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v. FEBRUARY 19, 2016

# Citizen Enforcement and Sanitary Sewer Overflows in California

REVIEW DRAFT — NOT FOR CIRCULATION

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# EXECUTIVE SUMMARY

This report analyzes data we collected on citizen enforcement activity in California related to sanitary sewer overflows (SSOs) from 1996 through June 2015. The first four chapters provide technical, legal, and regulatory context for the analyses presented in later chapters. The report is structured as follows:

## Technical, legal, and regulatory context

We present basic information that provides important context for understanding the remainder of the report in **Chapter 1**. This chapter describes sanitary sewer systems (also known as collection systems), SSOs, and the division of public and private responsibility for SSOs in California. It summarizes trends in the frequency, causes, and volume of SSOs in the state between 2007 and mid-2015 and provides information about the known and potential environmental and public health impacts of SSOs. Finally, the chapter briefly discusses changes in collection system management, with a focus on current understanding of the requirements for effective management.

As **Chapter 2** describes, SSO regulation in California involves both federal and state components. We explain the role of the Clean Water Act (CWA) and related regulations, then delve into the more detailed and explicit requirements adopted by the State Water Resources Control Board in the 2006 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (the "Statewide Permit"). Consistent with the CWA, the Statewide Permit prohibits any SSO that results in a discharge to waters of the United States. It also prohibits any SSO that creates a nuisance. Among other things, the Statewide Permit requires collection systems to develop and implement a sewer system management plan and to report all SSOs to a statewide database that is publicly accessible online.

Government enforcement is the focus of **Chapter 3**. The chapter provides an overview of both the authority and the discretion that federal and state regulators have to pursue enforcement actions when collection system agencies violate the CWA or the Statewide Permit. This information is important context for understanding the functional role of citizen enforcement and the interaction between citizen and government enforcement actions (the subject of **Chapter 7**).

We outline the requirements for citizen suits brought under the CWA in **Chapter 4**. This chapter also summarizes the types of injunctive and monetary relief potentially available to citizen plaintiffs, as well as the availability of attorneys' fees in citizen suits and settlements. In closing, the chapter touches on the potential interactions of concurrent citizen and government lawsuits.

## Empirical analysis

In **Chapter 5**, we summarize the data and methods we used to characterize citizen enforcement activity for this report. The chapter provides an overview of the primary paths and outcomes of SSO-related citizen enforcement actions, the collection systems and collection system agencies that have experienced citizen enforcement, the primary citizen plaintiffs, and the characteristics of citizen lawsuits. We found information about 90 citizen enforcement actions related to SSOs from 1996 to mid-2015. These actions were initiated by 3 primary citizen plaintiff groups and 15 other plaintiffs against 88 different collection systems belonging to 83 different collection system agencies. The actions were generally resolved through settlements and included 61 lawsuits filed by citizen plaintiffs, 2 additional lawsuits filed by regulators in which citizen plaintiffs intervened, 20 pre-litigation settlements (entered into without litigation), and 7 outstanding NOIs (for which no further legal action was evident).

The next four chapters explore different potential proxy measures for evaluating the effects of SSO-related citizen enforcement activity on CWA and Statewide Permit compliance, collection system infrastructure and management, and water quality. Although there are many potentially confounding factors, and the data do not support strong conclusions at this point, we believe the results are interesting and potentially suggestive. Each chapter opens with an explanation of the data and methods used.



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In **Chapter 6**, we analyze the injunctive and monetary terms of settlement agreements resolving citizen enforcement actions and the duration of settlement agreements. We were able to find and analyze settlement agreements related to 71 enforcement actions. These contained an array of injunctive terms, most related to collection system management, that varied from plaintiff to plaintiff and from one agreement to the next. Payment mandates in settlement agreements or related court documents fell into 5 major categories attorneys' fees, payments to support settlement compliance monitoring, payments for so-called supplemental environmental projects, funding for private sewer lateral replacement grant or loan programs, and civil penalties.

We analyze the interaction of citizen and government enforcement actions in **Chapter 7**. The chapter first provides an overview of federal and state enforcement actions against California collection system agencies, then focuses in on government enforcement actions against collection systems that have also experienced citizen enforcement. Our analysis suggests that 51% of the collection systems that have experienced citizen enforcement also experienced formal government enforcement at some point during the past two decades. 23% experienced formal government enforcement action within 2 years of citizen action. The degree of overlap of the violations addressed and the remedies sought in citizen and government actions varied.

The following chapter, **Chapter 8**, compares aggregate performance metrics for collection systems that have experienced citizen enforcement with those of systems that have not, using data covering the time period from the time SSO reporting to the statewide database was first required in 2007 through October 2015 The metrics we analyzed were: the number of SSOs reported, spill rate (the number of SSOs per 100 miles of collection system per year), the volume of SSOs reported, and spill volume rate (the volume of SSOs per 1,000 people served per year). Overall, systems that have experienced citizen enforcement (~8% of all systems) reported approximately 60% of all SSOs in California. Although both collection systems that have and have not experienced citizen enforcement reduced their SSO numbers and spill rate over the period of record, systems that have experienced citizen enforcement demonstrated greater reductions. Regional trends are more complex. Systems reporting more SSOs, higher SSO volumes, higher spill rates, and higher spill volume rates were more likely to have experienced citizen enforcement than would be expected if citizen enforcement were random. Larger collection systems, systems including large amounts of laterals, systems with larger numbers of water crossings, systems serving larger populations, and systems with larger annual budgets were also more likely to be targeted.

In **Chapter 9**, we analyze post-enforcement changes in the performance metrics of the individual collection systems that experienced citizen enforcement. For each citizen enforcement action initiated at least 9 months after the collection system was first required to report to the SSO database and before February 1, 2015, we divided the targeted collection systems' SSO data into two groups: (1) the period from the time reporting began in 2007 to the date citizen enforcement action was initiated, and (2) the period from the time citizen enforcement action was initiated through October 2015. After citizen enforcement was initiated, spill rate decreased for 81% of the collection-system/citizen action pairs we were able to analyze, spill rate for SSOs reported as reaching surface water decreased for 66%, spill volume rate decreased for 69%, and spill volume rate for the SSO volume reported as reaching surface water decreased for 60%. This chapter also provides specific examples to illustrate the range of circumstances and trends in performance metrics we encountered.

