Reasons for cancellations of enrollment include: 1) an agency enrolled erroneously and later determined it did not meet the application criteria (i.e., it does not own greater than one mile of publicly owned sewer pipe) and 2) redundant enrollments due to submittal of multiple applications.

Since June 30, 2012, twelve new enrollees applied for coverage under the SSS WDRs. Staff occasionally receives notifications from Regional Water Boards and other sources regarding sanitary sewer systems required to be covered under the SSS WDRs that are not enrolled. Staff follows up on these notifications with enforcement activities as previously described in section 2.F.

B. SSO Reporting

Enrollees are required to report all SSOs that occur in their sanitary sewer system assets. If there are no SSOs during a calendar month, the enrollee is required to submit a No-Spill Certification in the CIWQS SSO database. Monthly SSO reporting compliance rates are calculated by tallying how many individual enrollees submitted either an SSO report or no-spill certification for a given calendar month. Monthly reporting compliance by Fiscal Year is shown in Figure 4.

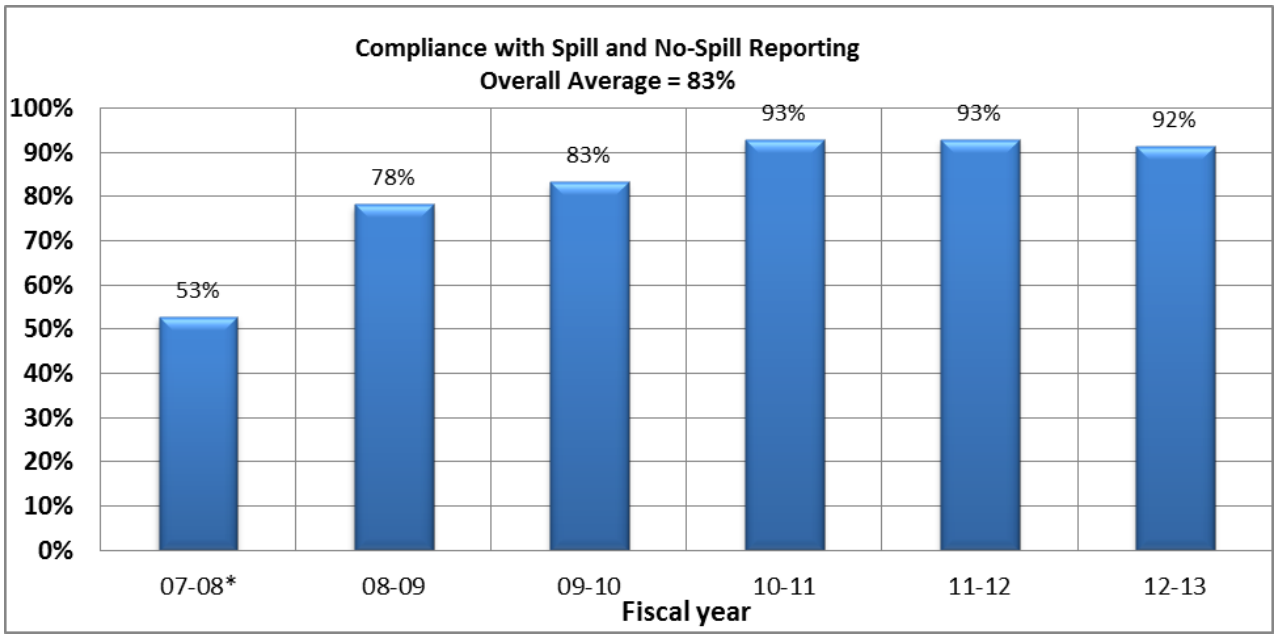


Figure 4 – Monthly Compliance with Spill and No-spill Reporting by Fiscal Year

The average reporting compliance rate is 83 percent for the period of September 2007 to June 2013. The average monthly reporting compliance rate during Fiscal Year 2012-2013 is 92 percent. The monthly reporting compliance rate significantly increased over the past year. Staff concludes that increased compliance rates are a result of increased thoroughness of enrollees reporting, increased enforcement by the State and Regional Water Boards, and the automated monthly email compliance reminders.

The current average monthly reporting compliance rate of 92 percent is less than the target level of 100 percent and one percent lower than the rate during Fiscal Year 2011-2012. Enforcement activities described previously in section 2.F will continue to be conducted to improve this compliance rate. Non-compliant enrollees that are nonresponsive to compliance reminders and NOVs are referred to the Office of Enforcement for further enforcement action. In addition, the 12 new sanitary sewer systems that enrolled under the SSS WDRs in Fiscal Year 2012-2013 increased the number of enrollees from 1081 to 1093. Some of the new enrollees have not “back reported” spills or no-spill certifications, which may also have contributed to the decrease in monthly compliance. Monthly compliance reporting has been maintained at higher than 90 percent for the past three fiscal years however, during Fiscal Year 2012-2013, only 45 percent of enrolled sanitary sewer systems in the state reported an SSO. As illustrated in Figure 5, 600 enrollees (approximately 55 percent) did not have any spills in Fiscal Year 2012-2013.

For the period of January 2007 to June 2013, 802 (i.e., approximately 73 percent) enrollees reported one or more SSOs while 291 enrollees (i.e., approximately 27 percent) did not report an SSO. The monthly reporting performance for those enrollees that did not report an SSO during Fiscal Year 2012-2013 is illustrated in Figure 6. One hundred and thirty seven of these enrollees (approximately 23 percent) missed all monthly reporting, missed some monthly reporting, or have

some reporting errors (e.g., submitted “no-spill” certification when they had SSOs); whereas 463 of the enrollees (approximately 77 percent) with no reported SSOs complied fully with the required monthly reporting.

For the period of January 2007 to June 2013, 127 (i.e., approximately 44 percent) enrollees missed all monthly reporting, missed some monthly reporting, or have some reporting errors (e.g., submitted “no-spill” certification when they had SSOs); whereas 164 of the enrollees (i.e., approximately 56 percent) with no reported SSOs complied fully with the required monthly reporting.

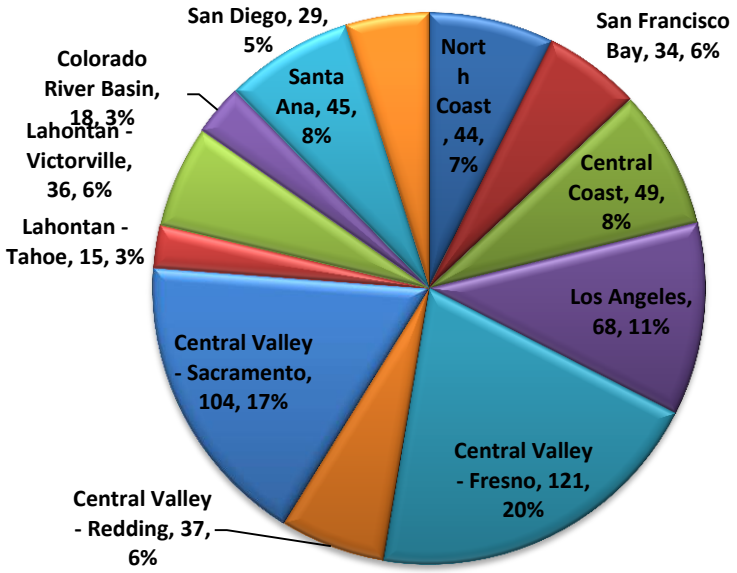
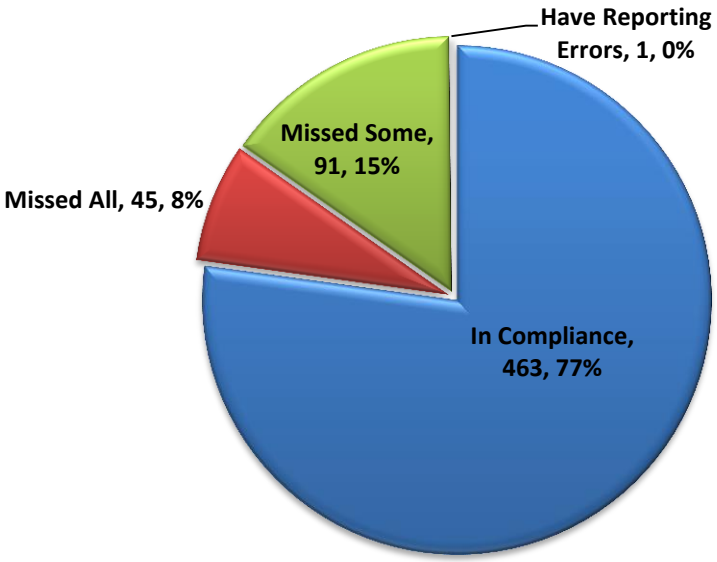


Figure 5 – Percentage and Number of Enrollees with No SSOs Reported by the Regional Water Boards in Fiscal Year 2012-2013



Note: Reporting errors include, filling a "No-spill" certification when the enrollee had a public SSO spill, submitting duplicate "No-spill" certifications, not submitting a "No-spill" certification, or not submitting an SSO.

Figure 6 – Monthly Reporting Performance of Enrollees with No SSOs Reported in Fiscal Year 2012-2013

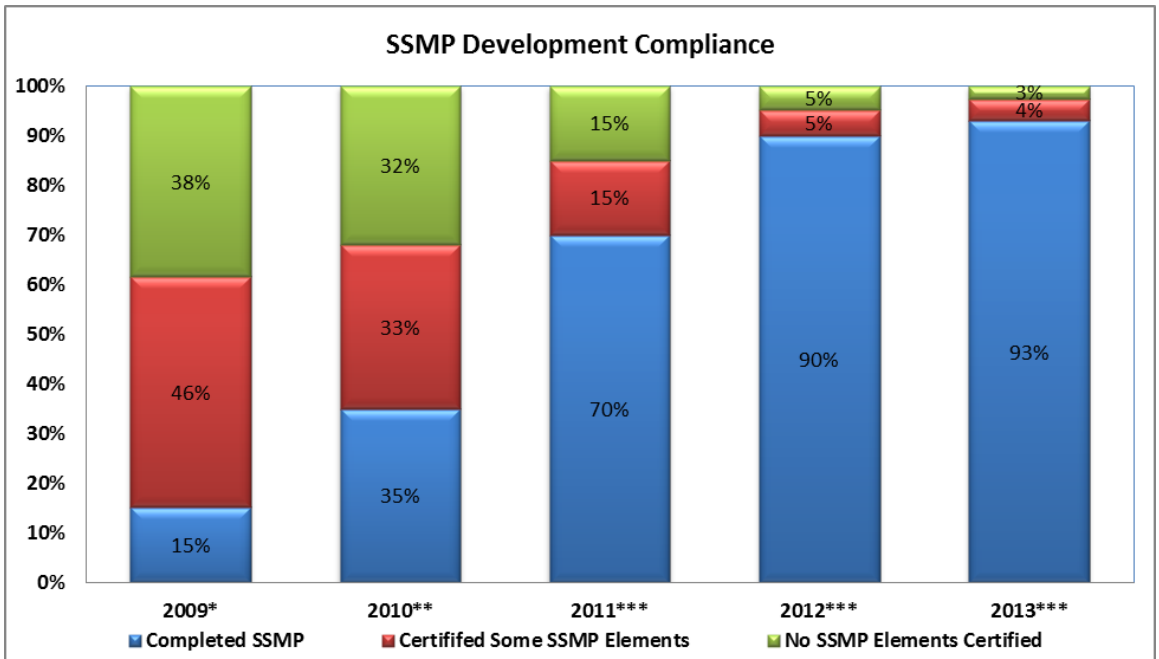
C. SSMP Development and Certification

Enrollees are required to certify that their final SSMPs have been developed within the time frames specified in the SSS WDRs. This certification is submitted electronically in the SSO database. Enrollees are required to obtain their governing boards' (or equivalent) approval at a public hearing for the final SSMP certification and for SSMP re-certification. Enrollees do not send their SSMP to the State or Regional Water Boards for review or approval, but must make it publicly available, and upload an electronic copy to the SSO database or provide a link to the enrollees' website where the SSMP is posted.

