Statewide Sanitary Sewer Overflow Reduction Program
Annual Compliance Update

EXECUTIVE DIRECTOR'S REPORT

State Water Resources Control Board

May 2010

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

This report provides an update on the Statewide Sanitary Sewer Overflow Reduction Program (SSO Reduction Program). It updates information contained in the May 2008 Executive Director's Report and the May 2009 Executive Director's Report. The State Water Resources Control Board (State Water Board) requested the May 2010 Executive Director's Report and the update to address statewide compliance with the General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems (Water Quality Order No. 2006-0003-DWQ, Sanitary Sewer System WDR). This updated report contains detailed information on the SSO Reduction Program implementation efforts, compliance, and enforcement actions.

A sanitary sewer overflow (SSO) is any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system. A sanitary sewer system is any system of pipes, pump stations, sewer lines, or other conveyances used to collect and convey wastewater to a treatment facility. 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 is a problem within the publicly-owned portion of the sanitary sewer system. Overflows from privately owned service laterals are referred to as private lateral sewage discharges (PLSDs).

SSOs and PLSDs contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oil, and grease. SSOs and PLSDs pollute surface and ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters. SSOs and PLSDs also can result in closure of beaches and other recreational areas, inundate properties, and pollute rivers and streams.

The Sanitary Sewer System WDR was developed and implemented in 2006-2007 to address these issues. The objective of the Sanitary Sewer System WDR is to reduce the number of SSOs and the volume of sewage spilled across the state through the proper operation and maintenance of sanitary sewer systems. The basic requirements of the Sanitary Sewer System WDR are that any publicly-owned agency with more than one mile of sewer lines connected to a publicly-owned treatment facility must enroll for coverage under the Sanitary Sewer System WDR, develop and implement a sewer system management plan (SSMP), and report all SSOs or a no-spill certificate each month to a statewide SSO database.

Prior editions of this annual report contain detailed information on the history and requirements of the SSO Reduction Program.

In addition to the statewide requirements of the Sanitary Sewer System WDR, collection systems owned by public agencies in the San Francisco Bay and San Diego regions are subject to additional Regional Water Quality Control Board (Regional Water Board) requirements. Although it is the State Water Board's intent that the Sanitary Sewer System WDR be the primary mechanism for regulation of sanitary sewer systems statewide, per the Sanitary Sewer System WDR, Regional Water Boards may issue more stringent or prescriptive requirements for sanitary sewer systems.

The Regional Water Boards have implemented the following requirements for sanitary sewer systems that are above and beyond the requirements of the statewide Sanitary Sewer System WDR:

San Francisco Bay Regional Water Board (San Francisco Bay Regional Water Board, Sanitary Sewer Overflow Reduction Program)

1) Requires spills to be reported to a San Francisco Bay Regional Water Board online reporting system in addition to the State Water Board's California Integrated Water Quality System (CIWQS) online reporting system as the mechanism to provide the Regional Water Board notification required per State Water Board Water Quality Order No. 2008-0002-EXEC, the Monitoring and Reporting Program for the statewide Sanitary Sewer System WDR.
2) Requires submittal of an annual report to the Regional Water Board detailing spills that occurred from the collection system during the year.
3) Requires collection system agencies to develop and implement an SSMP similar to the SSMPs required under the Sanitary Sewer System WDR but, with different development deadlines than the Sanitary Sewer System WDR.

San Diego Regional Water Board (Order No. R9-2007-0005)

1) Prohibits all discharges of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant.
2) Requires that sewage collection agencies notify the Regional Water Board of all PLSDs in their service area that they become aware of and that the PLSDs be reported to the State Water Board online SSO database.

2. STATEWIDE SANITARY SEWER SYSTEM WDR IMPLEMENTATION

Over the past three years, staff has primarily focused its resources in the following areas to achieve successful statewide implementation and compliance with the Sanitary Sewer System WDR requirements.

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.

Specific outreach has been varied to provide information about the Sanitary Sewer System WDR to as many different audiences as possible. Specific tasks include the following:

1) Giving external presentations for trade and non-profit associations such as the California Water Environment Association (CWEA), Southern California Alliance of POTWs (SCAP), Bay Area Clean Water Association (BCWA), Central Valley Clean Water Association (CVCWA), CalFOG, Southern California Chapter of the American Public Works Association (APWA), California Sanitation Risk Management Authority (CSRMA), and the California Rural Water Association (CRWA);
2) Providing CIWQS Help Line assistance;
3) Assisting in the development of the SSO Public Reports Website;
4) Developing and maintaining the SSO website;
5) Broadcasting list-serve email announcements.

B. SSO Database and External Users Group

Staff developed the SSO database and enrollees are using it to report SSOs and PLSDs. 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 this 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 data collection. Staff continues to maintain and enhance the SSO database with available resources. Staff coordinates enhancements with an SSO external users group comprised of enrollees. In addition, staff is coordinating and participating in a CIWQS SSO module Data Review Committee comprised of State Water Board, Regional Water Board, and enrollees as part of the Sanitary Sewer System WDR Review and Update process. This committee is evaluating SSO spill data collected to date in CIWQS with the goal of developing collection system performance indicator(s) and refining the CIWQS spill report form and data content.

C. Enrollee Training

State Water Board staff continues to use the Memorandum of Agreement (MOA) with the California Water Environment Association (CWEA) to offer Sanitary Sewer System WDR training to enrollees. This MOA is in effect until December 2010. CWEA created, in cooperation with staff, training courses for how to report a spill to the SSO database, how to develop an SSMP, and how to communicate with the media during and after spill events. CWEA has offered these classes statewide and will continue to do so under the terms of the MOA. The number of enrollees that have participated in the CWEA classes for electronic reporting, SSMP preparation, and media communication are illustrated on Figure 1 below.