### Summary and discussion

In **Chapter 10**, we summarize the major themes revealed by the empirical analyses presented in the preceding chapters, including the limitations of the data and analytical methods employed in this report.

Finally, we take a step back to discuss the controversy that was a major motivating force for this research—stakeholders' sometimes widely divergent perceptions of the appropriateness and effectiveness of SSO-related citizen enforcement—in **Chapter 11**. We note that questions about what role citizen enforcement should play under the CWA are fundamentally values based and, therefore, cannot be answered by data regarding the nature and impacts of citizen enforcement activity. However, data can, and should, inform the conversation, and additional data could be useful. The question of whether particular citizen suits are appropriate or not



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cannot be answered without defining and defending metrics for evaluation. Therefore, this chapter offers suggestions for how to make explicit some of the implicit ideas that may be making communication between stakeholders challenging.

## ABBREVIATIONS

| | |
|---|---|
| **ACL** | Administrative civil liability |
| **AO** | EPA administrative order |
| **Board** | State or Regional Board (see below) |
| **CAO** | Cleanup and abatement order |
| **CCTV** | Closed-circuit television |
| **CDO** | Cease and desist order |
| **CIWQS** | California Integrated Water Quality System |
| **CMMS** | Computerized maintenance management systems |
| **CMOM** | Capacity, management, operation, and maintenance |
| **CSO** | Combined sewer overflow |
| **CWA** | Clean Water Act |
| **EPA** | U.S. Environmental Protection Agency |
| **FOG** | Fats, oils, and grease |
| **GIS** | Geographic information systems |
| **MS4** | Municipal separate storm sewer system |
| **NOI** | Notice of intent to sue |
| **NPDES** | National Pollutant Discharge Elimination System |
| **POTW** | Publicly owned treatment works |
| **Region 1** | North Coast Regional Water Quality Control Board region |
| **Region 2** | San Francisco Regional Water Quality Control Board region |
| **Region 3** | Central Coast Regional Water Quality Control Board region |
| **Region 4** | Los Angeles Regional Water Quality Control Board region |
| **Region 5** | Central Valley Regional Water Quality Control Board region |
| **Region 6** | Lahontan Regional Water Quality Control Board region |
| **Region 7** | Colorado River Regional Water Quality Control Board region |
| **Region 8** | Santa Ana Regional Water Quality Control Board region |
| **Region 9** | San Diego Regional Water Quality Control Board region |
| **Regional Board** | One of the Regional Water Quality Control Boards |
| **SEP** | Supplemental environmental project |
| **Spill rate** | SSOs / 100 miles of collection system / year |
| **Spill volume rate** | SSO volume in gallons / 1,000 people served / year |
| **SSO** | Sanitary sewer overflow |
| **SSO database** | CIWQS online SSO database |
| **Statewide Permit** | Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, State Board Order No. 2006-0003-DWQ |
| **State Board** | State Water Resources Control Board |
| **U.S. DOJ** | U.S. Department of Justice |
| **WDRs** | Waste Discharge Requirements |



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# INTRODUCTION

Every day, Californians produce many millions of gallons of wastewater, yet most of us don't think much about it after it flows down the drain. How we deal with sewage is a critically important, if sometimes under-appreciated[2] element of public and environmental health. Most communities in California rely on an extensive system of interconnected pipes to collect wastewater and deliver it to a treatment facility.[3] There, a complex interplay of physical, biological, and chemical processes reduces pollutants to acceptable levels before wastewater can be discharged legally into waters of the United States.[4] However, sometimes, wastewater escapes from the collection system before it arrives at the treatment facility, resulting in a sanitary sewer overflow (SSO).[5] SSOs can occur even in well managed collection systems.[6]

The federal Clean Water Act (CWA) has been interpreted to prohibit SSOs that reach waters of the United States, and other SSOs may violate the terms of a National Pollutant Discharge Elimination System (NPDES) permit.[7] Additionally, since 2006, California has specifically regulated SSOs at the state level, imposing requirements for collection system agencies to engage in sewer system management planning and to report all SSOs to a publicly accessible online database, among others.[8] The unique database facilitates tracking of statewide-, regional-, and agency-level SSO trends and helps regulators and potential citizen plaintiffs identify potential enforcement targets.

While government authorities are generally responsible for enforcement of the law, a citizen suit provision in the CWA allows private individuals or groups to address gaps in government enforcement.[9] This report examines the nature and impacts of SSO-related citizen enforcement actions initiated under the CWA's citizen suit provision in California. To our knowledge, it is the first in-depth analysis aimed at evaluating the effectiveness of SSO-related citizen enforcement in achieving compliance with and furthering the goals of the CWA.[10]

The project was motivated by the sometimes widely divergent perceptions of citizen enforcement held by three stakeholder groups—collection system agencies, environmental groups, and state and federal regulators.