The CIWQS online certification system for the SSMP provides State and Regional Water Board staff the ability to evaluate compliance of enrollees with SSMP development deadlines. SSMP development compliance by year is illustrated in Figure 7. The status of enrollee SSMP certification as of June 2013 is as follows:

1) All enrollees (i.e., 1093) were required to have their SSMPs fully developed as of August 2, 2010.
2) Ninety-three percent of enrollees (i.e., 1016) completed all SSMP elements (includes those completed late in addition to on-time SSMPs).
3) Four percent of enrollees (i.e., 49) certified some but not all of their SSMP elements.
4) Of the ninety-seven percent (1065) enrollees that completed all or some of the SSMP elements, twenty percent (i.e., 218) met all SSMP certification deadlines.
5) Three percent of enrollees (i.e., 28) did not certify any of their SSMP elements, which are now past due.

Staff and the Office of Enforcement are conducting activities described in sections 2.F and 2.G to improve the SSMP compliance rates.



Notes: * Data used for 2009 - 91 % had elements for which certification was not yet due.
** Data used for 2010 - 39% had elements for which certification was not yet due.
*** Data used for 2011 - All SSMP elements were due.

Figure 7 – SSMP Development Compliance by Year

D. Sanitary Sewer System Questionnaire

The SSS WDRs require enrollees to complete a sanitary sewer system questionnaire and update it every 12 months. The sanitary sewer system questionnaire is a summary of each enrollee's organization, sanitary sewer system management resources, and sanitary sewer system assets. Enrollees are required to submit information including operating and capital expenditure budgets, miles of pipe, number of employees, and population served. The purpose of this questionnaire is to put the enrollee's SSMP and reported SSOs into context with organizational and facility characteristics. This is important because these characteristics have a significant impact on how an enrollee operates and maintains its sanitary sewer system. For example, population served represents the size of the rate paying base an enrollee has available from which to collect fees to operate and maintain the sanitary sewer system.

Currently, 96 percent of enrollees (i.e., 1045) have completed the sanitary sewer system questionnaire and updated it annually, two percent (i.e., 30) have completed the questionnaire but have failed to annually update it, and two percent (i.e., 18) of enrollees have never completed the questionnaire. Compliance with the sanitary sewer system questionnaire has increased in Fiscal Year 2012-2013 as illustrated in Figure 8. Compliance and enforcement assistance activities described in section 2.F are conducted to improve the questionnaire compliance rates. For compliance assistance, email reminders are now sent to each enrollee one month before their yearly questionnaire update is due.

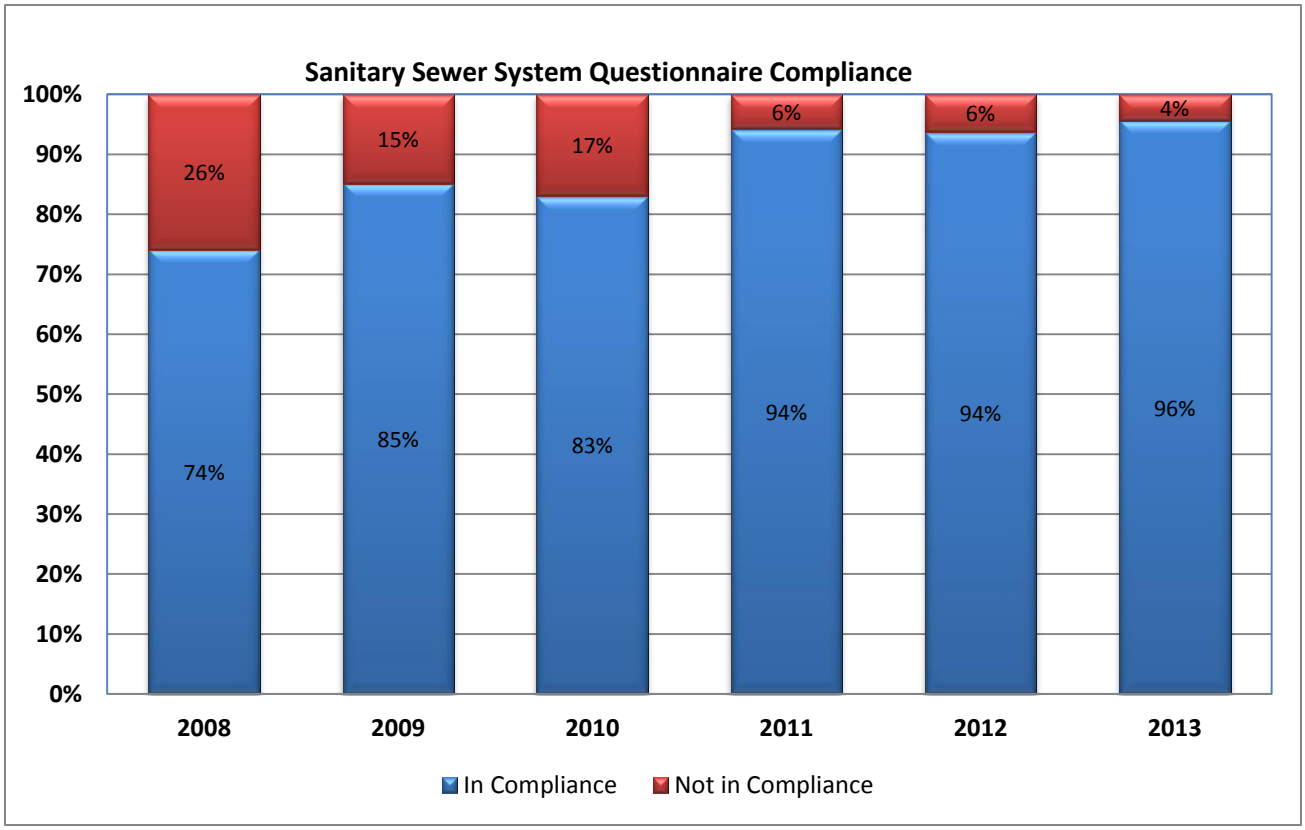


Figure 8 – Sanitary Sewer System Questionnaire Compliance by Year

4.0 SPILL DATA SUMMARY

A. Statewide Reported Spill Data

The SSS WDRs prohibit all SSOs that reach surface water or cause a nuisance as defined in California Water Code section 13050(m)(2). A summary of statewide SSO data reported by enrollees since reporting requirements became effective on January 2, 2007 and for Fiscal Year 2012-2013 are presented in Table 2 below

State Water Board staff conducts checks to ensure the accuracy of the approximately 33,800 enrollee-entered spill records. When erroneous data are identified, the enrollee responsible for the data entry error is contacted and requested to correct it. The data summaries presented in Table 2 below are from analyses of spill data submitted by enrollees. Staff is examining additional metrics as ongoing data cleanup by enrollees is completed, efforts to improve the reporting database are implemented, and additional data are collected.

Table 2 – Overall and Fiscal Year 2012 – 2013 Statewide SSO Data

	Jan 2007 - Jun 2013	FY 2012 - 2013
Number of SSOs	33,824	4,840
Total Volume of SSOs (gallons)	137,553,903	9,062,065
Total volume Recovered (gallons)	27,018,078	2,202,282
Total Volume Reached Surface Water (gallons)	109,029,155	6,011,527
Percent Recovered	20%	24%
Percent Reached Surface Water	79%	66%
Total Miles of Pressure Sewer	3,311	3,311
Total Miles of Gravity Sewer	94,231	94,231
Total Miles of laterals Responsible	13,051	13,051
SSOs per 100 miles per year	4.71	4.38
Volume of SSOs per 100 miles per year	19,135	8,194

Overall SSO Reduction Program performance from January 2, 2007, when the first SSS WDR enrollees were required to start reporting, to June 30, 2013, is illustrated in Figures 9 and 10. Figure 9 illustrates a seasonal pattern with more SSOs occurring during the wet seasons. From January 2008 to the present, a general downward trend in the number of spills occurring during all seasons is evident.

Figure 10 illustrates the seasonal pattern with respect to spill volumes and statewide average precipitation. The total number of spills and spill volume were significantly lower during the 2008/2009 wet season. The reason for the low wet season spill volume in 2008/2009 could not be determined. Spill volumes rose during the 2009/2010 wet season, significantly increased during the 2010/2011 wet season, and decreased during the 2011/2012 wet season. The spill volume decreased during the 2012/2013 wet season. This may be due to only 73 percent of normal precipitation during the wet weather season of October 1, 2012 through September 30, 2013.

The increase in spill volume during wet seasons is likely caused by excessive inflow and infiltration and/or inadequate sizing of sanitary sewer systems. The annual variation in wet season spill volume appears to be correlated with the annual variation in wet season precipitation with more spills and higher volumes generally correlating to higher average statewide annual precipitation.