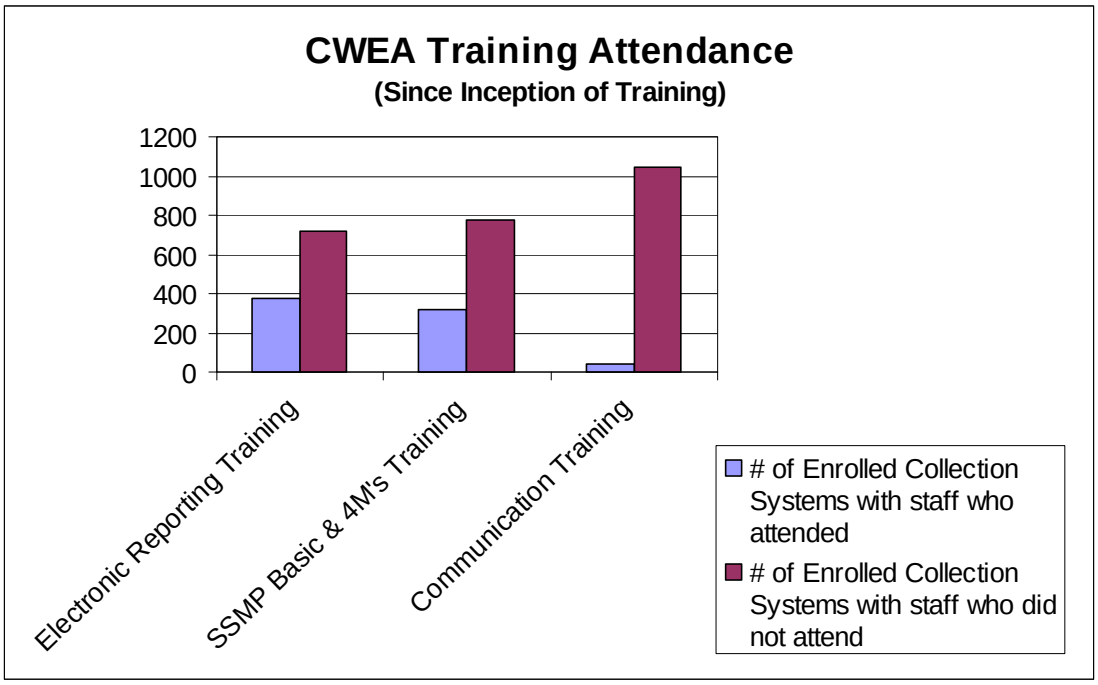

Figure 1 – CWEA Training Attendance

One of the challenges with enrollee training continues to be reaching small agencies that either cannot afford to pay for training or cannot attend the training because of limited staff size. A wastewater industry organization, California Rural Water Association (CRWA), is providing separate Sanitary Sewer System WDR training and outreach effort to address the needs of small sanitary sewer system agencies.

Staff continues to participate, in a consultative role, in the production of new SSO Reduction Program education materials and in the periodic review and update of existing educational materials via the established MOA with CWEA. This task includes participation in a regular monthly Training Task Force meeting and communication with education and marketing staff at CWEA.

D. Regional Water Board SSO Reduction Program Training

State Water Board staff, with technical assistance from outside consultants, has delivered customized training in the past in northern and southern California for Regional Water Board staff that covers the requirements of the statewide Sanitary Sewer System WDR and proper sanitary sewer system operation and maintenance. The class curriculum included information on how to conduct audits of sanitary sewer systems, the Sanitary Sewer System WDR requirements, evaluating SSMPs, and procedures for responding to and investigating SSOs. Additional advanced training classes on this subject matter are planned for development and will be presented to applicable Water Board staff in the future.

E. SSO Incident Maps

Staff released GIS spill incident maps to the public in May 2009 that depict SSO and PLSD incidents that have been reported to CIWQS by enrollees This tool shows CIWQS certified spill data (http://www.waterboards.ca.gov/water_issues/programs/sso/index.shtml#ssomaps).on Google maps and was developed in-house. The spill maps include spills from sanitary sewer systems only and do not include spills from wastewater treatment plants at this time. The GIS maps serve to implement the requirements in CWC section 13193 which require the State Water Board to make reports available to the public, using GIS maps where possible. In addition, the GIS maps support the Water Board's Strategic Plan goal of communicating public information regarding the state's waters in an easily understood form. The mapping tool incorporates numerous recommendations from the External Users Group including the capability to search 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 2 below is a view the incident map for SSOs for certified spill incidents in CIWQS provided by enrollees over the past 4 months.

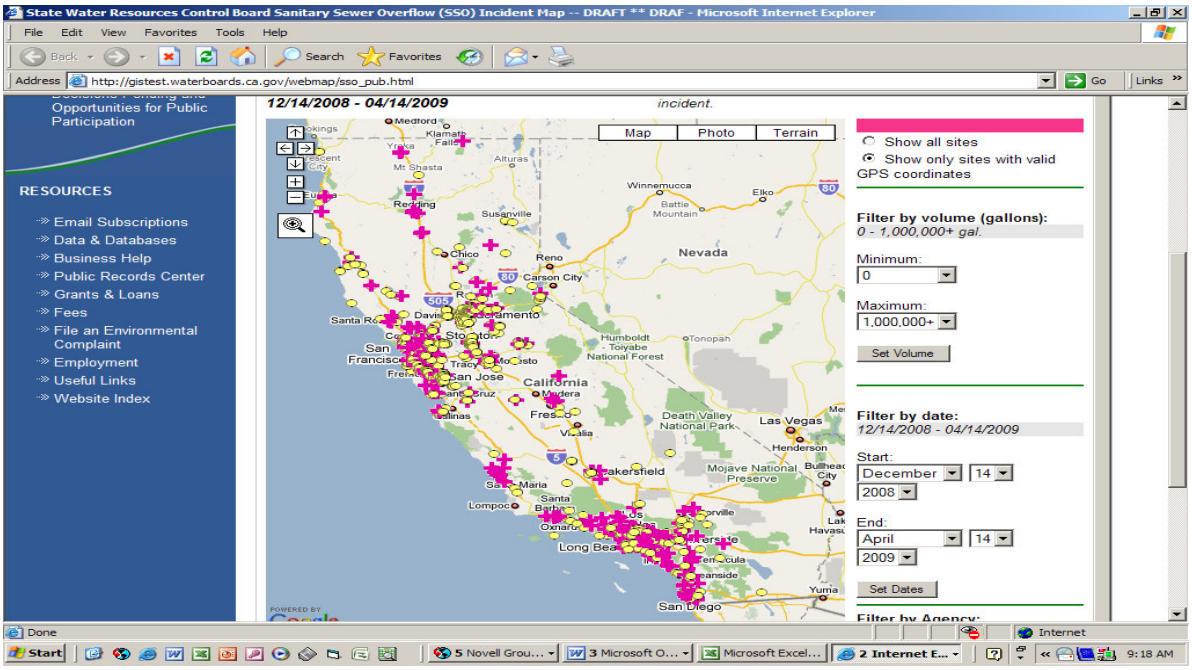

Figure 2 – SSO GIS Incident Map

F. Enforcement of the Sanitary Sewer System WDR

Current compliance and enforcement tasks are focused on addressing violations of the Sanitary Sewer System WDR in the following areas:

a. Evaluating compliance and implementing enforcement actions for failing to provide required reporting elements, and

b. Evaluating the accuracy and completeness of required reporting elements.

The first area is being handled solely by State Water Board staff. The second area is to be handled jointly with State Water Board and Regional Water Board staff, working together where possible, by way of scheduled collection system field audits. Due to limited staff resources, a phased approach is being utilized in implementing the proposed enforcement tasks.

Phase I

Staff is addressing collection system agencies that have not submitted applications for enrollment into the Sanitary Sewer System WDR or that are enrolled but have not submitted any reports first. During this phase, State Water Board staff are identifying enrollees not meeting the basic program participation requirements (e.g., enrollment, reporting, SSMP development). Staff is conducting enforcement actions to bring identified noncompliant enrollees into compliance.

Staff is currently preparing approximately 160 Notices of Violation (NOVs) that will be mailed to these agencies. These NOVs are scheduled to be sent in May 2010 and will require agencies that are not enrolled in the Sanitary Sewer System WDR to submit applications for enrollment. The NOVs will also require the agencies to submit all of the spill reports for their collection systems dating back to the effective date on which they were required to start reporting. In addition, the NOVs will require these agencies to submit their questionnaire, a schedule for

completion of their SSMP, and maintain future compliance with the Sanitary Sewer System WDR requirements.

Phase II
In the second phase, staff plan to address enrollees having some violations of the Sanitary Sewer System WDR reporting or implementation requirements. Initially, these agencies will be provided a compliance reminder and directed to correct their reporting deficiencies. Enrollees who fail to respond to the compliance reminder would be sent NOVs directing them to correct their reporting deficiencies and maintain compliance with the Sanitary Sewer System WDR. Additional enforcement letters and actions would be initiated against agencies who failed to respond to the NOVs.