Regulators do not adhere to a strict zero-tolerance enforcement standard for SSOs to waters of the United States. Instead internal policies identify water-quality enforcement priorities.[11] Theoretically, however, a citizen plaintiff could file and win a lawsuit against a collection system agency based on a single, small SSO reaching waters of the United States. Collection system agencies suggest that, together, strict liability for discharges that violate the CWA, California's easily accessible SSO database, and the availability of attorneys' fees to prevailing plaintiffs combine to create the potential for citizen enforcement activity motivated more by the prospect of financial gain than by the potential for water quality improvements.[12] They argue that the benefits of citizen enforcement often do not outweigh its burdens: for example, settlement agreements require agencies to do things they are already required to do, are currently doing, or are planning to do or may force agencies to use specific, not necessarily efficient, methods to achieve particular goals.[13]

On the other hand, environmental groups see citizen enforcement as crucial to addressing collection system management issues that threaten water quality, ecosystems, and public health. They argue that state and federal regulators are overwhelmed, juggling many different priorities, and don't always identify or fully address problem collection systems due to bandwidth constraints or political pressures to avoid overburdening fellow public agencies.[14] They contend that most settlement agreement provisions involve new commitments, but that even those that require collection system agencies to implement existing policies and procedures are beneficial because they impose new consequences for failure to follow through.[15]

For this report, we collected and analyzed data on SSO-related citizen enforcement activity in California. **Chapters 1 through 4** provide technical, legal, and regulatory context for the empirical analyses presented in **Chapters 5 through 9**. **Chapter 10** summarize the major themes revealed by the empirical analyses, including the limitations of the data and analytical methods employed in the report. Finally, **Chapter 11** explores stakeholders' divergent perceptions of the appropriateness and effectiveness of SSO-related citizen enforcement and offers suggestions for moving the conversation forward.



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# CHAPTER 1 – SSOs: Definitions, impacts, and management

This Chapter provides an overview of sanitary sewer systems and sanitary sewer overflows (SSOs), summarizes trends in the frequency, cause, and volume of SSOs in California from 2007 (when reporting under the Statewide Permit began) through mid-2015, explains the state of knowledge about the environmental and health impacts of SSOs, and briefly reviews effective collection system management.

## A. Definitions and causes of SSOs

### 1. Sanitary sewer systems

A sanitary sewer system is a wastewater collection system that gathers sewage from residential, commercial, and industrial sources and conveys it to a treatment facility.[16] We use the terms "sanitary sewer system" and "collection system" interchangeably throughout this report.

Wastewater generally flows downslope through a collection system under the influence of gravity, passing through a network of increasingly larger pipes.[17] Building sewers empty into small diameter lateral lines which connect to gravity mains, and, depending on the system, smaller gravity mains may lead to larger trunk sewers, and, finally, to large interceptor sewers.[18] Manholes and cleanouts provide access for sewer system inspection and maintenance activities. [19]

At some points within a collection system, wastewater may need to be moved from a lower elevation to a higher elevation. Where this is necessary, a pumping or compressor station (also known as a lift station) feeds wastewater into a pressurized sewer line known as a force main.[20]

In addition to wastewater, sanitary sewer systems can handle limited amounts of groundwater and surface runoff (e.g., stormwater) that enter sewer pipes and access points via infiltration or inflow.[21]

### 2. Sanitary sewer overflows (SSOs)

After wastewater enters a sanitary sewer system, it should exit by only one route—through a treatment plant.[22] However, collection systems don't always function as intended. A sanitary sewer overflow (SSO) is defined as wastewater that escapes the collection system before reaching the headworks of a treatment plant.[23] An SSO could potentially occur at any point, including a manhole or cleanout, a weak point or fracture in a sewer pipe, a pumping station, or in a building.[24]

The volume of an individual SSO can range from less than 1 gallon to many millions of gallons. Discharges can flow onto streets, into homes, onto or into soil, into the storm sewer system, or directly into surface waters.

A variety of circumstances, working alone or in concert, can lead to SSOs. **Table 1** summarizes the main causes of SSOs—structural defects, blockages (caused by debris; deposits of fats, oils, and grease (FOG); or root intrusion), capacity issues, and operational or other issues—and potential contributing factors.

#### Wet-weather vs. dry-weather SSOs

The characteristics and impacts of wet-weather SSOs can differ substantially from those that take place during dry weather (see **Parts B** and **C** of this chapter, below). Dry-weather SSOs consist of wastewater and limited amounts of infiltrated groundwater, but wet-weather SSOs often include a large proportion of rainfall-derived inflow and infiltration. In some cases, wet weather inflow and infiltration can cause collection system flow to swell to many times the volume of dry-weather flow.[25] These higher flows can exacerbate or accelerate other problems, like blockages or pipe ruptures.



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**Table 1. Immediate causes of SSOs and potential contributing factors.**[26]

| Immediate causes of SSOs | | Potential variables and contributing factors |
|---|---|---|
| **Structural defects** | Misaligned pipe segments, pipe rupture, corrosion, other defects | Pipe composition, pipe-segment length, joint material, construction problems, surface exposure and erosion, differential subsidence, seismic activity, natural aging, freeze/thaw cycles,groundwater and soil chemistry, inadequate or improper maintenance |
| | Debris | Construction, vandalism, flushing of inappropriate materials, inadequate cleaning or other maintenance, introduction via upstream cleaning processes |
| **Blockages** | Deposits of fats, oils, and grease (FOG) | Improper disposal of household or commerc ial FOG, lack of grease traps/interceptors in food service establishments, inadequate cleaning |
| | Root intrusion | Structural defects that allow root entry, inadequate cleaning or repair, depth of the water table, plant water stress (drought may exacerbate root growth to tap water carried in sewer lines) |
| **Capacity Issues (condition)** | Excessive infiltration | Cracks and other defects in sewer pipes and joints that allow groundwater to seep into the collection system, local geology/hydrology, exfiltration from the storm sewer system |
| | Excessive inflow | Illicit or accidental connections with the storm sewer system or with individual property's downspouts, sump pumps, etc; loose, missing, or damaged manhole or cleanout covers; climate; geographic variations in the intensity, frequency, and duration of precipitation events |
| | Inadequate collection system capacity | Rapid or inadequately accounted for development in the service area; localized bottlenecks due to too-small pipe diameter, etc.; inadequate in-system or offline storage |
| | Inadequate treatment capacity | Rapid or inadequately accounted for developmentin the service area; treatment unit rate limitations |
| **Operational and other issues** | Human error | Improper installation or maintenance, d isregarding or disconnecting warning mechanisms, improper manual pump operation or automation programming |
| | Mechanical / electrical failure | Wear and tear on moving partsin pumps, inadequate pump maintenance, power surges or outages |
| | Vandalism | Accessibility of vandalized infrastructure |