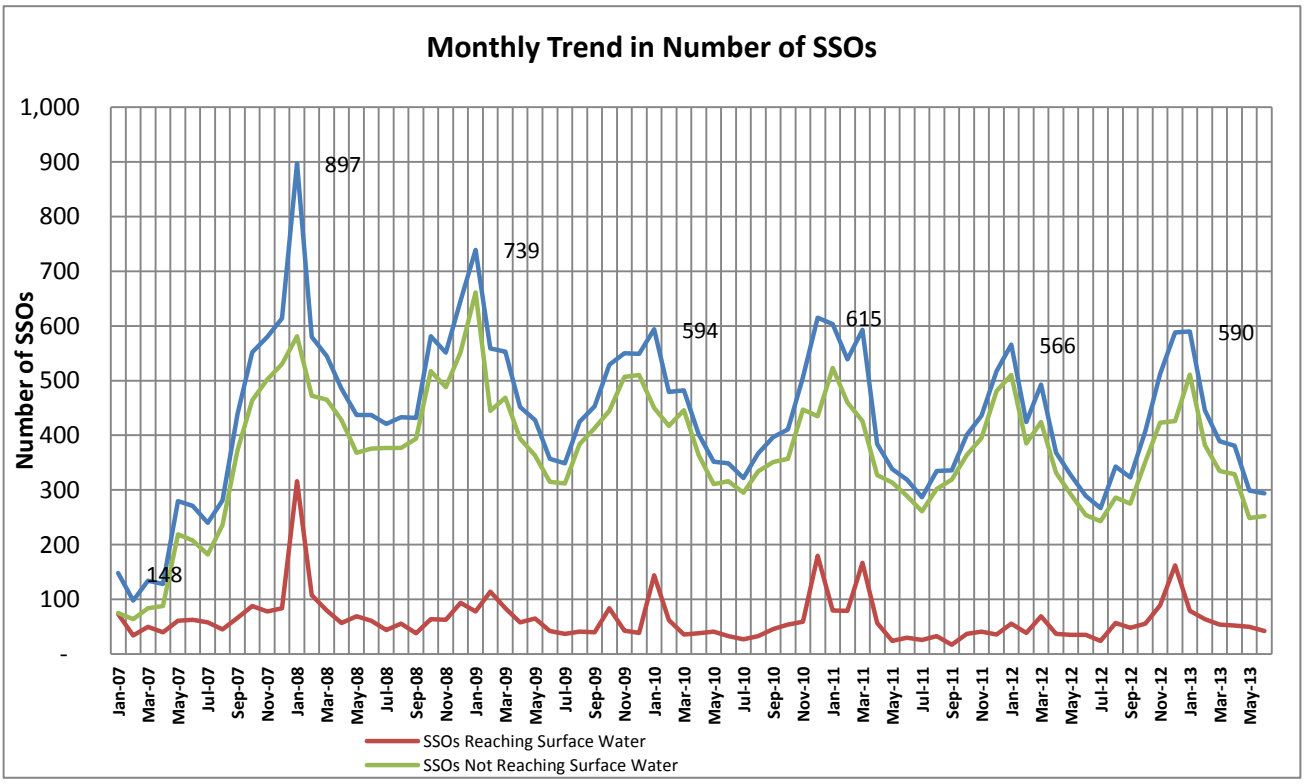


Figure 9 – Monthly Trend in Number of SSOs

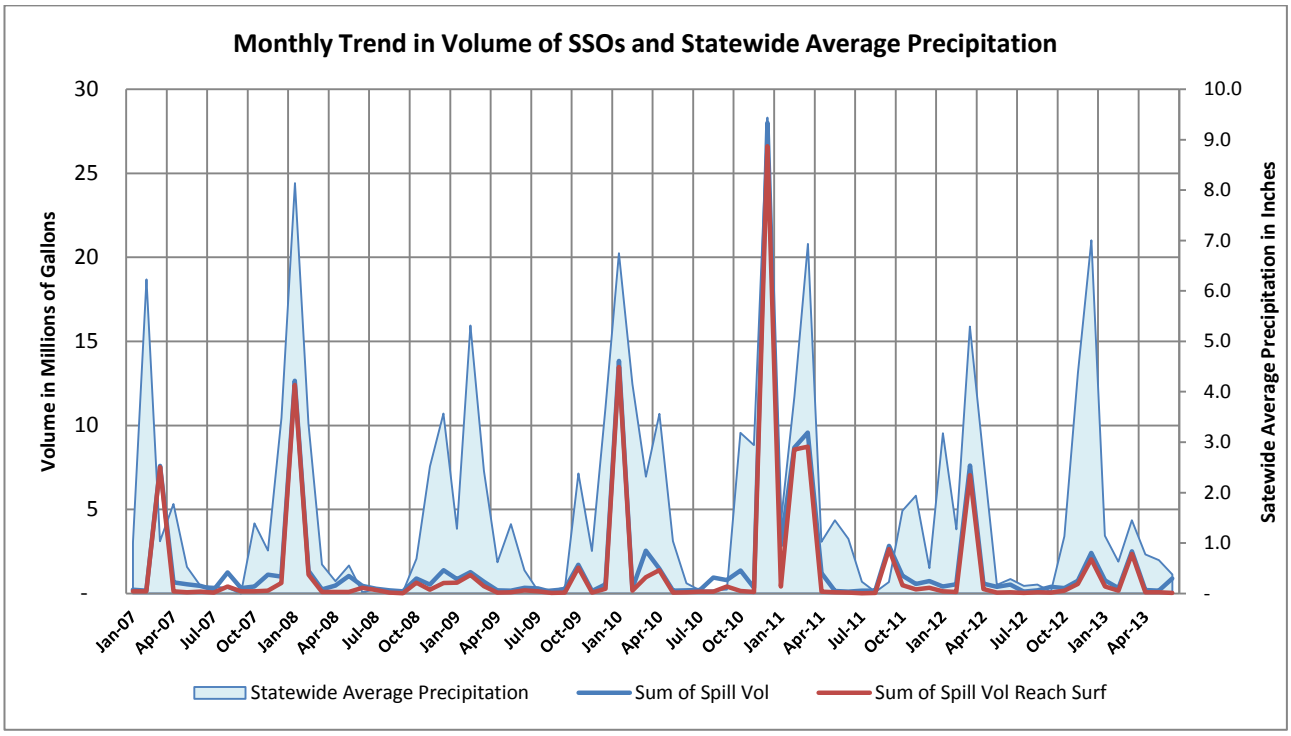


Figure 10 – Monthly Trend in SSO Volume and Statewide Average Precipitation

B. SSO Spill Trends for Fiscal Year 2012-2013

As illustrated in Figure 11, approximately 91 percent of all SSOs in the state are less than 1,000 gallons. Of the reported SSO volume spilled in the state, approximately 82 percent of the total volume is from only about 1.7 percent of the SSO events as illustrated in Figures 11 and 12. Therefore, only about one fifth or 18 percent of the reported volume of SSOs in the state result from the majority of SSO events (i.e., approximately 98.3 percent of SSOs).

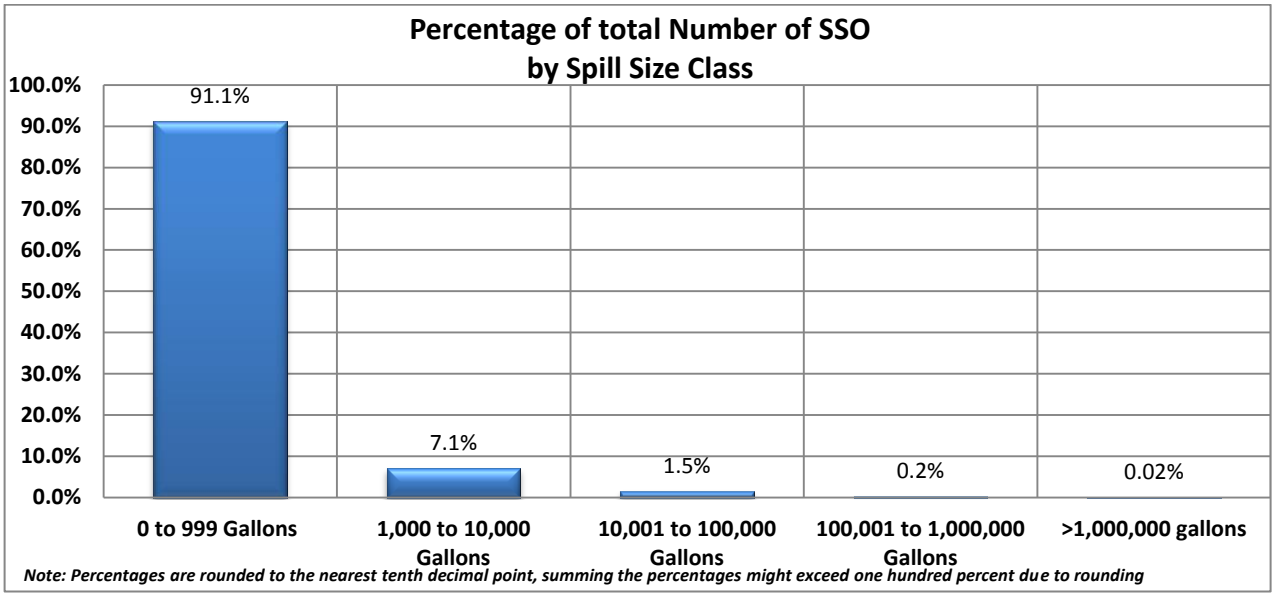


Figure 11 – Percentage of Total Number of SSOs by Spill Size Class for Fiscal Year 2012-2013

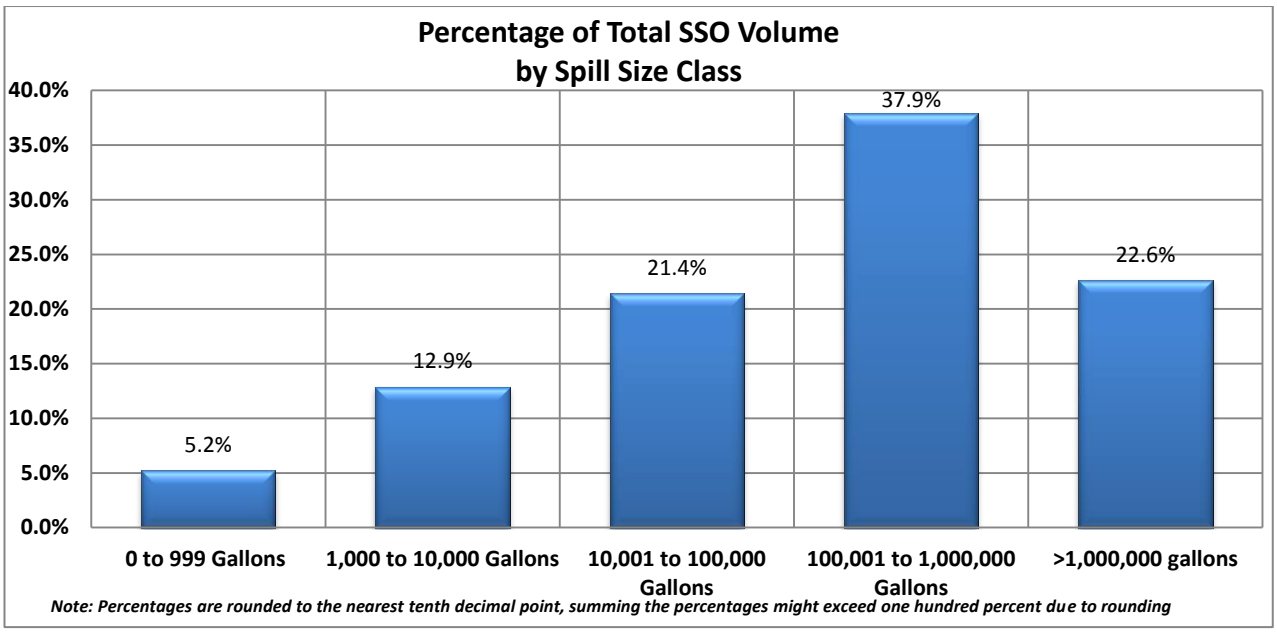


Figure 12 – Percentage Total of SSO Volume by Spill Size Class for Fiscal Year 2012-2013

The percentage of reported SSOs that reached surface water by spill size class is presented in Figure 13. Of 4,840 SSOs reported during Fiscal Year 2012-2013, 777 (approximately 16 percent) were reported to have reached surface water. Of these, 285 (approximately 63 percent) were less than 1,000 gallons. The majority of spills (approximately 84 percent) were reported as not reaching surface water.

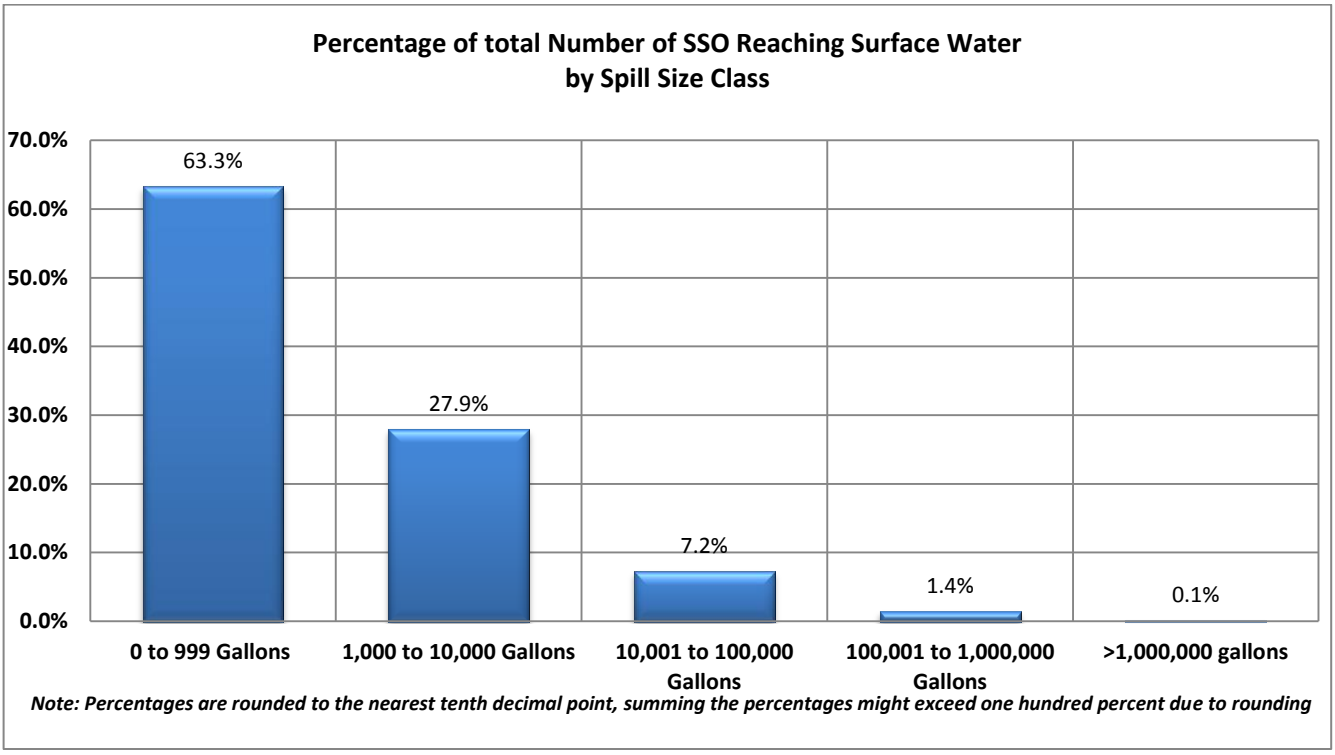


Figure 13 – Percentage of SSOs Reaching Surface Water by Size Class for Fiscal Year 2012-2013