Phase III
The third phase includes evaluation of all enrollees for completeness and accuracy of their SSMPs and spill reporting. Staff plan to use targeted and random collection system audits.

To ensure a fair and consistent approach to achieve statewide compliance, staff will use the Sanitary Sewer Reduction Program Compliance and Enforcement Plan. This plan identifies the specific enforcement actions to be undertaken over the next year to comprehensively address noncompliance with the Sanitary Sewer System WDR requirements.

G. Recent Enforcement Activities

During Fiscal Year 2009-2010, CIWQS data show that 14 formal enforcement actions have been taken by Regional Water Boards for violations, in whole or in part, related to the statewide Sanitary Sewer System WDR. These actions resulted in approximately $5,767,000 in assessed liabilities for SSOs throughout the state and consisted of four administrative civil liability (ACL) actions issued by the North Coast Water Board; five ACLs and one cease and desist order issued by the San Francisco Bay Water Board; one ACL issued by the Central Valley Water Board; one ACL issued by the Santa Ana Water Board; and two ACLs issued by the San Diego Water Board.

In addition, San Diego Water Board staff sent seven NOVs in February 2010 to medium and large collection systems in their region to address missed SSMP deadlines.

Also, State Water Board staff sent 50 NOVs in Fiscal Year 2009-2010 to address non-payment of WDR fees.

H. Sanitary Sewer System WDR Review And Update

The review and update of the Sanitary Sewer System WDR was initiated in September 2009. Progress to date on the review and update of the Sanitary Sewer System WDR is summarized below.

Staff Public Meetings – Staff held informal public meetings on September 15, 2009 in Orange County (82 participants) and on September 29, 2009 in the City of Oakland (101 participants). Comments received have been compiled for response in a comment database.

Comment Letter Solicitation – In follow-up to the staff workshops, comment letters were solicited. A total of 36 comment letters were received from the public and 3 comment letters were provided by Regional Water Boards (The San Francisco Bay, Central Coast, and San

Diego Water Boards responded.). Comments received have been compiled for response in a comment database.

Workshop with Regional Water Board Staff – A workshop with Regional Water Board staff from the North Coast, San Francisco Bay, Central Coast, Central Valley and San Diego Water Boards was conducted on January 19, 2010. Comments received have been compiled for response in a comment database.

Data Review Committee – As part of the staff workshops, formation of a Committee to Review CIWQS SSO data collected to date was offered to interested participants. The purpose of the Committee is: (1) to review the SSO data collection process and to make improvements to it that will enhance the value of collected spill data for all stakeholders; (2) to redesign the spill database and report forms to be an event based versus the current location based reporting system; and (3) to evaluate and develop indices of collection system performance to be used in California. A total of 129 stakeholders registered for the committee. Committee meetings are being held every two weeks and will continue through approximately July 2010.

California Emergency Management Agency (Cal EMA) Coordination - A meeting was held with Cal EMA staff on March 4, 2010 to discuss statewide spill notification procedures in relation to the Sanitary Sewer System WDR. State Water Board staff gained information on how the SSO notification procedures can be streamlined in the update of the Sanitary Sewer System WDR. Cal EMA staff agreed to let State Water Board staff comment on their internal spill notification procedures.

Cal EMA confirmed that they are notifying local health department staff and Regional Water Board staff when they receive spill notifications. The Sanitary Sewer System WDR also requires the enrollee to notify their local health department staff and Regional Water Board staff when a spill occurs. These notifications result in local health department staff and Regional Water Board staff receiving multiple notifications for a given spill event.

Local Health Department Coordination – Local Health Department staff are providing input on the Sanitary Sewer System WDR to State Water Board staff via a survey form that State Water Board staff distributed to the California Conference of Directors of Environmental Health, Land Use Committee. State Water Board staff is currently awaiting return of the surveys.

Upcoming Activities – Upcoming activities include drafting a response to comments document and presenting an Information Item to inform the State Water Board of the comments received and staff recommendations. This Information Item is currently scheduled for the State Water' Board's meeting on August 3, 2010.

3. STATEWIDE SANITARY SEWER SYSTEM WDR COMPLIANCE SUMMARY

The following section provides an update on enrollee compliance with requirements of the Sanitary Sewer System WDR including enrollment for coverage, monthly reporting, SSMP certification, and completion of the collection system questionnaire.

A. Enrollment for Coverage

The Sanitary Sewer System WDR requires any public entity that owns or operates a sanitary sewer system comprised of more than one mile of pipe or sewer lines that conveys wastewater

to a publicly owned treatment facility to apply for coverage under the Sanitary Sewer System WDR.

Since January 2008, the number of enrollees covered under the Sanitary Sewer System WDR has varied between 1090 and 1100 enrollees. Currently, 1091 agencies are enrolled for coverage under the Sanitary Sewer System WDR. The total number of enrollees varies due to new applications for coverage under the Sanitary Sewer System WDR and cancellations of enrollment. Reasons for cancellations of enrollment include: (1) agency does not meet the application criteria (i.e., greater than one mile of sewer pipe and/or public entity) and enrolled erroneously; (2) duplicate enrollment due to submittal of multiple applications; or (3) errors in CIWQS data entry.

Staff occasionally receives notifications from Regional Water Boards of sanitary sewer systems that were not notified of the requirements to apply for coverage under the Sanitary Sewer System WDR and that are therefore not enrolled. Staff is following up on these notifications with enforcement activities as described in section 2.F above.

B. SSO Reporting

A monthly SSO reporting compliance rate can be established by determining how many individual enrollees submitted either an SSO report or no spill certification for a given calendar month. Monthly reporting compliance rates are shown in Figure 2 below for the months of September 2007 to January 2010 and equals 68% since program inception. The monthly reporting compliance rate during the past year averages 79%.