### Subsurface SSOs: Exfiltration

SSOs are often thought of as above-ground discharges, but they can also occur below the surface of the ground. When wastewater leaks into soils underground, a condition commonly known as exfiltration, it is less easily detected and less likely to be addressed than an SSO with a clear surface expression.[27] Pipe condition, relative groundwater levels, and soil type are important factors in determining whether, when, and where rainfall runoff or groundwater will infiltrate, or wastewater will exfiltrate, the sewer system.[28] Groundwater and precipitation conditions may vary substantially over time, and sediment may temporarily clog and seal openings like gaps and joints in sewer pipes.[29] Although exfiltration from pipe defects is likely significant in some California collection systems, information about the occurrence , quantity, and impacts of exfiltration remains limited.[30]

## 3. Division of public and private responsibility for SSOs in California

In this report, we focus on public sanitary sewer systems more than one mile long (shown in **Figure 1**, below). These systems are regulated under California's Statewide Permit. (For a description of the legal and



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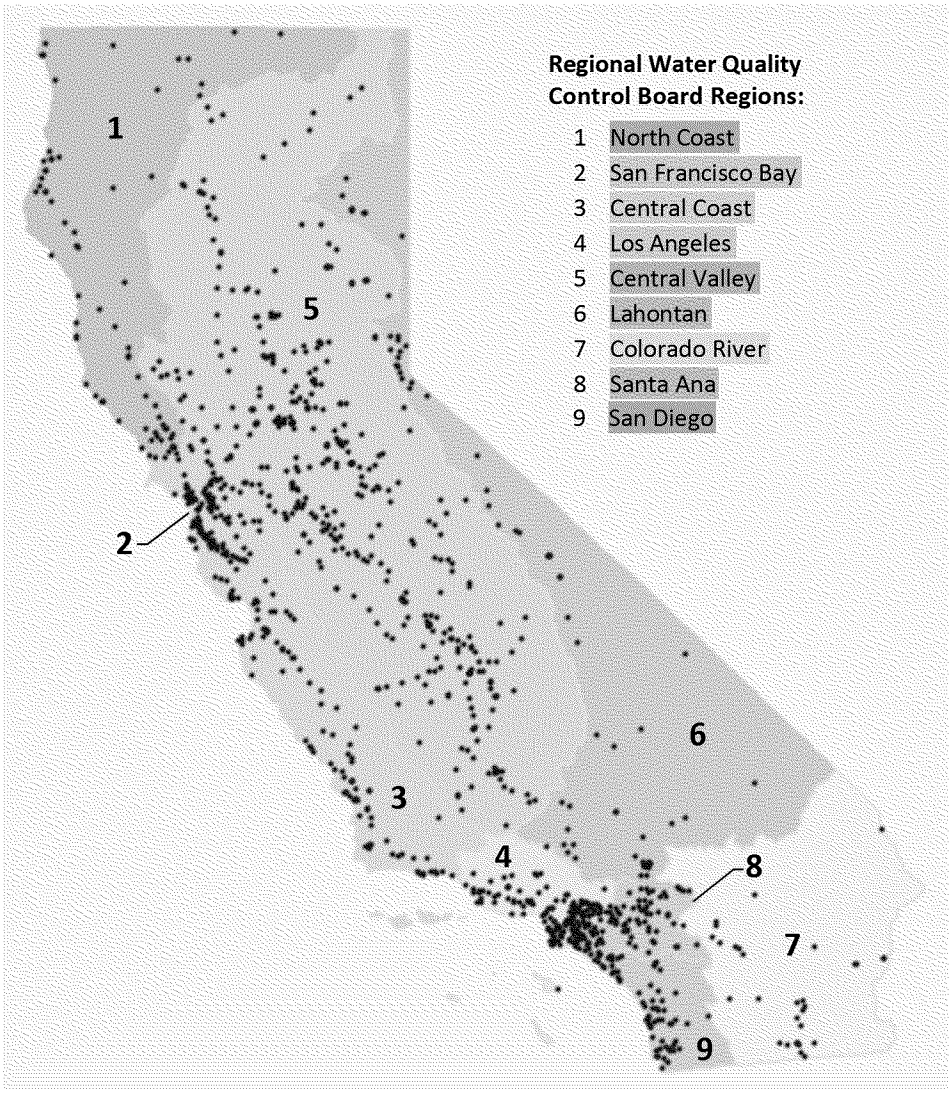
regulatory framework that governs SSOs in California, see **Chapter 2**.) A public collection system agency is legally responsible only fo r SSOs that result from problems within its system.[31]

The infrastructure under public ownership varies from agency to agency. Some public collection systems include sewer mains only, while building owners are solely responsible for maintaining their respective laterals. This is the case for the majority (57%) of the public systems regulated under the Statewide Permit. [32] Others include at least a part of each lateral. The upper lateral extends from the building to the property line, and the lower lateral extends from the property line to the point of connection with the sewer main.[33] More than one-quarter (26%) of public systems regulated under the Statewide Permit include lower laterals, leaving building owners to maintain the upper laterals.[34] An additional 16% of public systems include both upper and lower laterals.[35]

**Figure 1. Distribution of public sanitary sewer systems in California.**[36] Black dots represent the 1,093 public sanitary sewer systems in California that are more than one mile long. These systems, which are clustered around population centers, are regulated under a Statewide Permit (described in **Chapter 2.B.1**) administered by the State Water Resources Control Board and nine Regional Water Quality Control Boards, whose jurisdictions are shown below. These regulatory agencies have primary water quality enforcement responsibilities in their regions.



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**BOX 1.** Other sewer discharges and treatment facility issues

This report focuses on SSOs—discharges from sanitary sewer systems. A number of related issues occur in other types of sewer systems or in treatment facilities downstream of sanitary sewer systems. We describe these briefly below to help the reader understand the distinctions between these issues and our focus: SSOs.