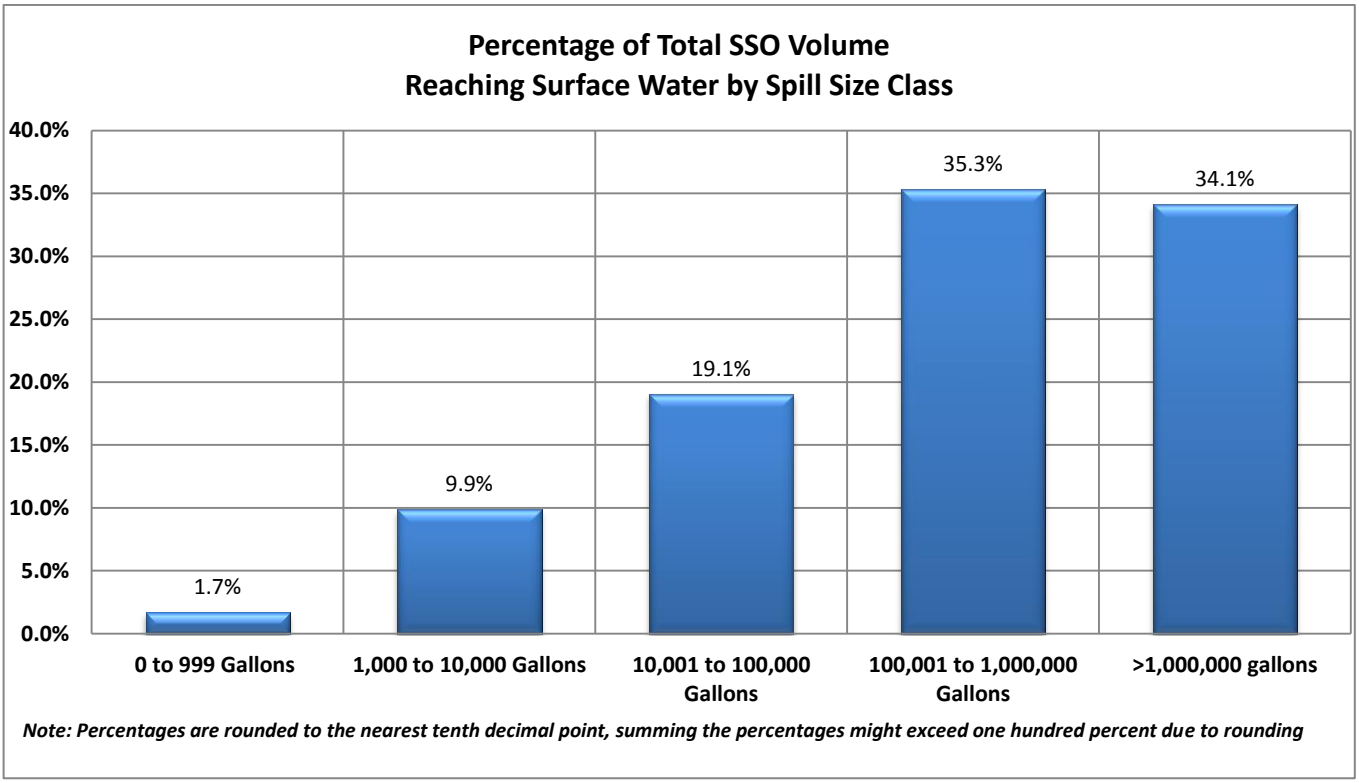


Figure 14 – Percentage of Total SSO Volume Reaching Surface Water by Spill Size Class for Fiscal Year 2012-2013

The percentage of SSO volume that reached surface water, categorized by spill size class, is illustrated in Figure 14. Comparing Figures 13 and 14, approximately 1.5 percent of spills reported to have reached surface water account for approximately 69 percent of the total volume spilled to

surface water since spill reporting was required. In addition, approximately 63 percent of the spills reported to have reached surface water account for only 1.7 percent of the spill volume that reached surface water during Fiscal Year 2012-2013.

The number of enrollees reporting SSOs to surface waters and the number of SSOs reaching surface waters since program 2007 are presented in Table 3. There is no discernible trend in the number of enrollees reporting SSOs to surface waters. However, there is a general decreasing trend in the number of SSOs reaching surface waters each Fiscal Year. These data trends remain unchanged over prior years and represent the overall "life of program" trend.

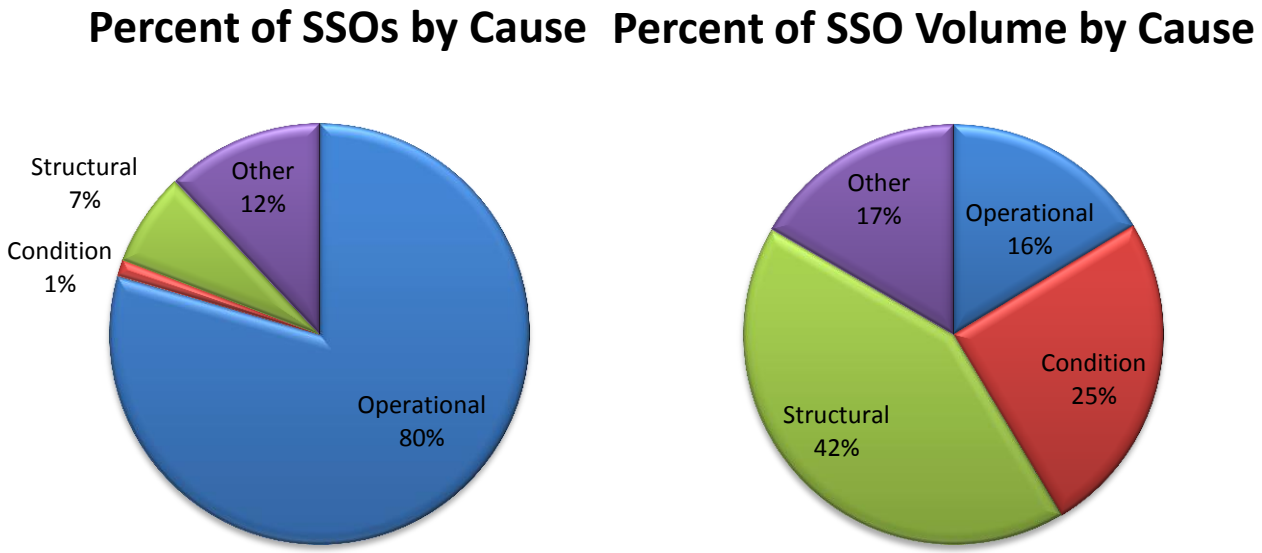
Table 3 - Number of Enrollees with SSOs to Surface Waters and Number of SSOs to Surface Water

Regional Water Board	FY 07-08		FY 08-09		FY 09-10		FY 10-11		FY 11-12		FY 12-13	
	Enrollees w/ SSOs Reaching Surface Water	SSOs Reaching Surface Water	Enrollees w/ SSOs Reaching Surface Water	SSOs Reaching Surface Water	Enrollees w/ SSOs Reaching Surface Water	SSOs Reaching Surface Water	Enrollees w/ SSOs Reaching Surface Water	SSOs Reaching Surface Water	Enrollees w/ SSOs Reaching Surface Water	SSOs Reaching Surface Water	Enrollees w/ SSOs Reaching Surface Water	SSOs Reaching Surface Water
North Coast	20	39	14	36	14	19	16	35	11	22	12	19
San Francisco Bay	74	458	65	274	60	252	63	316	48	172	72	285
Central Coast	26	55	17	34	25	41	26	70	19	26	31	57
Los Angeles	60	238	52	130	47	97	42	111	35	74	47	147
Central Valley - Fresno	11	30	12	25	9	30	16	40	9	13	11	51
Central Valley - Redding	8	16	9	16	7	13	8	11	5	7	5	10
Central Valley - Sacramento	38	80	35	101	34	73	33	87	27	57	29	68
Lahontan - Tahoe	1	1	1	2	3	4	2	2	2	5	2	2
Lahontan - Victorville	7	14	7	12	6	10	10	21	4	10	5	9
Colorado River Basin	2	3	4	4	2	2	2	7	1	1	6	7
Santa Ana	30	88	29	73	27	56	29	55	22	37	26	56
San Diego	26	82	24	92	21	43	24	79	14	29	23	66
Total	**303**	**1,104**	**269**	**799**	**255**	**640**	**271**	**834**	**197**	**453**	**269**	**777**
% of Total Enrollees Reporting/Spills Reported	**60%**	**18%**	**52%**	**13%**	**50%**	**12%**	**55%**	**16%**	**41%**	**10%**	**55%**	**16%**

C. Spill Causes for Fiscal Year 2012-2013

The percentages of total SSOs by spill causes for Fiscal Year 2012-2013 are presented in Figure 15. The data indicate that operational causes (root intrusion, grease deposition, and debris) remain as the primary causes of SSOs and are responsible for approximately 80 percent of all SSOs. In terms of volumes spilled, these causes resulted in only approximately 15 percent of the reported SSO volume for this time period. This trend remains unchanged from previous fiscal years and over the life of the program.

In addition, the data indicate that SSOs caused by factors related to system capacity (e.g., flow exceeded capacity) and structural issues (e.g., pipe structural failures, pump station failures) account for only approximately eight percent of the number of SSOs reported, but account for approximately 67 percent of the reported SSO volume.



NOTE: **Operational** – Includes, SSOs caused by Debris, FOG, Roots; **Condition** – Includes SSOs caused by flow exceeded capacity and Rain flow exceeded capacity; **Structural** – Includes, SSOs 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.

Figure 15 – Percent of SSOs and Total SSO Volume by Cause for Fiscal Year 2012-2013

D. Sewage Spills by Pipe Characteristics for Fiscal Year 2012-2013

Pipe Diameter – Reported SSO data indicate: (1) that many enrollees are not reporting the sewer pipe diameter in their reports (i.e., approximately 69 percent); and (2) that at least 89 percent of SSOs where pipe data are reported occurred in pipe sizes of eight inches or less. It is expected that smaller diameter pipes would be affected to a higher degree by the most common causes of SSOs (i.e., root intrusion, grease deposition, and debris). Increased thoroughness in reporting would help to clarify if there is any relationship between pipe diameter and SSOs. Pipe diameter is not a required field in the SSO reports

Pipe Material – Reported SSO data indicate: (1) that many enrollees are not reporting the pipe material in their reports (i.e., approximately 74 percent) and (2) that at least 60 percent of the SSOs where pipe material is reported occur in vitrified clay pipes (VCP). This result is likely due to the prevalence of VCP in sanitary sewer systems piping in the state. Increased thoroughness in reporting would help to clarify if there is any relationship between pipe material and SSOs. Pipe material is not a required field in the SSO reports.

Sewer Age – As illustrated in Figure 16, approximately 32 percent (i.e., approximately 34,000 miles) of the publicly owned sanitary sewer system piping in the state is older than 53 years. Since the age information was collected up to a year ago, the time periods have been offset one year.

In general, older sanitary sewer system pipes require more maintenance than newer segments of pipe and may be more prone to SSOs.