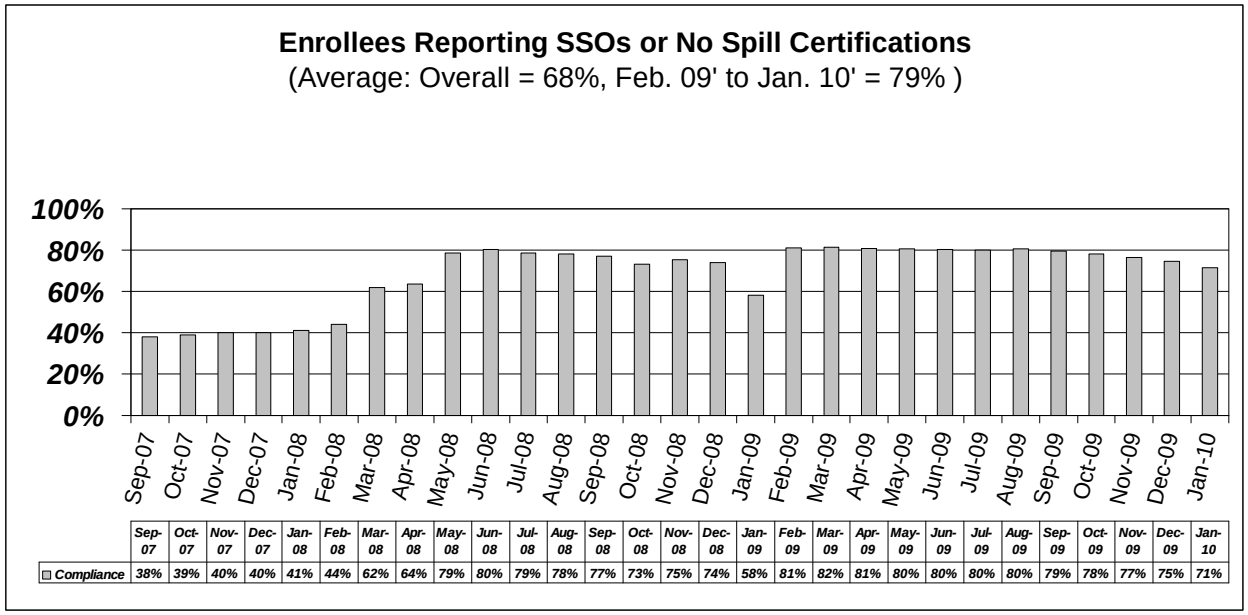

Figure 3 – Enrollee Month-to-Month Compliance with Spill and No-Spill Reporting

The current average monthly reporting compliance rate for the past year of 79% is less than the target level of 100%. Enforcement activities described in section 2.F above are being conducted to improve this compliance rate.

C. Sanitary Sewer Management Plan Development and Certification

A reasonable amount of time is provided in the Sanitary Sewer System WDR for enrollees to develop their SSMPs with smaller communities having more time to complete their online CIWQS certification of required SSMP task elements than larger communities. Enrollees are required to certify that the final SSMPs are in compliance with the Sanitary Sewer System WDR within specified time frames. This certification is done electronically in the SSO database. Enrollees are required to obtain their governing board's approval at a public hearing for the plan for developing the SSMP and for the final SSMP certification. Enrollees do not send their SSMP to the State or Regional Water Boards for review or approval; however, they must make them available for review upon request.

The CIWQS online certification system for the SSMP provides State and Regional Water Board staff the ability to continuously monitor compliance of enrollees with SSMP development deadlines.

The current status of the SSMP certification requirements in the Sanitary Sewer System WDR is as follows:

- 39% of enrollees (425) have SSMP elements for which certification is not yet due. These will all be due on August 2, 2010.
- 53% of enrollees (510) have certified some, but not all of their SSMP elements.
- 13% of enrollees (147) have met all SSMP certification deadlines.
- 17% of enrollees (184) have not certified any of their SSMP elements and these elements are now past due.
- 38.6% of enrollees (421) have not met certification deadlines for one or more SSMP elements.

Enforcement activities described in section 2.F above are being conducted to improve the SSMP compliance rates.

D. Collection System Questionnaire

The Sanitary Sewer System WDR requires enrollees to complete collection system questionnaires and update them every 12 months. The collection system questionnaire is a survey of an enrollee's organization and facilities. Enrollees are required to submit information on operating and capital expenditure budgets, miles of pipe, number of employees, and population served on the questionnaire. The purpose of this survey 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, 83% of enrollees (906) have completed the collection system questionnaire and updated it annually, 4% (37) have completed the questionnaire but have failed to annually

update it, and 13% (148) of enrollees have never completed the questionnaire. Enforcement activities described in section 2.F above are being conducted to improve the Questionnaire compliance rates.

4. SPILL DATA SUMMARY

A. Statewide Reported Spill Data

A summary of statewide SSO and PLSD discharge data reported by participating enrollees since reporting requirements became effective on January 2, 2007 is presented in Table 1 below. The Sanitary Sewer System WDR does not prohibit all SSOs, only those that reach surface water or that cause a nuisance. As defined in the California Water Code section 13050 (m) (2), to be considered a nuisance an SSO would have to affect an entire community or neighborhood.

State Water Board staff are actively conducting checks and taking necessary actions to ensure the accuracy of the approximately 16,000 reported spill data records. Steps taken to ensure quality assurance and control include analysis of reported spills to identify erroneous data. When erroneous data are identified, the enrollee responsible for the data entry error is contacted and requested to correct it.

	# of SSOs	Total Volume of SSOs(gal)	Total Volume Recovered (gal)	Volume Reached Surface Water (gal)	Percent Recovered	Percent Reached Surface Water	Total Miles Pressure Sewer	Total Miles Gravity Sewer	Total miles of Laterals Enrollee Responsible for	# of SSOs per 100 miles Sewer	Volume Reaching Surface Water per 100 miles Sewer
SSOs	**15,718**	**55,340,238**	**13,783,909**	**45,381,460**	**25**	**82**	**17,619**	**177,033**	**17,673**	**7.4**	**21,374**

	Number of PLSDs	Total Volume of PLSDs(gal)	Total Volume Recovered (gal)	Volume Reached Surface Water (gal)	Percent Recovered	Percent Reached Surface Water	Total Miles Private Laterals	# SSOs per 100 miles of Private Laterals	Volume Reaching Surface Water per 100 miles Private Laterals
Private Laterals	**2,244**	**1,579,156**	**555,234**	**795,277**	**35**	**50**	**4,478,506**	**0.05**	**18**

Table 1 – Overall Statewide SSO and PLSD Reports (from 1/2/07 to 1/31/10)

The data summaries presented below are from analyses of data that staff has checked and have a high degree of confidence in. Staff will examine additional metrics when ongoing data cleanup by enrollees is completed, efforts to increase reporting become effective, and additional data is collected.

Overall SSO Reduction Program performance from September 2, 2007, when all Water Board regions in the state were required to start reporting, to January 31, 2010 is illustrated in Figure 4 below. As illustrated on this figure, there was a significant reduction in the “spill volume” and “spill volume reaching surface water” from September 2, 2008 to September 1, 2009 compared

to September 2, 2007 to September 1, 2008. Currently, for the partial year from September 2, 2009 to January 31, 2010, both “spill volume” and “spill volume reaching surface water” are on track to exceed the volumes spilled from September 2, 2007 to September 1, 2008.

The exact cause(s) for the reversal of the downward trend in spill numbers and spill volume after September 2009 is being evaluated by staff. This trend reversal may be due to a number of issues including changes in staffing due to the economic recession, changes in precipitation rates, and more thorough reporting.