**Types of sewer systems (and their discharges):**

Most California communities have two separate sewer systems:

- A sanitary sewer system (see above) collects and conveys wastewater to a facility for treatment.
- A physically distinct municipal separate storm sewer system (MS4) collects and conveys untreated stormwater (runoff from rainfall or snowmelt), often discharged directly to local waters.[37]

However, legacy combined sewer systems still serve parts of San Francisco and Sacramento.[38] These systems collect and convey both wastewater and stormwater to treatment facilities.[39] During normal conditions, the full combined flow undergoes treatment, but heavy or prolonged rainfall causes the combined flow volume to exceed the capacity of the collection system, the treatment plant, or both. As a result, combined sewers include intentional overflow points where combined sewer overflows (CSOs) of wastewater diluted with stormwater release pressure on the system.[40] Unlike SSOs to waters of the United States (see **Chapter 2.A.2**, below), CSOs to waters of the United States are not prohibited under the CWA.[41] Although this report focuses on SSOs, CSOs and wet-weather SSOs pose somewhat similar risks to public and environmental health (see **Part C** of this chapter, below).

**Treatment facility issues:**

Under normal conditions, wastewater that enters a treatment facility from a combined or separate sanitary sewer undergoes at least secondary treatment before exiting as effluent (see **Chapter 2.A.2**).[42] However, under some circumstances, wastewater discharged from a treatment facility undergoes partial treatment or no treatment at all.

- Bypass, as defined in EPA regulations, is "the intentional diversion of waste streams from any portion of a treatment facility."[43] It is prohibited except under limited circumstances. When it aids "essential maintenance," bypass is allowed unless it causes exceedence of effluent limitations.[44] By contrast, bypass that exceeds effluent limitations is prohibited unless (1) it "was unavoidable to prevent loss of life, personal injury, or severe property damage," (2) "[t]here were no feasible alternatives, " and (3) the permittee submitted proper notice (either before or after the fact).[45] Although this regulatory definition is limited to diversions from within a treatment facility, the term "bypass" is also used in the collection system context to describe the diversion of wastewater around a sewer rehabilitation project (see **Chapter 2.A.3.a**).

- Blending is a method that treatment plant operators have used to deal with peak wet-weather flows. The technique involves routing some flow around biological treatment and combining it with fully treated effluent before discharge to avoid overwhelming biological treatment processes and/or causing backups in the collection system that result in SSOs (or CSOs, in combined sewer systems).[46] Although blending has seen common use in the past, the practice is controversial. While EPA's approach to blending remains somewhat in flux,[47] California regulators have been working with treatment plant operators to reduce their use of and need for the practice.[48] Measures that reduce collection system inflow and infiltration diminish the need for wet-weather blending and the likelihood of wet-weather SSOs.

- Upset is "an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee."[49] Properly documented upset is an affirmative defense to an enforcement action .[50] Although it has sometimes been invoked in the context of SSOs ,[51] the upset defense is not a good fit for noncompliance with discharge prohibitions in the collection system context (see **Chapter 2.A.3.a**).



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## B. Trends in the frequency, causes, and volume of SSOs in California, 2007 to 2015

Public collection system agencies regulated under the Statewide Permit (see **Chapter 2.B.1**) have been required to report SSOs caused by problems in their collection systems to the State Water Resources Control Board's (State Board's) online SSO database since 2007. The deadline to start reporting was phased in by region, with all regions reporting by September 2, 2007.[52]

The resulting data show that the number, causes, and volume of SSOs statewide and within each region have varied from month to month and year to year.[53]

### 1. Frequency of SSOs

A strong seasonal cycle is evident in the frequency of SSOs—more are reported during the wetter winter season, while fewer SSOs are reported during the drier summer months (**Figures 2A and 3**). In general, the number of SSOs occurring during the peak month (usually January or December) decreased from September 2007 through 2012, as did the number of SSOs that occurred during the driest month of each year (**Figure 2A**). The trend since 2012, when the ongoing drought began, is more or less flat, but has been a slight uptick in the number of SSOs reported during the driest months (**Figure 2A**). The majority of the SSOs reported in the state have consistently occurred in the San Francisco Bay Region (Region 2) and the Central Valley Region (Region 5) (**Figures 2A and 4**).

### 2. Volume of SSOs

A seasonal cycle is also evident in SSO volume, but the magnitude of variation is much larger (**Figure 2B**). Total spill volume is highly variable, with high monthly volumes often resulting from a relatively small number of very large spills. Over the past few years of drought, monthly SSO volume has been less variable, likely a result of less frequent large inflow and infiltration events. The San Francisco Bay Region (Region 2) and the Lahontan Region (Region 6) have contributed the most the statewide SSO volume.

### 3. Causes of SSOs

Blockages due to debris, FOG, or root intrusion have been identified as the primary cause of most SSOs (79%) in California (**Figures 3 and 4**). Root intrusion was the primary cause of almost half (45%) of SSOs.

While only 2% of SSOs were identified as caused by capacity ("condition" in **Figures 3 and 4**) issues, this percentage may be misleadingly low. The SSO database lists a single cause for each SSO[54] even though more than one factor may have played an important role. For example, a wet-weather SSO might occur in a capacity-limited part of a collection system that also has substantial FOG buildup. Although flow exceeding capacity may have been a significant contributing factor, the agency could report the SSO as caused by FOG. Nonetheless, the future risk of similar SSOs might be most effectively addressed by taking a two pronged approach that both addresses the FOG problem by performing timely, appropriate maintenance and implementing a FOG source control program and reduces the capacity problem by identifying and eliminating sources of inflow and infiltration and, if necessary replacing the pipe with a larger one or installing a parallel relief sewer.[55] Collection system agencies may internally recognize and address multiple causes of SSOs, but the SSO database could better reflect this—and provide more accurate information—if it allowed agencies to report a secondary cause.