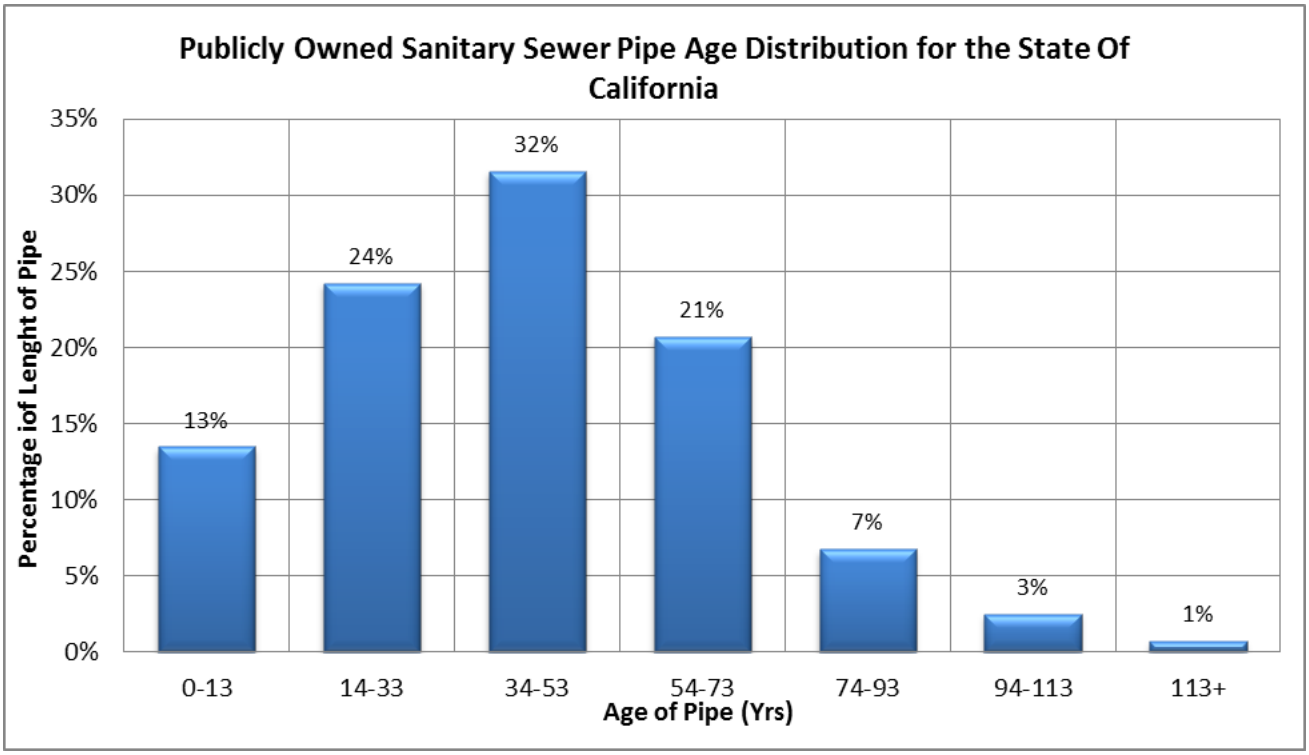


Figure 16 – Publicly Owned Sanitary Sewer Pipe Age Distribution for the State of California as of June 2013

E. Spill Rate Indices for Fiscal Year 2012-2013

Spill rate indices are normalized metrics of spill frequencies that allow for comparison of sanitary sewer systems of different sizes. The number of SSOs per 100 miles of pipe per year metric is used to compare the relative performance of enrollees and their sanitary sewer systems. This metric expresses the number of SSOs for every 100 miles of pipe or sewer lines owned by the enrollee per year (SSOs/100 mi/year). This spill rate metric is calculated as follows:

$$= \left(\frac{\#of\ \ SSOs\ \ per\ Year}{Total\ \ miles\ \ pipe\ responsible} \right) \times 100\ miles$$

This metric is one indicator of an enrollee's overall sanitary sewer system performance and can provide insight into its management, operations, and maintenance practices. A well-managed and maintained system with adequate capacity can be expected to have a lower spill rate than a poorly managed system or a system with inadequate capacity.

It is important to consider the type of sanitary sewer system (e.g., municipal, prison, school, etc.) and the size of the sanitary sewer system when examining spill rate indices for comparing sanitary sewer system performance. As illustrated in Figure 17, of the 1,093 enrolled sanitary sewer systems, approximately 84 percent (i.e., 923) serve municipalities and approximately16 percent (i.e., 170) serve other public entities including airports, hospitals, military facilities, parks, ports, prisons, and schools. The distribution of municipal sanitary sewer systems by system size in miles of publicly owned pipe is illustrated in Figure 18.

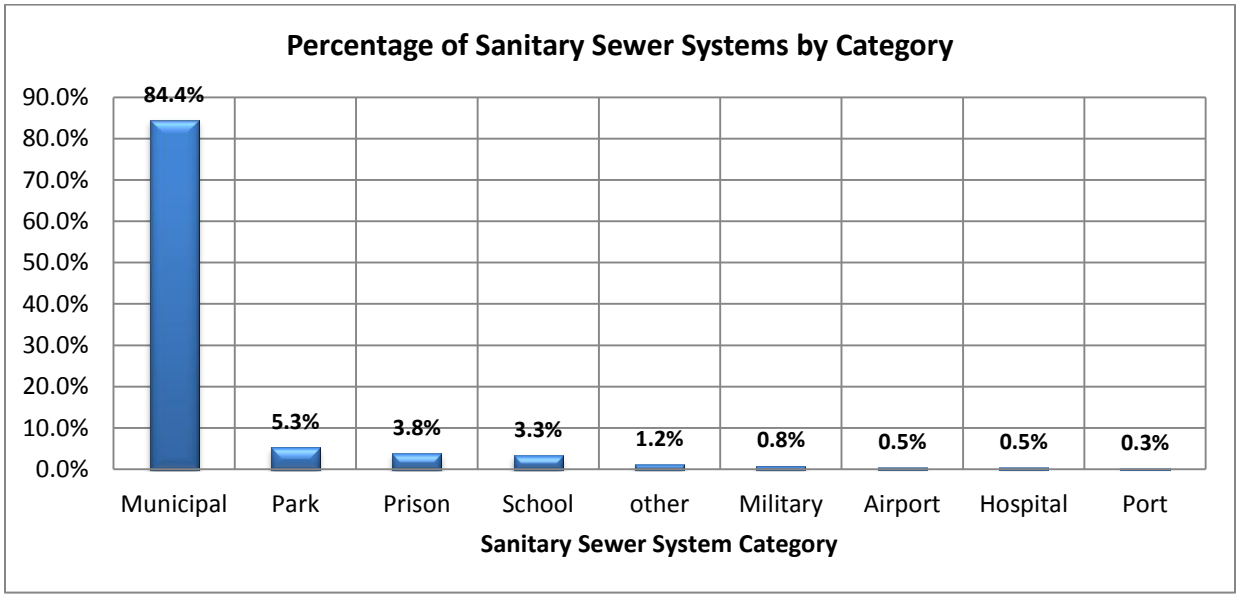


Figure 17 – Percentage of Enrolled Sanitary Sewer Systems by Category

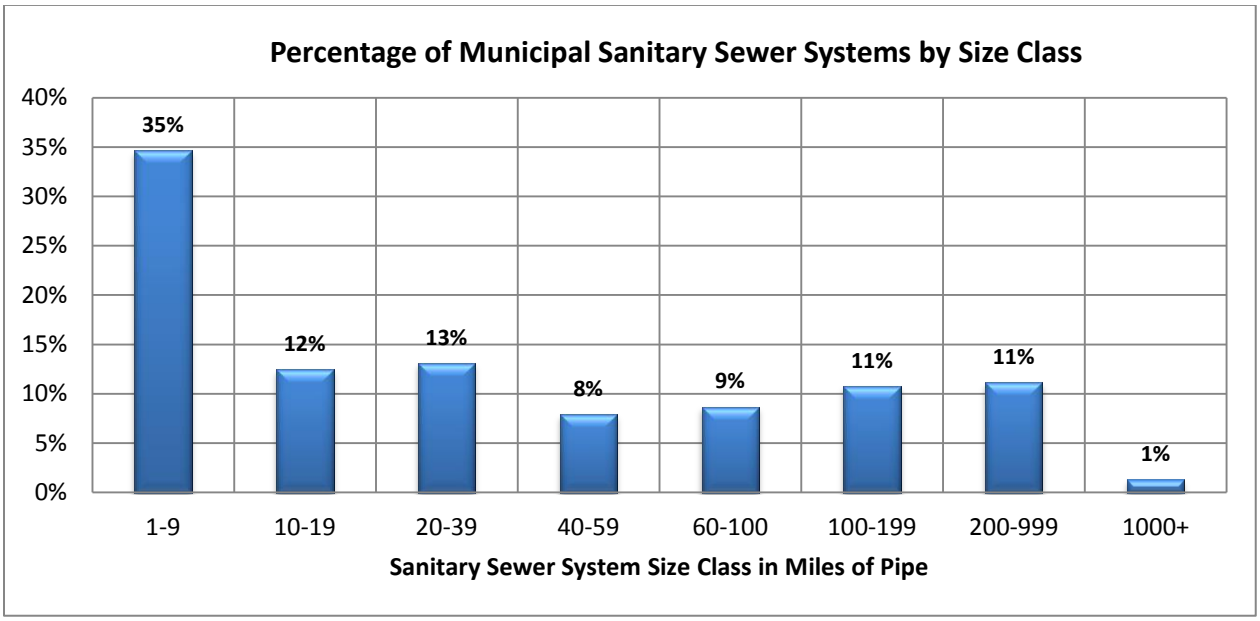


Figure 18 – Percentage of Enrolled Municipal Sanitary Sewer Systems by System Size

The spill rates for enrolled municipal sanitary sewer systems grouped by system size class in miles of publicly owned pipe is illustrated in Figure 19. Municipal sanitary sewer systems were grouped based on the miles of sewer pipe owned into size classes. For example all municipal sanitary sewer systems that owned 1-9 miles of sewer pipe were grouped in the “1-9” size class. The statewide average spill rate for municipal sanitary sewer systems in Fiscal Year 2012-2013 is 9 (nine). Sixteen SSOs/100mi/year and the statewide median spill rate is 3.79 SSOs/100mi/year.

As illustrated in Figure 19, small municipal sanitary sewer systems with fewer than 20 miles of pipe generally have spill rates above the state average for municipalities. This trend is a reflection of economies of scale in managing a sanitary sewer system. Smaller sanitary sewer systems generally have smaller budgets and fewer resources dedicated to operate and maintain their sanitary sewer systems.

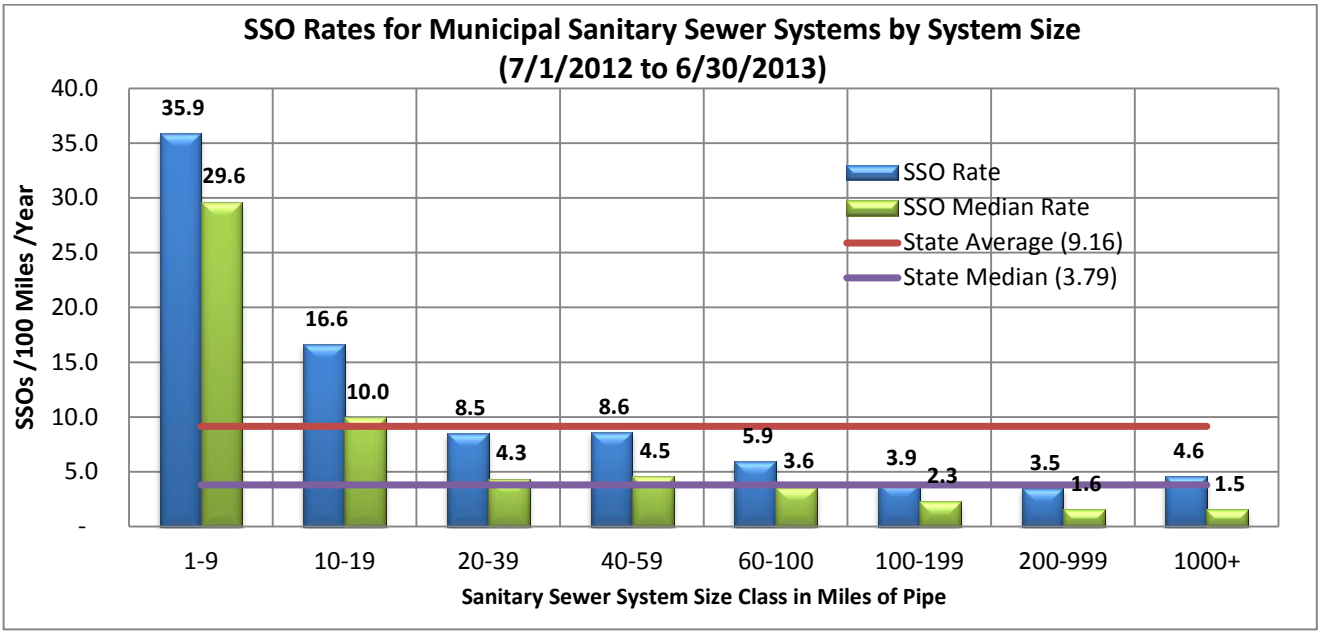


Figure 19 – SSO Rates for Municipal Sanitary Sewer Systems by System Size for Fiscal Year 2012 – 2013

Municipal sanitary sewer systems greater than 20 miles in length generally have spill rates below the state average for municipalities. The lower spill rates for larger sanitary sewer systems are likely attributable, in part, to having more resources to manage their sanitary sewer systems. In addition, the lower spill rates for the larger systems may be, in part, a reflection of earlier development and implementation of SSMPs. For instance, agencies that own larger sanitary sewer systems were required to develop and implement their SSMPs before the agencies that own smaller sanitary sewer systems. The smallest agencies had a deadline of August 2, 2010 to complete development and start implementation of their SSMPs whereas, the largest agencies had a deadline of May 2, 2009 to complete development and start implementing their SSMPs.