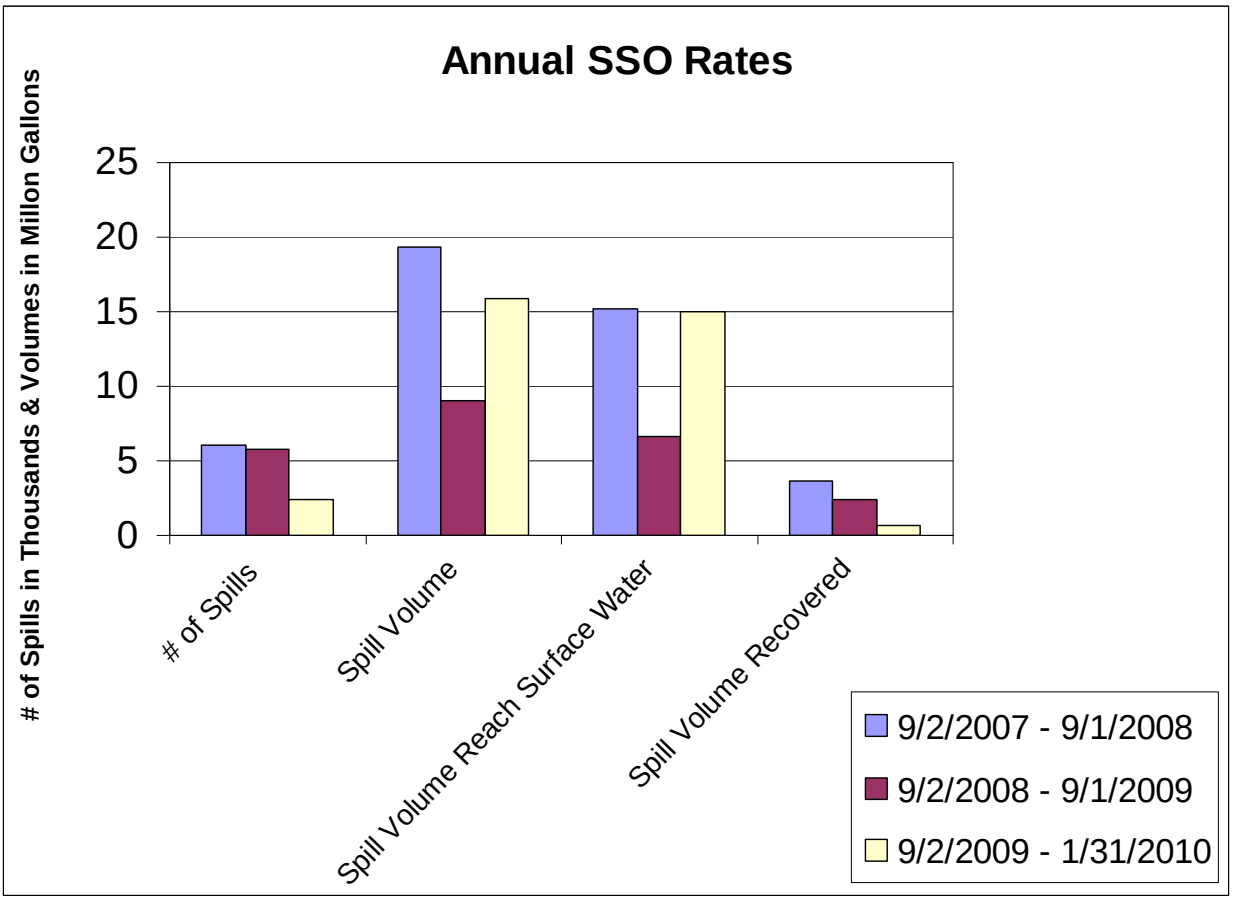

Figure 4 – 2007 to 2010 Annual SSO Trends

B. SSO and Private Lateral Sewage Discharge Trends

The percentage of reported sewage spills that reached surface water by spill size class is presented in Figure 5 below. Of 15,718 reported spills, 2,980 reached surface water. Of these, 2,189 or approximately 74% were less than 1,000 gallons.

The percentage of total sewage spill volume by spill size class that reached surface water is presented in Figure 6 below. Comparing Figures 5 & 6, 1.9% of spills account for 80.7% of the volume spilled to surface waters in the state since spill reporting was required. Also, 91.2% of the spills that occurred in the state since spill reporting was required account for only 4.5% of the spill volume that reached surface waters.

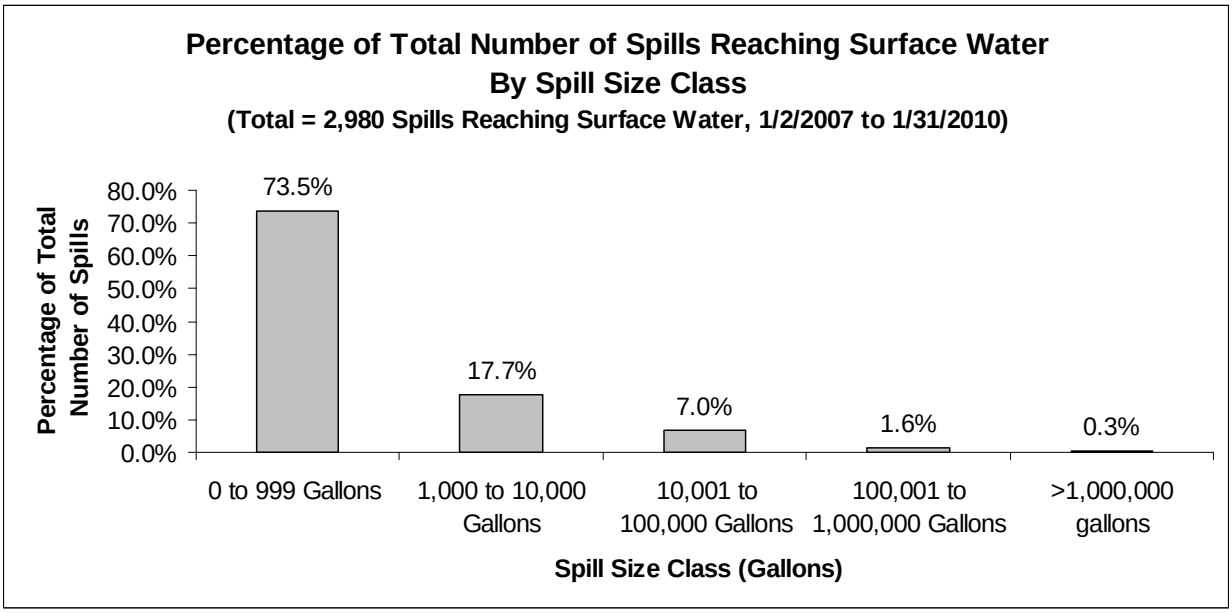

Figure 5 – Percentage of Total Number of Spills that Reached Surface Water by Size Class

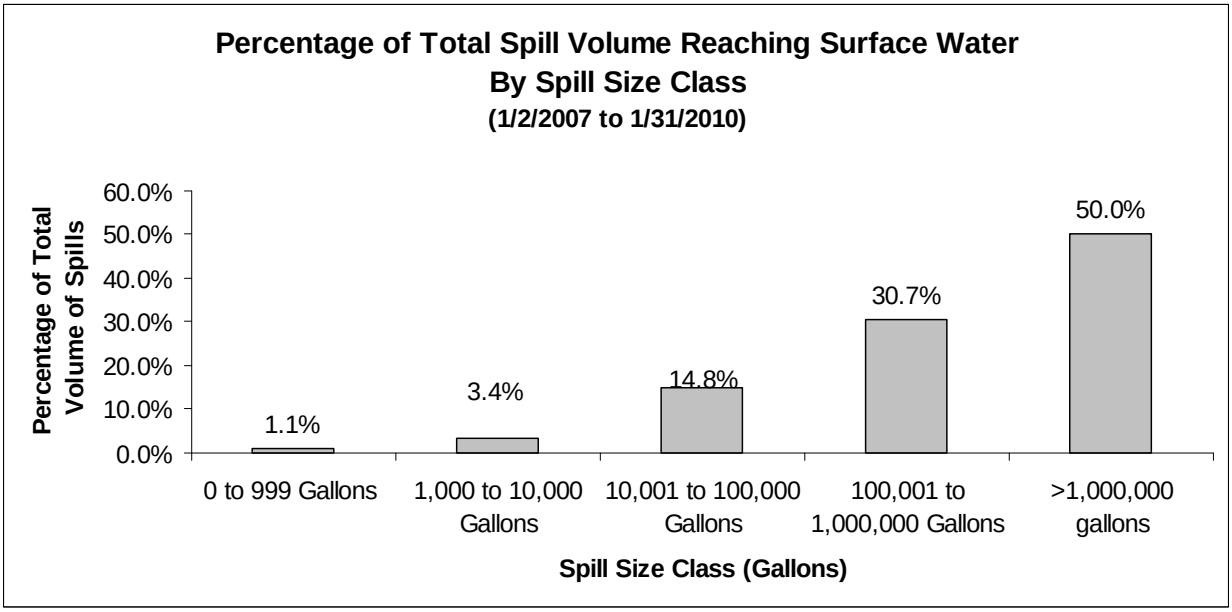

Figure 6 – Percentage of Total Volume of Spills that Reached Surface Water by Size Class