There is a seasonal cycle in the numbers of SSOs for all categories of causes except "structural"—in general, more SSOs occurred during the winter months and fewer during the summer months (**Figure 3**). Droughts, like the current one, can affect SSO occurrence in several, sometimes divergent, ways. For example, capacity-related SSOs are less likely to occur during droughts because less inflow and infiltration translate into lower collection system flows. However, droughts can potentially exacerbate blockages and pump failures. First, tree roots seeking water may rapidly invade sewer pipes during dry years.[56] Additionally, the lower collection system flows associated with water conservation allow more debris and FOG to accumulate in sewer pipes and contain higher concentrations of solids, causing more wear and tear to pumps.[57]



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**Figure 2. Monthly variation in the number and volume of SSOs, by region and statewide.** Area charts show the total number (**A**) and volume (**B**) of SSOs reported each month from September 2007 to October 2015. Colors show the shares contributed by collection systems in each of the nine Regional Water Quality Control Board regions. The y-axis for the area chart in B has been trimmed to show detail in volume variation, but the inset shows the full extent of the data. Pie charts show the overall contributions from each region to statewide totals for the whole time period. See **Chapter 8.A**, **8.B** for a description of data sources and limitations.

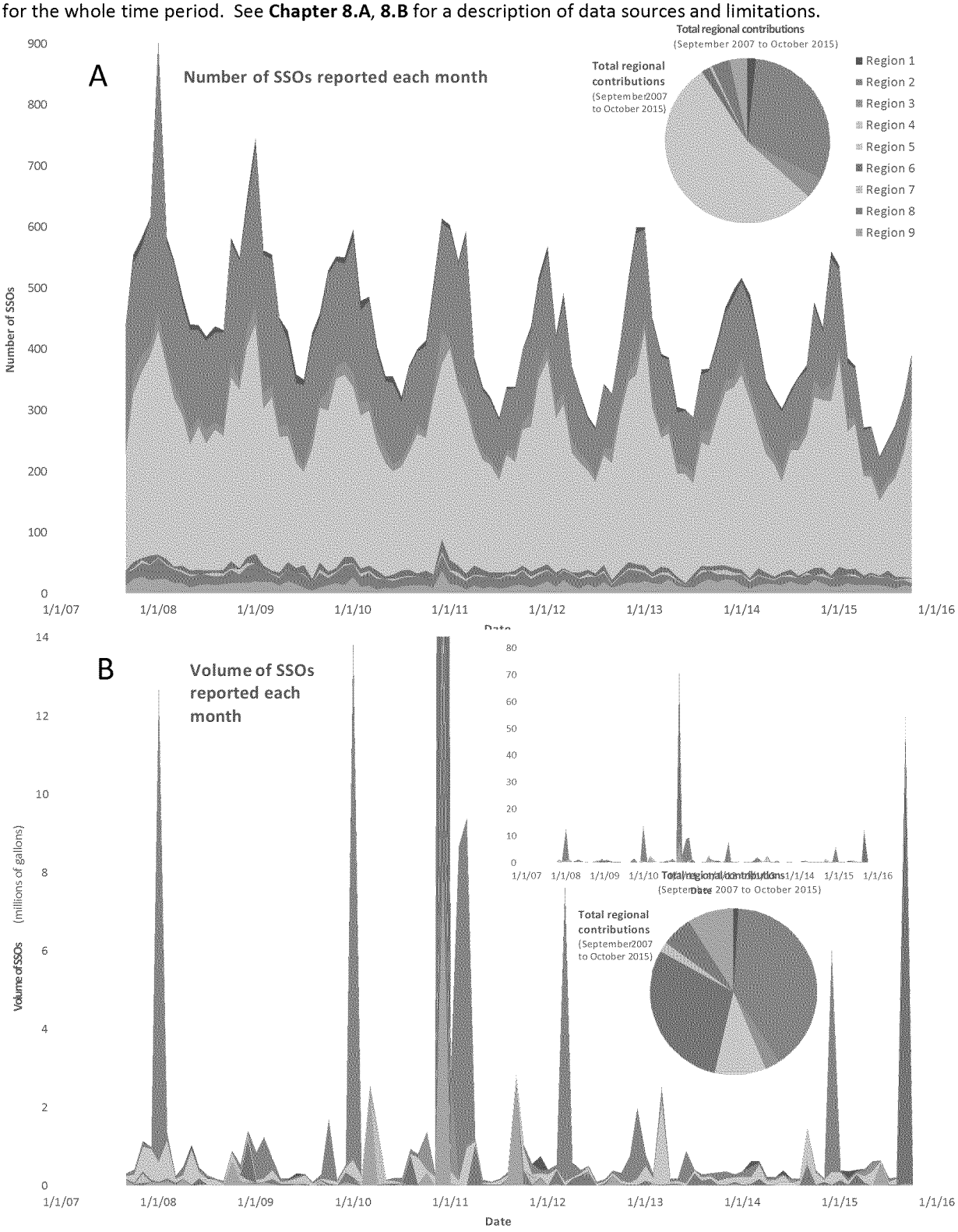




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**Figure 3. Variation in the frequency of SSOs with different causes statewide.** Colored lines show the number of SSOs reported each month for each of six cause categories[58] from 2007 to mid-2015. These categories are similar to those identified in **Table 1**.[59] Vertical gray lines mark January of each year. See **Chapter 8.A**, **8.B** for a description of data sources and limitations.