Pipe age may also be a factor contributing to high SSO rates that include excessive inflow and infiltration and/or pipe defects resulting in excessive blockages. For instance, enrollees with 50 percent or more of sewer pipe older than 52 years have higher SSO rates as shown in Figure 20. Specifically, these enrollees have an SSO rate of 10.3 SSOs/100mi/year which is approximately double of the enrollees with less than 50 percent of sewer pipe older than 52 years. This SSO rate for older systems is also higher than the overall state average SSO rate (over a five-year period from January 2007 through June 2013) of approximately 7.01 SSOs/100mi/year.

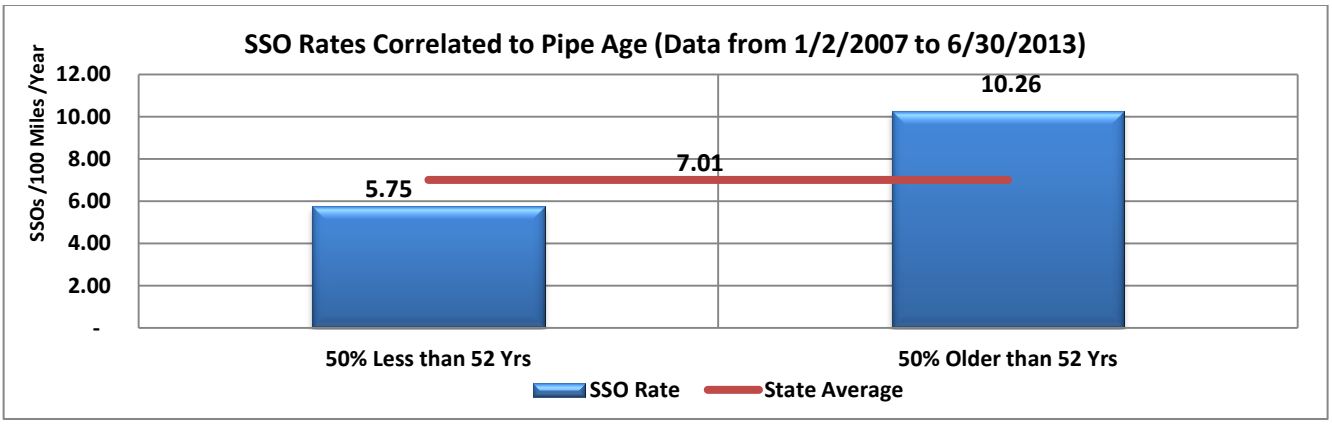


Figure 20 – SSO Rates Correlated to Pipe Age (Data from 1/2/2007 to 6/30/2013)

Although Figure 19 illustrates that sanitary sewer systems with less than 20 miles of pipe have the highest spill rates per mile of pipe, overall these systems have relatively fewer spills than larger systems as illustrated in Figure 21. In addition, as shown in Figure 22, only approximately 11 percent of enrollees (i.e., 42 enrollees) with nine or less miles of pipe reported having SSOs during Fiscal Year 2012-2013.

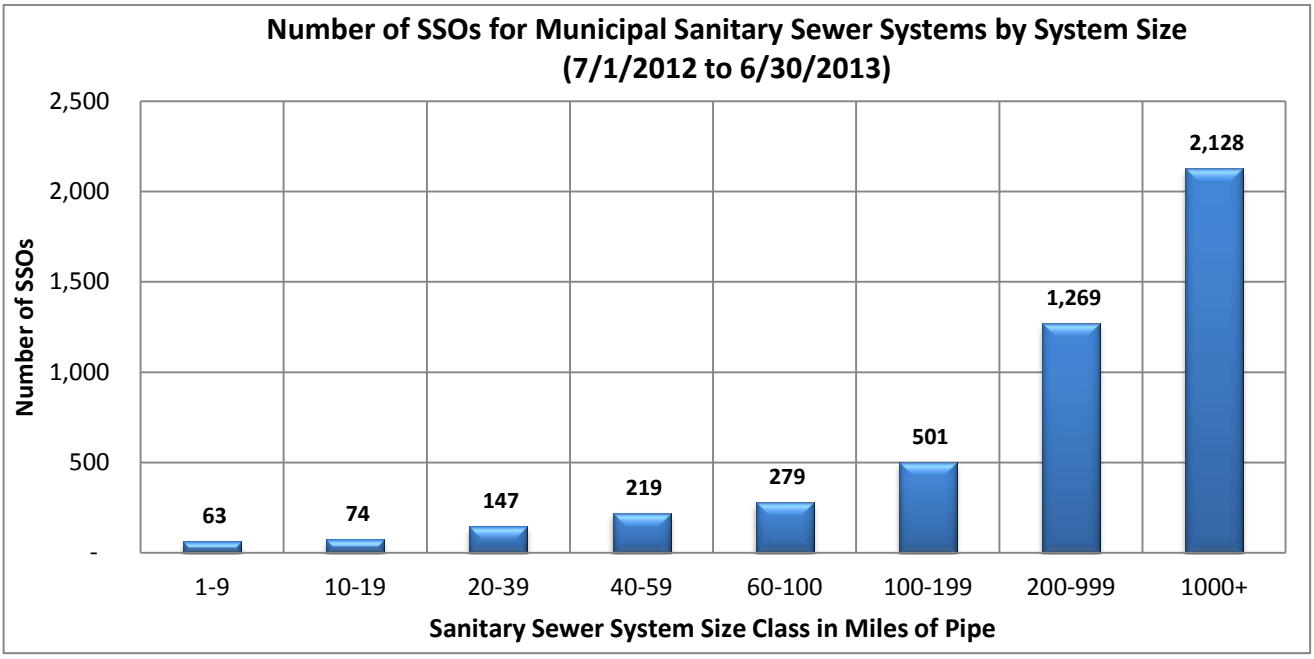


Figure 21 – Number of SSOs for Municipal Sanitary Sewer Systems by System Size for Fiscal Year 2012 – 2013

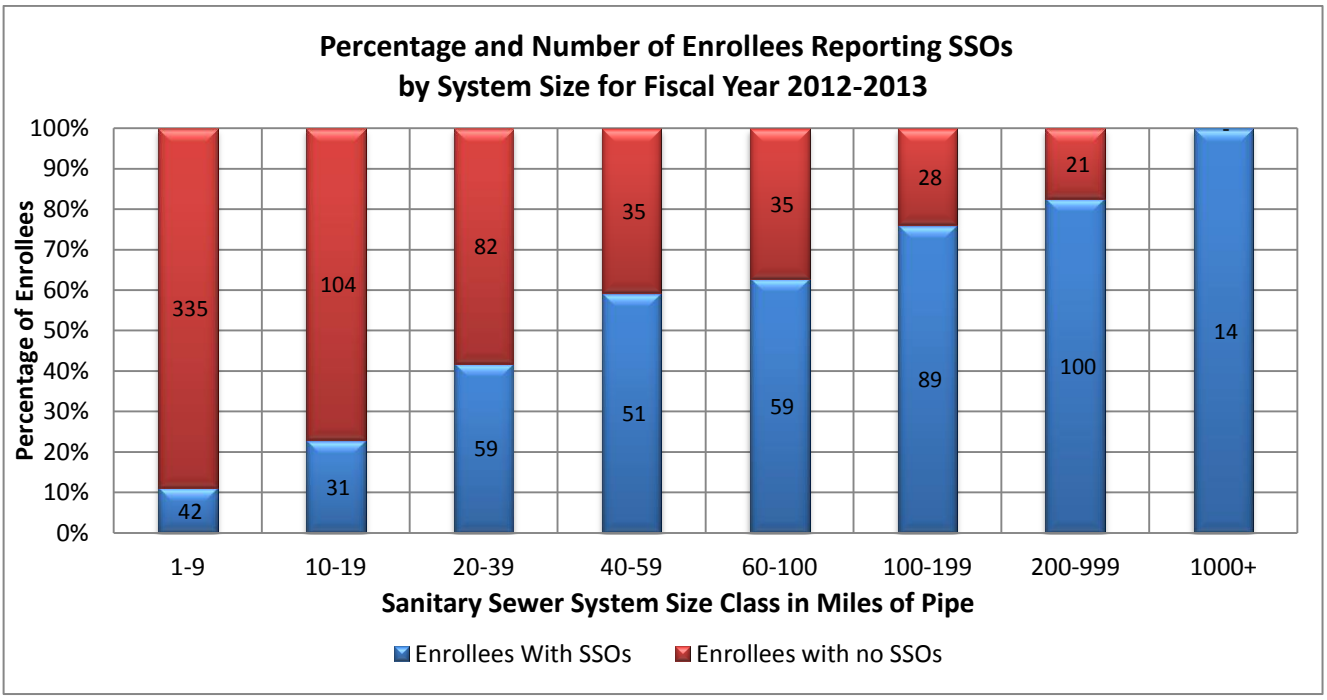


Figure 22 - Percentage and Number of Enrollees Reporting SSOs by System Size for Fiscal Year 2012 – 2013

The SSO volume per 1,000 people served per year (gallons/1,000 capita/year) is another metric that can be used to compare the relative performance of sanitary sewer systems. This metric is calculated as follows:

$$= \left(\frac{Total\ Volume\ Spilled\ \ per\ Year}{Population\ \ Served} \right) \times 1000$$

The SSO spill volume rate for enrolled municipal sanitary sewer systems by system size class for Fiscal Year 2012-2013 is illustrated in Figure 23. Sanitary sewer systems between 20 and 40 miles of pipe, and between 60 and 100 miles of pipe have the highest SSO volume rates at 5,277 gallons/1,000 capita/year and 4,142 gallons/1,000 capita/year, respectively. Sanitary sewer systems with more than 1,000 miles of pipe have the lowest average SSO spill volume rate at 47 gallons/1,000 capita/year.

The total SSO volume in the state by sanitary sewer system size class for Fiscal Year 2012-2013 is illustrated in Figure 24. Sanitary sewer systems with more than 40 miles of pipe contributed approximately 73 percent of the SSO volume in the state during Fiscal Year 2012-2013. Also, it is worth noting that the high SSO volume for sanitary sewer systems between 20 to 39 miles of pipe is due to a one-time SSO event where two million gallons were spilled in one event during Fiscal Year 2012-2013.