Examining the percentage of total number and volume of reported SSOs and PLSDs in the State by size class further illustrates the trends shown above for the SSOs and PLSDs reaching surface water. Ninety two percent of all SSOs and PLSDs in the State are less than 1,000 gallons, as illustrated in Figure 7 below.

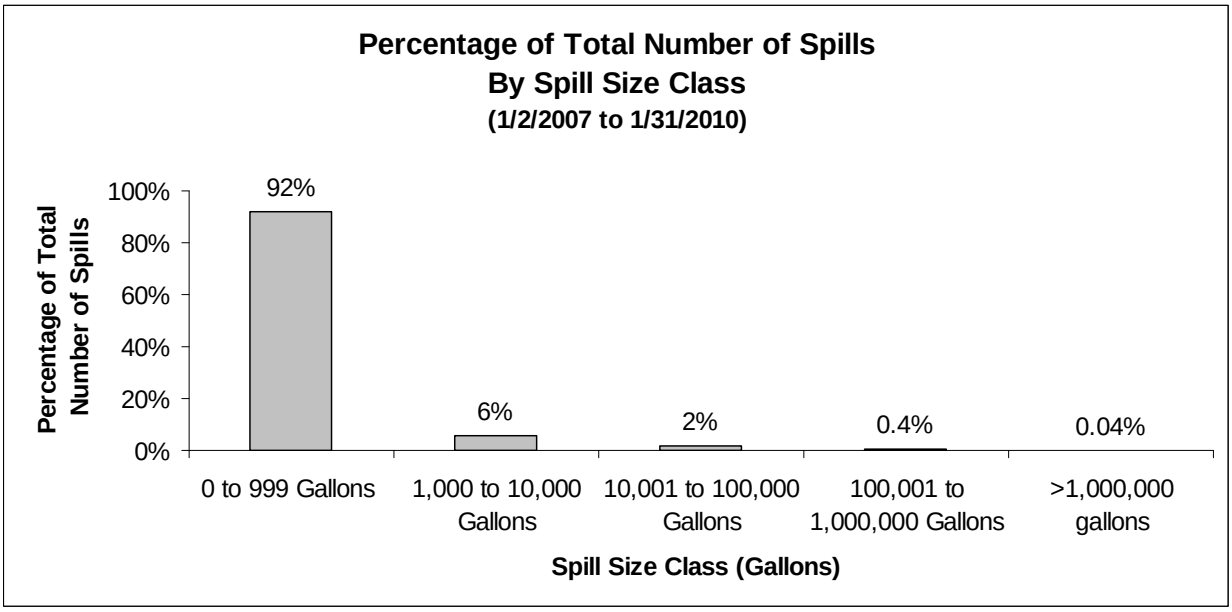

Figure 7 – Percentage of Total Number of Spills by Size Class

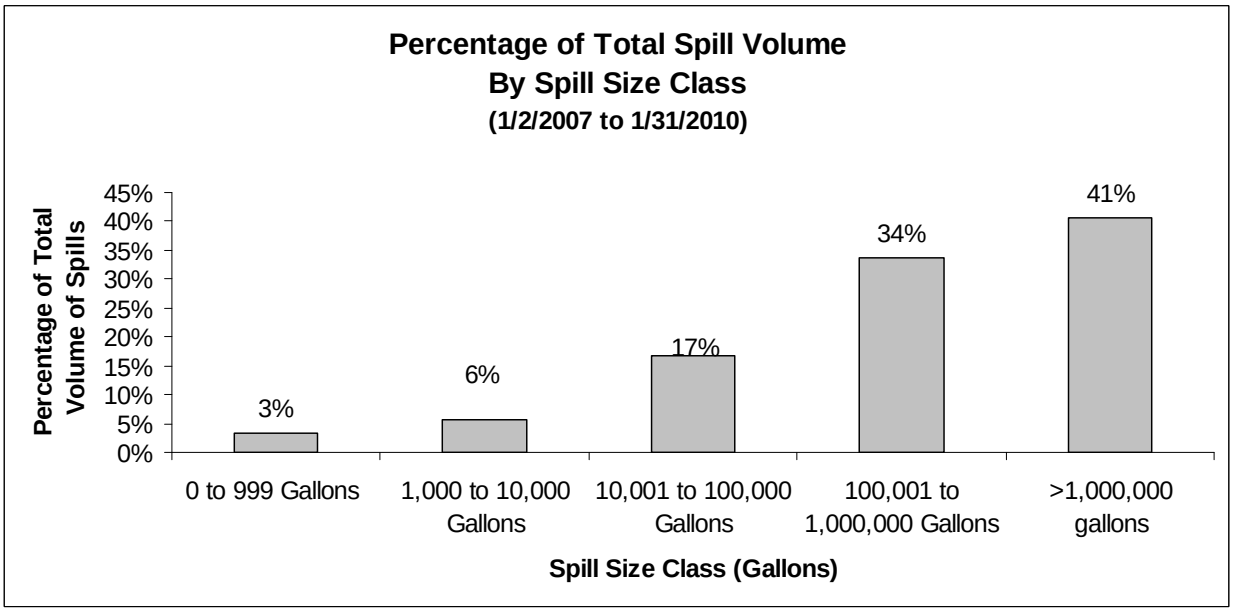

Figure 8 – Percentage of Total Volume of Spills by Size Class

Of the total percentage of reported volume of SSO and PLSD spills in the State, 75% of the total volume results from just 0.44% of the SSO and PLSD events as illustrated in Figures 7 & 8. Also, only 9% of the reported volume of SSOs and PLSDs in the State results from 98% of SSO and PLSD spill events.

C. Spill Causes

The percentage of total SSO and PLSD spills reported by spill cause are presented in Figures 9 and 10 below. The data indicates that common and manageable causes (root intrusion, grease

deposition, debris) are responsible for 78% of all SSO spills and 60% of all PLSD spills.