**Root intrusion** = Blockage or damage by roots
**Debris** = Blockage or damage by debris
**FOG** = Blockage by deposits of fats, oils, or grease
**Structural** = Pipe structural failure, pump station failure
**Condition** = Flow exceeded capacity
**Other** = Other causes

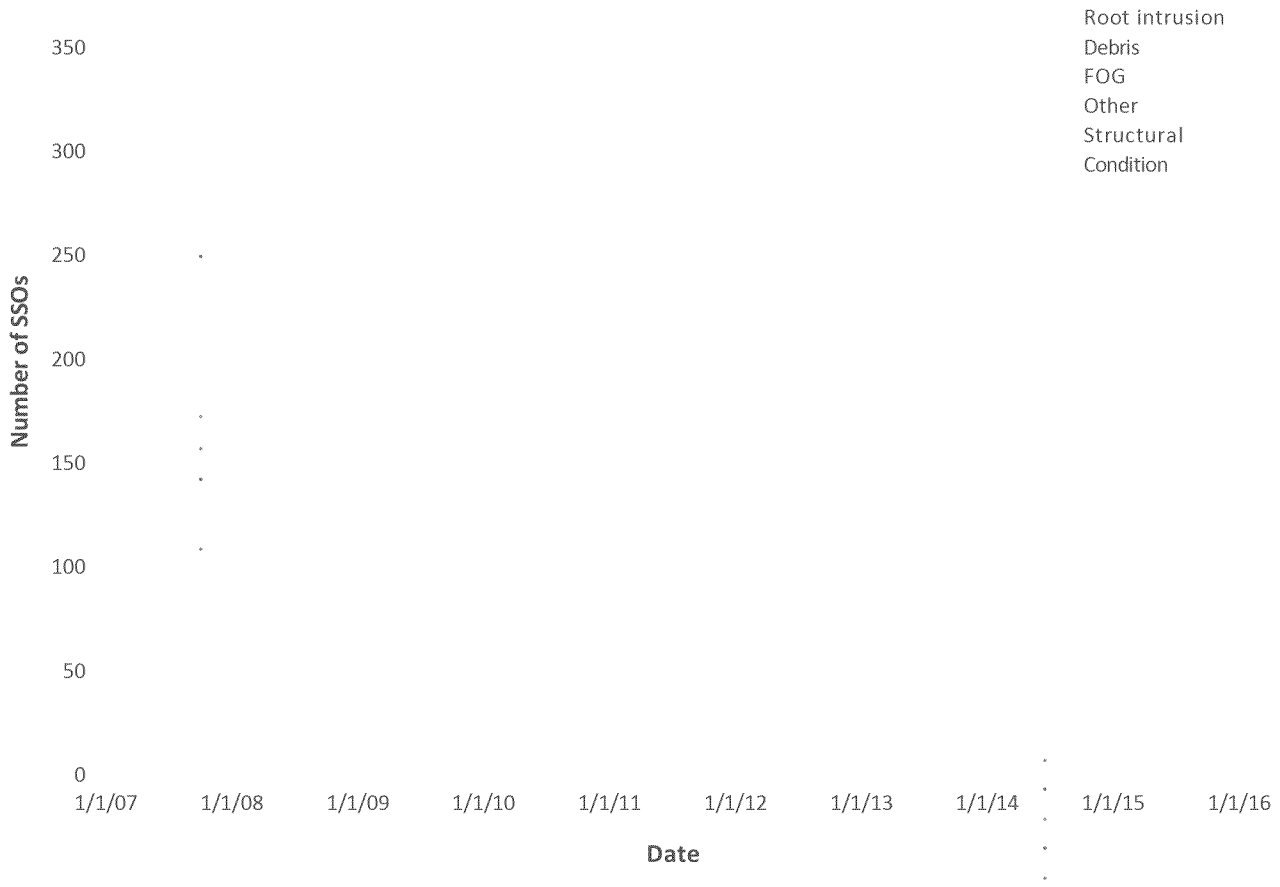




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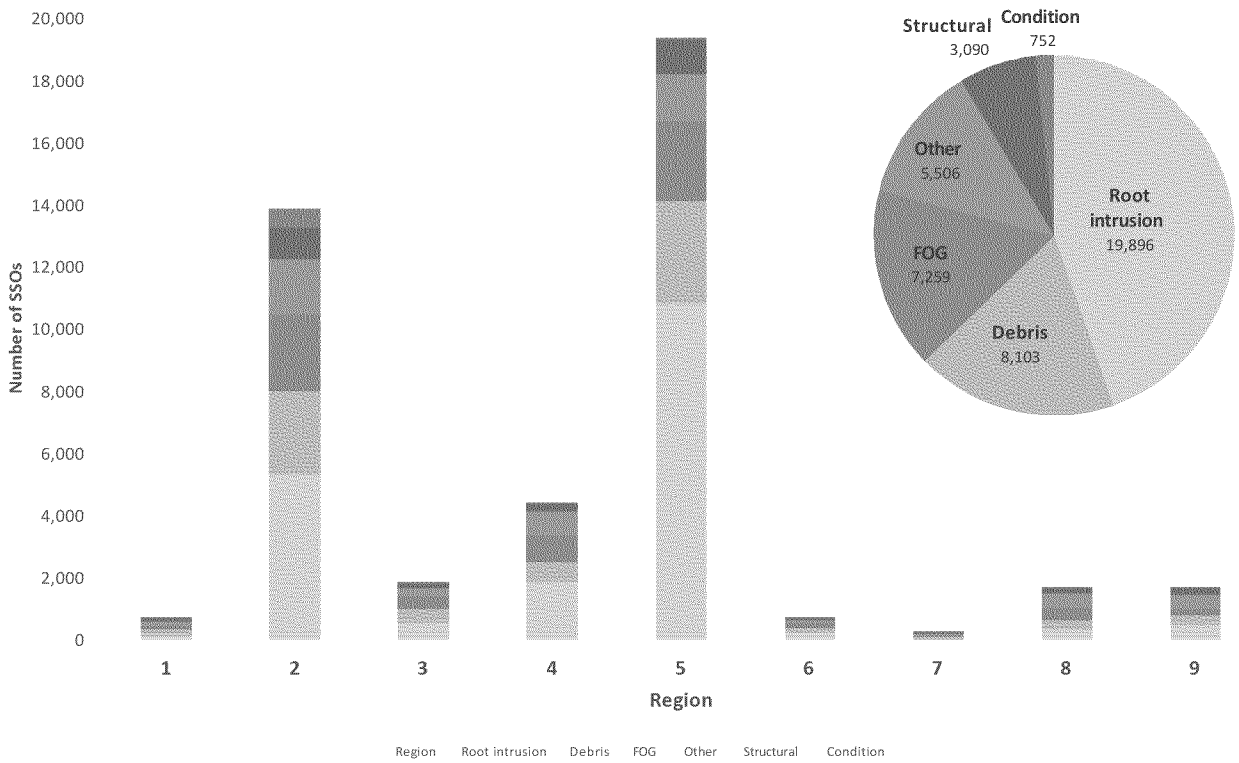
**Figure 4. Breakdown of SSO causes by region and statewide.** Columns show the total number of SSOs reported in each Regional Water Quality Control Board region from the time reporting began in 2007 through October 2015 (n = 44,606 statewide). Color bands represent the relative contributions of each of the 6 primary cause categories. The pie chart at right shows the statewide breakdown of reported SSO causes. See **Figure 3** for cause category descriptions. See **Chapter 8.A, 8.B** for a description of data sources and limitations.