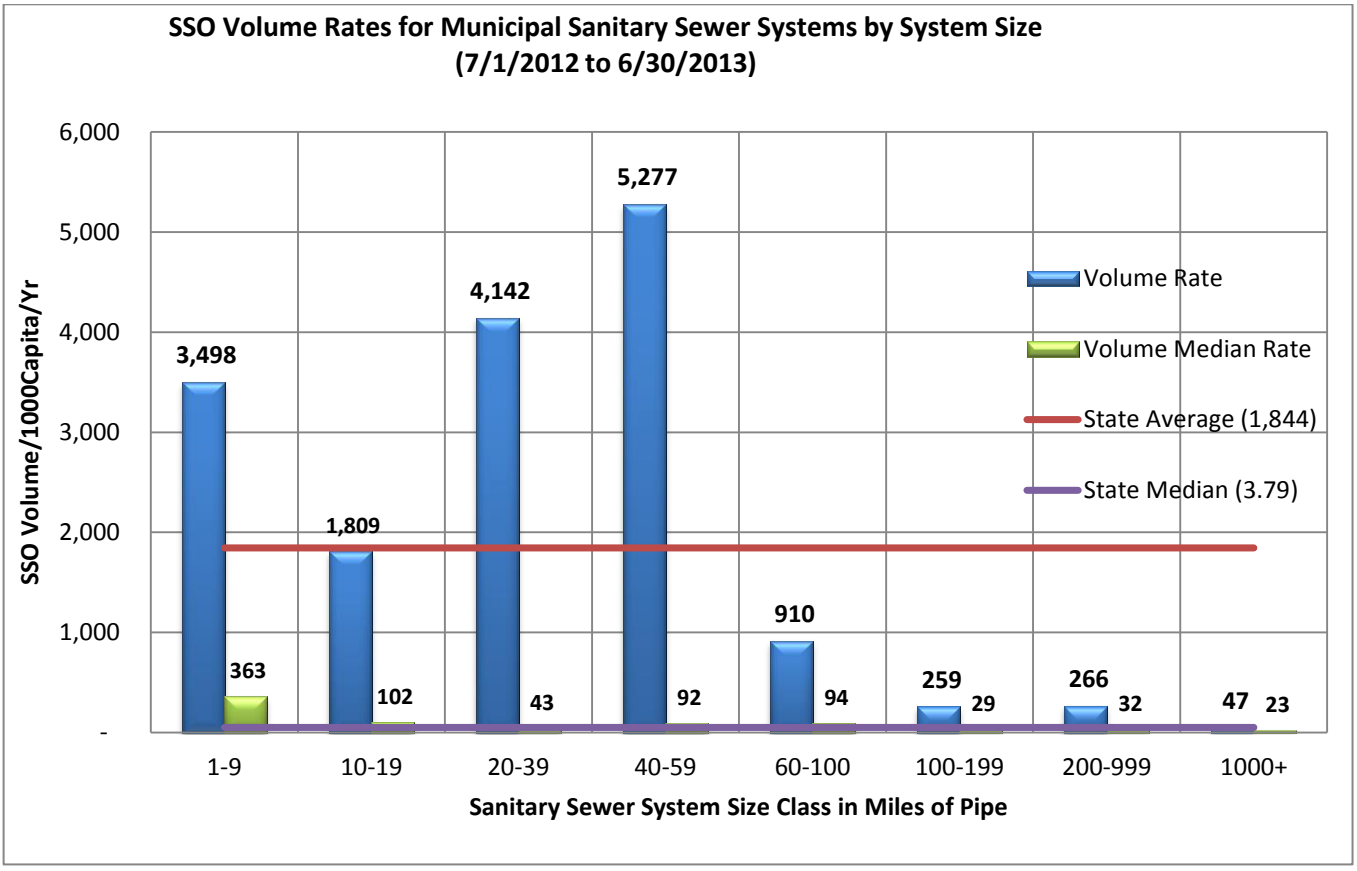


Figure 23 –SSO Volume Rates for Municipal Systems by System Size for Fiscal Year 2012 – 2013

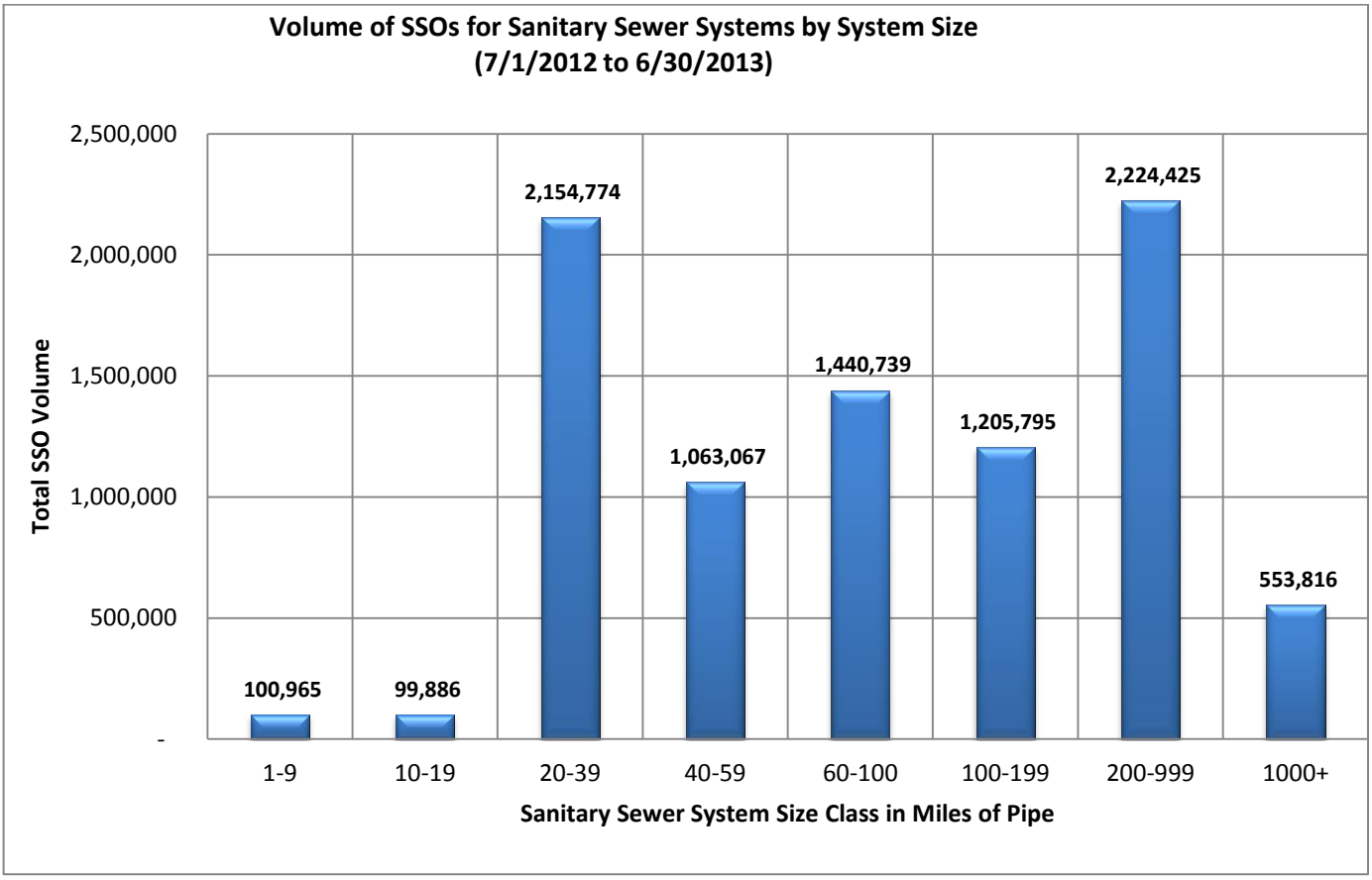


Figure 24 –Total SSO Volume for Municipal Sanitary Sewer Systems by System Size for Fiscal Year 2012 – 2013

As illustrated on Figures 19 and 23, there is a significant difference in mean and median rates for the spill rate indices. The median rate is the rate at which half the sanitary sewer systems in the category have rates higher and half have rates lower. The mean is the sum of the rates of all sanitary sewer systems in the category divided by the number of systems in the category. The large difference between the mean and median rates indicates that a number of sanitary sewer systems have significantly higher spill rates than others, and these poor performers are driving the average rates well above the median rates.

F. Regional Water Board Spill Data and Trends for Fiscal Year 2012-2013

A summary of the statewide SSO data by Regional Water Board for Fiscal Year 2012 – 2013 is shown in Table 4. As illustrated in Table 4, the Central Valley Water Board (Sacramento) and San Francisco Bay Water Board have the highest SSO rates with 12.7 SSOs/100mi/year and 7.6 SSOs/100mi/year, respectively. With respect to SSO volume rate, the San Francisco Water Board and the Central Valley Water Board (Fresno) have the highest SSO volume rates with 24,028 gallons/100mi/year and 4,914 gallons/100mi/year, respectively. The data also indicate that the San Francisco Bay, Los Angeles, Central Valley (Sacramento), Santa Ana, and San Diego Water Boards have the majority of sanitary sewer system piping owned by public agencies in the state.

Table 4– Regional Water Board SSO Data for Fiscal Year 2012 – 2013

Regional Water Board	Total Miles of Sewer Owned by Enrollees	Facilities Regulated Under SSO Program	Enrollees Reporting SSOs	Enrollees with No SSOs	Number of SSOs	Volume of Sewage Spilled	Volume Reaching Surface Water	Percent Reaching Surface Water	SSOs Per 100 miles of Sewer	SSOs Volume Per 100 miles of Sewer
North Coast	2,377	69	25	44	55	94,730	64,484	68%	2.31	3,986
San Francisco Bay	17,850	132	98	34	1,364	4,288,909	2,653,662	62%	7.64	24,028
Central Coast	4,473	104	55	49	195	146,363	45,480	31%	4.36	3,272
Los Angeles	21,525	144	76	68	440	384,630	130,371	34%	2.04	1,787
Central Valley - Fresno	13,198	156	35	121	128	2,452,199	2,418,702	99%	0.26	18,580
Central Valley - Redding	1,612	51	14	37	37	54,581	40,011	73%	2.30	3,385
Central Valley - Sacramento	17,181	183	78	105	2,186	750,991	427,067	57%	12.72	4,371
Lahontan - Tahoe	1,178	22	7	15	28	18,515	200	1%	2.38	1,572
Lahontan - Victorville	2,974	51	15	36	45	86,974	2,612	3%	1.51	2,925
Colorado River Basin	3,033	32	14	18	34	51,996	15,811	30%	0.08	1,714
Santa Ana	16,505	87	42	45	143	219,807	82,470	38%	0.87	1,332
San Diego	13,198	62	34	28	185	512,370	130,657	26%	1.40	3,882
TOTAL	**115,104**	**1,093**	**493**	**600**	**4,840**	**9,062,065**	**6,011,527**	**66%**	**3.16**	**5,903**

The percentages of total reported number of SSOs and number of SSOs reaching surface waters in the state by Regional Water Board are presented in Figure 25. The data indicate that:

(1) San Francisco Bay, Central Valley (Sacramento office), and Los Angeles Water Boards account for 82 percent of reported spills in the state (San Francisco Bay Water Board = 45 percent, Central Valley(Sacramento office) Water Board = 28 percent, Los Angeles Water Board = 9 percent); and

(2) San Francisco Bay and Central Valley Water Boards account for approximately 64 percent of reported spills reaching surface waters in the state (San Francisco Bay Water Board = 36.7 percent, Central Valley (Fresno office) Water Board = 18.9 percent, Central Valley (Sacramento office) Water Board = 8.8 percent).

The statewide distribution of the total SSO volume reported for Fiscal Year 2012-2013 is illustrated in Figure 26 as the percentage of total statewide SSO volume reported in each Regional Water Board. These data indicate that:

(1) San Francisco Bay and Central Valley (Fresno office) Water Boards account for approximately 74 percent of reported spill volume in the state (San Francisco Bay = 47 percent, and Central Valley-Fresno = 27.1 percent); and

(2) Approximately 84 percent of the reported spill volume reaching surface water results from spills in the San Francisco Bay and Central Valley (Fresno office) Water Boards (San Francisco Bay = 47 percent, and Central Valley-Fresno = 27 percent).

(3) Increased compliance efforts in the Central Valley (Sacramento office), San Francisco Bay and Central Valley (Fresno office) Water Boards may yield the best results for reduction of the number of SSOs and volume of sewage spilled.