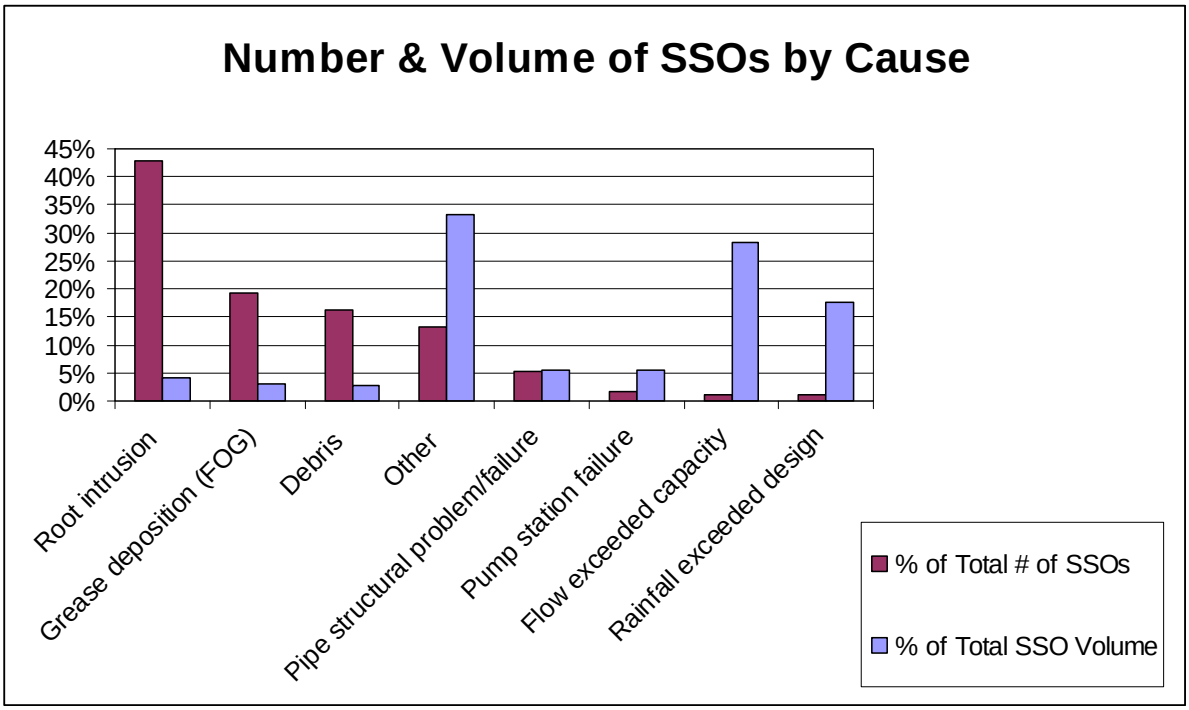

Figure 9 – Percent of Reported SSOs and Percent of Total Volume Spilled by Cause

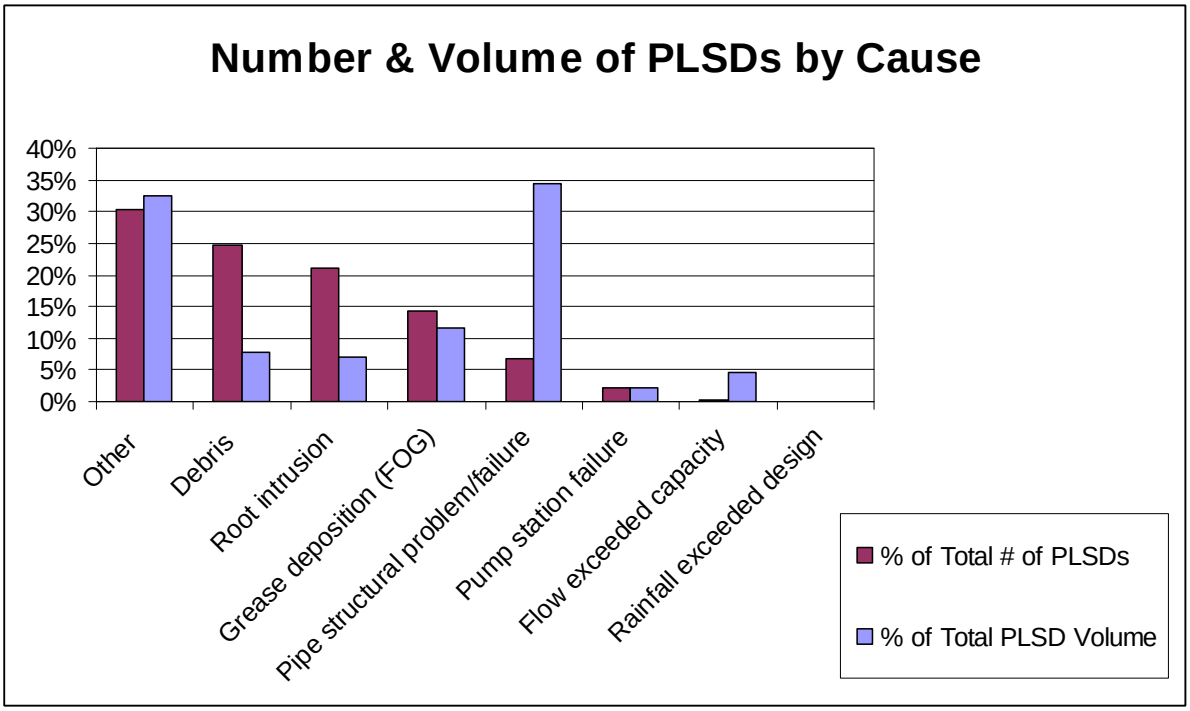

Figure 10 – Percent of Reported PLSDs and Percent of Total Volume Spilled by Cause

The “other” category noted in the charts includes the following causes for SSO and PLSD spills: unknown cause, multiple causes, vandalism, operator error, maintenance, improper

installation, valve failure, failure from diversion during construction, siphon failure, inappropriate discharge, and non-collection system related.

D. Sewage Spills by Pipe Characteristics

Pipe Diameter – SSO and PLSD report data indicates that 1) many enrollees are not reporting the sewer diameter in their reports (67% for SSOs and 73% for PLSDs) and 2) that at least 30% of SSOs and at least 27% of PLSDs occur in pipe sizes of 1-8". It is expected that smaller diameter pipes would be affected to a higher degree by the common causes of SSOs and PLSDs noted above (i.e., root intrusion, grease deposition, and debris).

Sewer Age – SSO and PLSD report data indicates that 1) many enrollees are not reporting the sewer age in their reports (84% of SSOs and PLSDs reported) and 2) that at least 40% of the volume of SSOs and PLSDs occurs in pipes 11-45 years of age. In light of the common causes of SSOs and PLSDs noted above (i.e., root intrusion, grease deposition, and debris), it is expected that the rates and voumes of SSOs and PLSDs may not be closely correlated with pipe age versus if pipe failure where a leading cause.

Pipe Material – SSO and PLSD report data indicates that 1) many enrollees are not reporting the sewer age in their reports (73% of SSOs and PLSDs reported) and 2) that at least 21% of the reported SSOs and PLSDs 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 any relationship between pipe material and SSOs and PLSDs.

Completeness of reporting by enrollees can be addressed by requiring submission of pipe characteristics in the Sanitary Sewer System WDR. At this time, this information is submitted voluntarily to the online reporting system.

E. Regional Spill Trends

The reported percentage of total state population served by collection systems in each region is presented in Figure 11. The data indicates that the San Francisco Bay, Los Angeles, Central Valley (Sacramento), Santa Ana and San Diego Water Board regions account for most of the population served by collection systems in the state.