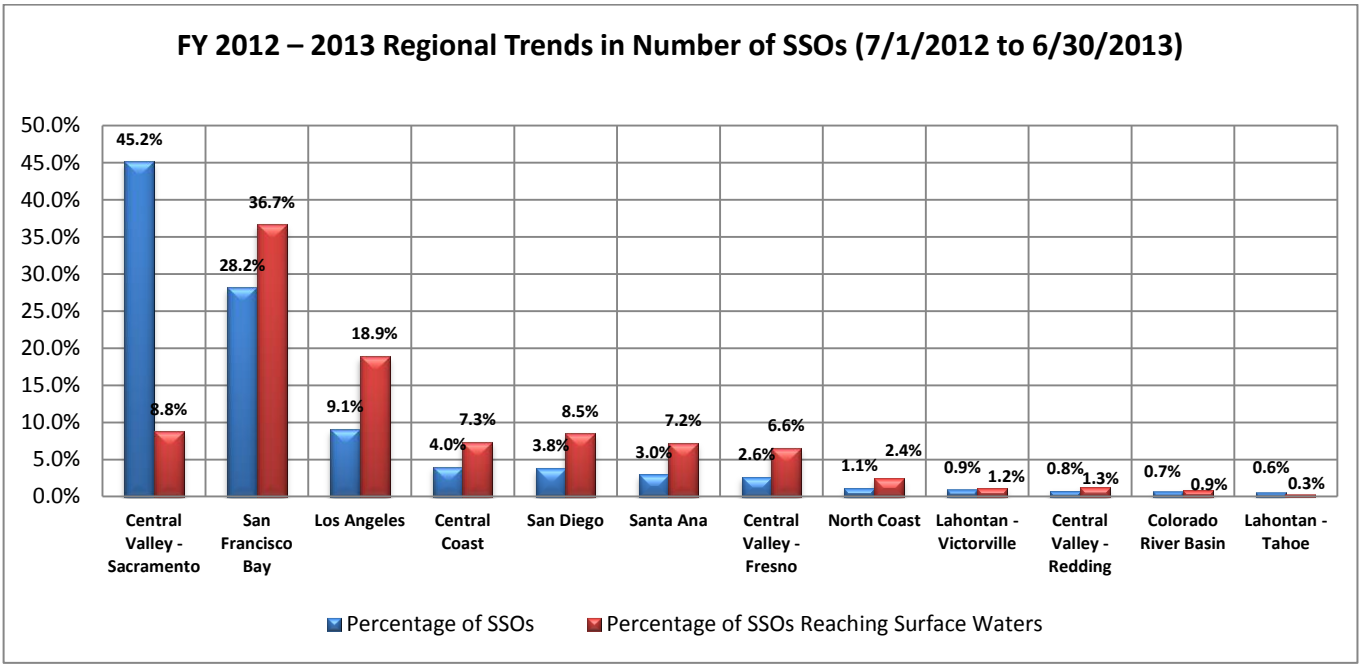


Figure 25 – FY 2012 – 2013 Regional Trends in Number of SSOs for Fiscal Year 2012 – 2013

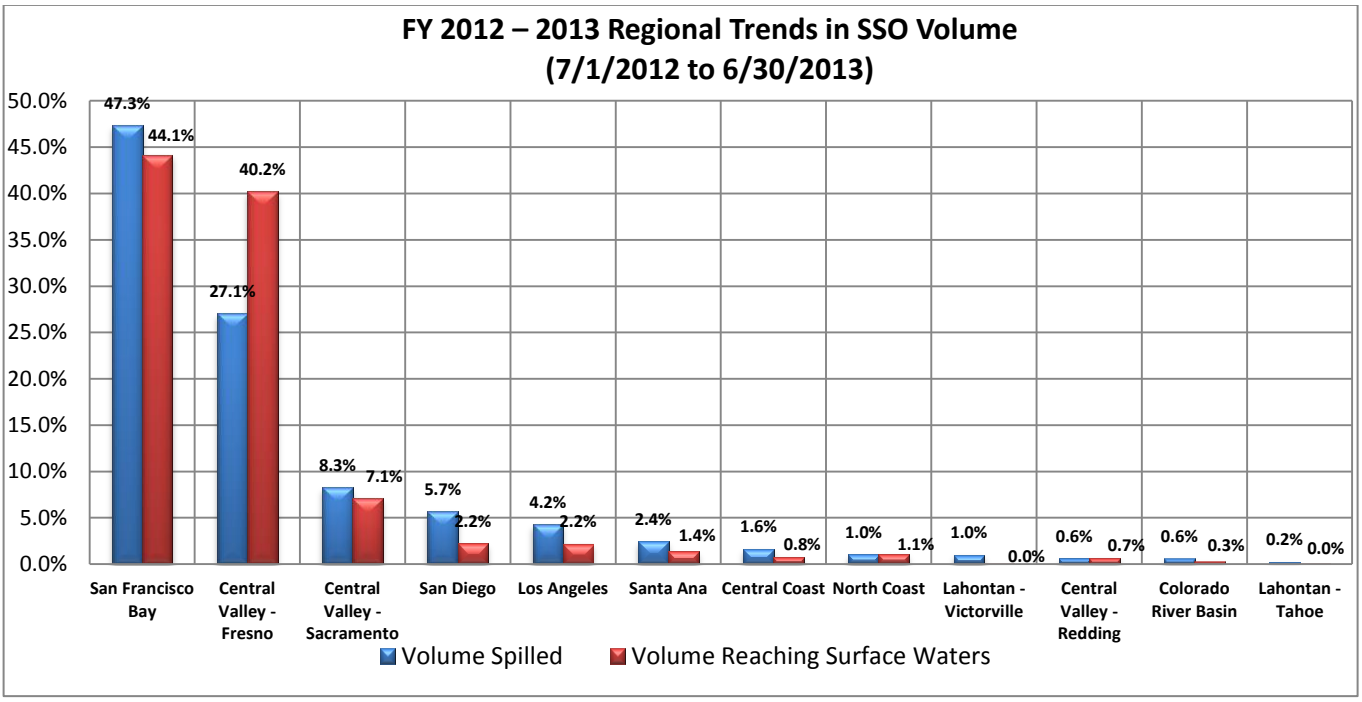


Figure 26 – FY 2012 – 2013 Regional Trends in SSO Volume for Fiscal Year 2012 – 2013

G. Summary of FY 2012 – 2013 Reported Spill Data

In Fiscal Year 2012-2013, 58 enrollees were responsible for approximately 90 percent of the reported SSO volume. The 20 sanitary sewer systems with the largest cumulative reported SSO volumes ranked from highest to lowest for Fiscal Year 2012 – 2013 is presented in Table 5. The population and mileage of the ranked sanitary sewer systems for Fiscal Year 2012 – 2013 vary from small to large systems. The total SSO volume reported in millions of gallons and the number of spill events that exceeded 50,000 gallons are also illustrated in Table 5.

Table 5– Top 20 Sanitary Sewer Systems Ranked by Cumulative SSO Volume Reported for Fiscal Year 2012 – 2013

Regional Water Board	Sanitary Sewer System	Population Served	Miles of Sewer Pipe Owned	Total SSO Volume Spilled (MG)	# of Events >=50k Gallons	SSO Rate (# of SSOs per 100 Miles)	Volume Rate (Volume Spilled per 1000 Capita)	FY 12-13 Rank
Central Valley - Fresno	Taft City CS (Taft City)	9,000	29	2.05	1	6.90	227,800	1
San Francisco Bay	San Mateo CS (San Mateo City)	97,000	236	0.80	5	13.15	8,224	2
San Francisco Bay	Fssd Subregional CS (Fairfield Suisun Sewer District)	134,357	84	0.77	1	2.38	5,737	3
San Francisco Bay	Richmond City CS	68,240	191	0.63	2	23.54	9,219	4
Central Valley - Sacramento	Grass Valley City CS	12,500	64	0.48	1	23.36	38,588	5
Central Valley - Fresno	Groveland CS	1,500	42	0.33	1	4.76	220,017	6
San Francisco Bay	Town Of Hillsborough CS	10,300	99	0.32	3	20.22	30,970	7
San Diego	Temecula Valley RCS (Eastern Municipal Water District)	212,425	499	0.27	1	1.20	1,280	8
San Francisco Bay	Fairfield, Unincorporated Area CS (Fairfield City)	105,026	426	0.24	1	7.51	2,288	9
San Francisco Bay	San Dist #1 of Marin CS	50,000	203	0.20	1	14.31	3,967	10
San Francisco Bay	San Jose City CS	971,372	2,281	0.18	-	6.80	180	11
San Francisco Bay	Delta Diablo SD CS	189,000	50	0.14	1	6.06	724	12
San Francisco Bay	Airport Industrial Wastewater CS (City & County of San Francisco, Airport Commision)	10,000	31	0.12	1	3.22	11,730	13
San Francisco Bay	Oakland City CS	400,000	930	0.12	-	10.64	292	14
San Francisco Bay	Sonoma Valley County S.D. CS (Sonoma Cnty Water Agency)	44,968	135	0.11	-	9.63	2,395	15
Los Angeles	Hyperion CS (Los Angeles City Bureau of Sanitation)	4,000,000	6,096	0.08	-	1.98	21	16
Santa Ana	Eastern Municipal Water District CS	564,629	1,151	0.08	1	0.43	134	17
San Francisco Bay	Las Gallinas CS (Las Gallinas Valley Sanitary District)	29,057	112	0.06	1	6.27	1,931	18
Central Valley - Sacramento	Sacramento Area Sewer District CS	1,160,000	4,431	0.05	-	34.69	46	19
San Diego	San Diego City CS	2,186,810	5,147	0.05	-	0.78	24	20

H. Summary of Reported Spill Data Since Inception of the SSO Reduction Program

Since inception of the SSO Reduction Program, 30 enrollees have reported approximately 90 percent of the cumulative SSO volume reported to have reached surface waters in the state. The 30 sanitary sewer systems reporting the largest SSO volumes to surface water, cumulatively over the life of the program, are listed in Table 6 where they are ranked from highest reported cumulative SSO volume to lowest reported cumulative SSO volume. Out of the 30 enrollees, 28 have reported three or more SSOs reaching surface waters. The total reported SSO volume reaching surface water from these 30 enrollees is approximately 98 million of gallons.

Table 6 – Sanitary Sewer Systems Ranked by Cumulative Total SSO Volume Reported as Reaching Surface Water from January 2007 – June 2013

Regional Water Board	Sanitary Sewer System	Population Served	Miles of Sewer Pipe Owned	Number of SSOs	Total SSO Volume Spilled Reaching Surface Waters (MG)	Spills => 50k	SSO Rate (SSOs per 100 Miles per Yr)	Volume Rate (Volume Spilled per 1000 Capita per Yr)
San Francisco Bay	Richmond City CS	68,240	191	265	45.80	38	3.89	638.18
Santa Ana	Carlsbad MWD CS	69,420	287	38	7.37	2	16.03	8,839.74
Santa Ana	Running Springs CS	5,632	68	5	5.89	1	33.38	158.14
San Diego	La Salina WWTP, Oceanside Otfl CS	169,350	475	55	5.54	2	2.35	27,139.00
San Francisco Bay	San Mateo CS	97,000	236	288	5.09	27	12.55	5,929.03
San Francisco Bay	Town Of Hillsborough CS	10,300	99	190	3.71	20	15.99	18,477.03
San Diego	San Diego City CS	2,186,810	5,147	375	3.26	4	3.66	611.04
San Francisco Bay	San Dist #1 of Marin CS	50,000	203	239	2.75	5	7.09	39,213.22
Central Valley - Fresno	Taft City CS	9,000	29	12	2.06	1	3.67	48,655.81
San Francisco Bay	San Bruno City CS	40,165	130	202	1.63	5	2.04	16,323.11
Colorado River Basin	Calexico CS	38,000	78	2	1.35	1	1.78	5,033.80
San Diego	City Of La Mesa CS	55,724	155	66	1.32	2	1.12	229.44
Colorado River Basin	Coachella Valley Water District CS	260,700	1,168	49	1.26	3	6.55	3,649.90
San Francisco Bay	Sonoma Valley County S.D. CS	44,968	135	82	1.11	5	1.39	2,348.98
Central Valley - Sacramento	Sacramento Area Sewer District CS	1,160,000	4,431	8,630	1.07	3	0.26	879.61
San Diego	Padre Dam CS	67,398	166	15	1.03	1	9.28	6,091.78
San Diego	Santa Margarita Water District CS	155,000	782	13	0.89	1	1.13	160,896.33
San Francisco Bay	Oakland City CS	400,000	930	872	0.83	5	0.44	6,087.84
San Diego	City Of Laguna Beach CS	18,000	100	60	0.71	2	0.72	828.99
San Francisco Bay	Mt. View SD CS	18,253	75	66	0.66	1	2.35	2.11
Los Angeles	Hyperion CS (Los Angeles City Bureau of Sanitation)	4,000,000	6,096	931	0.66	6	39.60	1,696.38
Lahontan - Tahoe	Susanville Csd CS	9,960	62	58	0.51	1	22.45	108,737.34
San Francisco Bay	Novato And Ignacio CS	56,000	225	130	0.50	3	19.79	8,497.70
Central Valley - Sacramento	Dry Creek, Zone 173 CS (Placer Cnty)	2,873	22	3	0.46	2	31.12	58,390.53
Central Valley - Sacramento	Grass Valley City CS	12,500	64	47	0.43	2	19.10	8,907.06
Central Valley - Fresno	Groveland CS	1,500	42	9	0.43	2	25.17	6,590.53
Central Coast	South San Luis Obispo Sd CS	40,000	9	22	0.42	2	9.84	3,988.53
Lahontan - Victorville	Victor Valley Wastewater CS	110,000	44	10	0.41	3	15.19	336.10
Central Valley - Sacramento	Jamestown SD CS	3,540	15	14	0.38	1	14.26	5,881.94
Central Valley - Redding	Redding City CS	91,000	431	92	0.32	3	9.36	1,434.15