The percentage of reported SSOs and PLSDs and spill volumes by Regional Water Board is also presented in Figure 11. The data indicates that: (1) the San Francisco Bay and Central Valley (Sacramento) Water Boards account for 64% of reported spills in the state (San Francisco Bay = 34%, and Central Valley (Sacramento) = 30%); and (2) that 91% of the reported spills occur in San Francisco Bay, Los Angeles, Central Valley, Santa Ana and San Diego Water Board regions. This result is consistent with the population served by sanitary sewer systems in these regions.

This data indicates that increased compliance efforts in the San Francisco Bay, Los Angeles, Central Valley (Sacramento) Water Board regions may yield the best results for reduction of the number of SSOs and the volume of sewage spilled.

Ongoing data quality control, cleanup, and collection efforts by staff are expected to improve the quality of spill data reported in the SSO online reporting system and allow additional trend analyses to be conducted with the data. These efforts will assist staff and enrollees in understanding the causes of sewage spills and in identifying collection system management and regulatory efforts yielding the greatest reductions in SSOs.

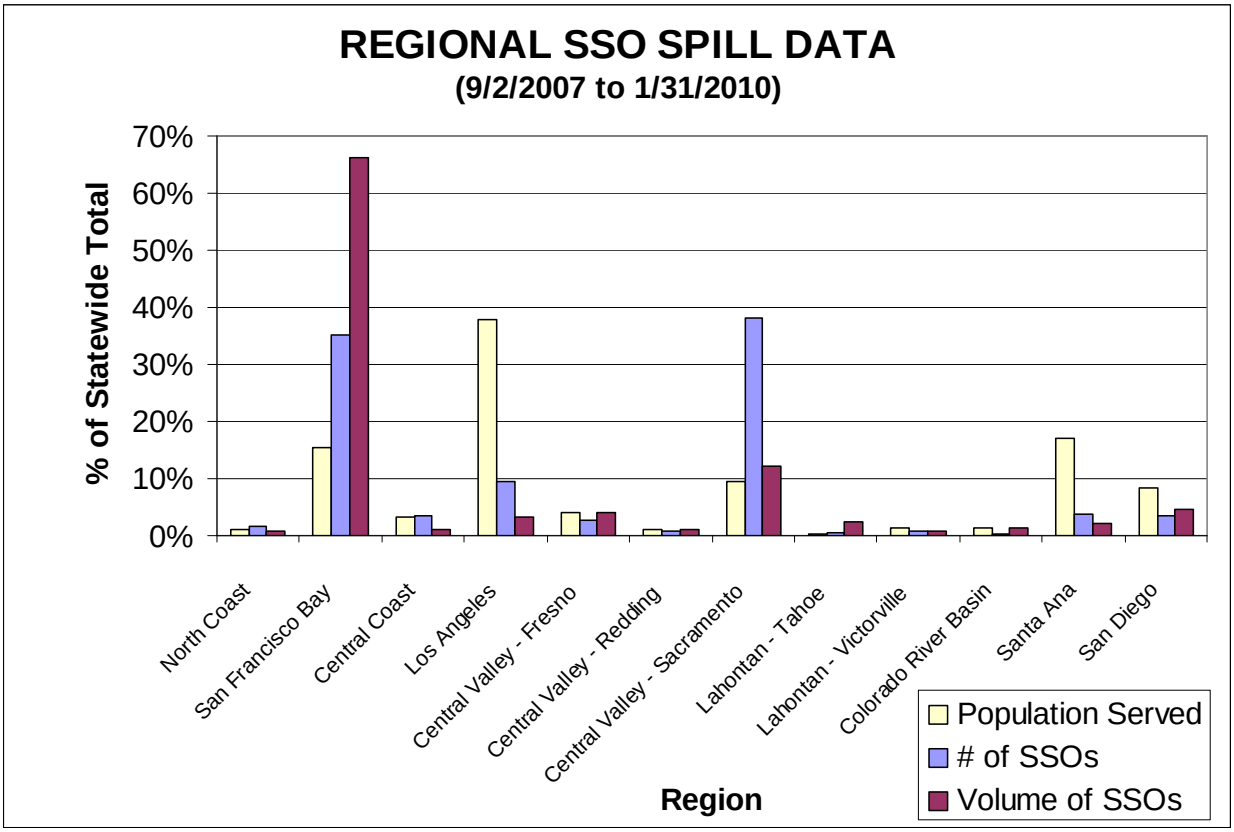

Figure 11 – Regional SSO Trends

F. Summary of Reported Spill Data

SSO data collected to date indicates that 90% of the volume of sewage spilled in the State has occurred from only 52 out of 1,091 collection systems enrolled in the Sanitary Sewer Systems WDR. A summary of the top 20 collection systems responsible for the largest spill events (i.e., spills greater than 50,000 gallons) ranked from highest volume of sewage spilled to lowest volume of sewage spilled in the State since reporting was required is presented in Table 2 below. The change in ranking since the 2009 Annual Compliance Report is also noted. Where a "-" is noted in the 2009 rank, this indicates the collection system was not in the top twenty list in 2009.

Region	Collection System	# of Events	2010 Rank*	2009 Rank
2	Richmond City CS	21	1	4
9	Carlsbad MWD CS	1	2	1
2	San Mateo CS	19	3	2
5S	Angels Camp CS	2	4	-
2	Town Of Hillsborough CS	6	5	3
2	San Bruno City CS	6	6	5
6A	Susanville CSD CS	1	7	6
9	San Diego City CS	4	8	16
9	Rainbow Municipal Water Dist CS	1	9	8
9	City Of Laguna Beach CS	2	10	9
5S	Sacramento Area Sewer District CS	1	11	-
2	Mt. View SD CS	1	12	11
5F	City Of Visalia CS	1	13	12
5S	Dry Creek, Zone 173 CS	1	14	13
2	Sonoma Valley County S.D. CS	5	15	14
5F	City Of Bakersfield CS	1	16	15
9	City Of Vista CS	1	17	17
7	Coachella Valley Water District CS	2	18	18
2	Novato And Ignacio CS	3	19	19
9	Santa Rosa WRF-Recycled Wtr CS	2	20	20

* Rank 1 = highest volume spilled, Rank 20 = lowest volume spilled

Table 2 – Top Twenty Enrolled Collection Systems Ranked by Volume of Sewage Spilled

5. CONCLUSIONS

Continuing outreach and education along with issuance of enforcement actions for Sanitary Sewer System WDR enrollment and reporting violations are being conducted to correct current enrollment and reporting deficiencies and achieve full participation of all applicable collection system agencies in the SSO Reduction Program. Current activities being conducted for the Sanitary Sewer System WDR review and update are expected to result in improved enforceability and clarification of elements of the Sanitary Sewer System WDR that will aid in its implementation by staff and stakeholders.

Ongoing enhancements to the CIWQS SSO Module that are being developed by staff and

stakeholders are expected to improve the quality of spill data collected and aid in analyses of spill trends and causes. These activities, along with current efforts to establish good indices of collection system performance, are expected to provide additional insight to direct staff actions that will reduce the number of SSOs and volume of sewage spilled in the state in the most efficient manner given available resources.

Once full SSO Reduction Program participation is achieved, increased resources will be needed to fully address accuracy and completeness of spill reporting by enrollees. These resources will be required either at the State or Regional Water Board level to conduct collection system audits. Currently, the limited staff resources provided for the SSO Reduction Program do not allow for extensive auditing activities.