## C. Environmental and public health impacts associated with SSOs

Information about the impacts of specific SSOs on human and environmental health is limited. However, the available data suggest that some SSOs—especially large spills that reach surface water—negatively impact human and environmental health.

SSOs contain a variety of pollutants, including pathogens, suspended solids, oxygen-depleting organic matter, toxic and bioactive substances, nutrients, and miscellaneous debris (see **Table 2,** below). In 2004, EPA estimated that SSOs accounted for less than 1% of the volume of all municipal discharges in the United States (treated wastewater + CSOs + SSOs + urban stormwater runoff), less than 1% of the municipal biochemical oxygen demand and total suspended solids load, and about 2% of municipal fecal coliform load.[60] However, locally, the pollutant contribution made by SSOs may be much larger or smaller.

The concentration and abundance of pollutants in an SSO depend upon the characteristics of the wastewater contributed to the collection system (which can vary depending on the time of day, day of the week, or season), the amount of inflow and infiltration, and many other factors.[61] During dry weather, SSOs are composed mostly of domestic, commercial, and industrial wastewater and lesser quantities of inflow and infiltration.[62] Dry-weather SSOs generally contain higher concentrations of bacteria and nutrients than wet-weather SSOs or CSOs.[63] While pollutant concentrations in wet-weather SSOs are generally diluted by infiltration and inflow to the collection system, as well as by higher flows in receiving waters, wet-weather SSOs are often larger and, therefore, more likely to reach surface waters.[64]



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Understanding the extent to which SSOs contribute to environmental loads of particular pollutants is difficult.[65] Some pollutants can come from multiple sources. For example, there are multiple potential sources for fecal indicator bacteria (like *E. coli*) in surface water. These include septic systems, CSOs, SSOs, wastewater treatment facilities, boats, agriculture, stormwater, and direct contributions from domesticated or wild animals.[66] Even bacteria that are specific to human hosts (like *Bacteroides*) could come from several different human wastewater sources.[67] Despite the challenges, recent studies have made progress in using microbial source tracking to estimate the relative contributions of different potential sources to observed pollution, identifying wastewater contamination in stormwater, and finding correlations between emergency room visits for gastrointestinal illness and the occurrence of SSOs.[68]

Monitoring data are sparse for SSOs due to their unpredictability.[69] Most SSO monitoring in California is infrequent, short-term monitoring related to spill response. Since 2013, collection systems enrolled under the Statewide Permit have been required to sample receiving waters for ammonia and bacterial indicators within 48 hours of an SSO that discharges 50,000 or more gallons into surface waters.[70] Those in the Los Angeles Region must sample receiving waters upstream and downstream of the point of entry daily until bacteria levels downstream return to background levels. [71] Of the 44,900 certified or amended SSO reports contained in the SSO database as of December 18, 2015, only 1,734 are identified as including water quality sampling. The database does not include sampling results.

Data are more extensive for CSOs,[72] in part because CSOs tend to occur at more predictable locations,[73] and in part due to the different regulatory treatment of CSOs and SSOs.[74] Wet-weather SSOs that reach surface water can share share many similarities with CSOs.[75] Therefore, data regarding CSO pollutant concentrations, health risks, and environmental impacts may be helpful in assessing the potential impacts of wet-weather SSOs.

**Table 2. Major types of pollutants in SSOs and surface water uses potentially affected.** Modified from EPA's 2004 REPORT TO CONGRESS: IMPACTS AND CONTROL OF CSOS AND SSOS.[76]

| Pollutant type | Uses potentially impaired | Description | |
|---|---|---|---|
| **Pathogens** | • Drinking water supply<br>• Fish consumption<br>• Shellfish harvesting<br>• Recreation | Bacteria | Exposure to pathogenic bacteria can cause gastrointestinal or other diseases. Fecal indicator bacteria are used as proxies for waterborne pathogens associated with sewage, as well as the related risk of illness from drinking or recreational contact with contaminated water.[77] |
| | | Viruses | More than 120 viruses have been detected, including poliovirus and Hepatitis A. |
| | | Parasites | Parasites found in sewage, including protozoa like *Giardia* and *Cryptosporidium*, can cause gastrointestinal or other diseases. |
| **Total suspended solids (TSS)** | • Aquatic life support | High concentrations of small particles suspended in water can negatively impact aquatic life in multiple ways, including by clogging fish gills, impairing reproduction and development, and altering habitat conditions. | |
| **Oxygen depleting substances** | • Aquatic life support | Organic matter comes from human fecal material, kitchen waste, industrial waste, and other sources. Bacterial decay of organic matter consumes oxygen. When oxygen levels drop too low, fish kills and other impacts to other aquatic organisms can result. | |
| **Toxic substances** | • Aquatic life support<br>• Fish consumption<br>• Shellfish harvesting | Long-term (chronic) exposure to toxic substances —like toxic metals, hydrocarbons, and pesticides—can interfere with the growth and reproduction of aquatic organisms, while acute short-term exposure may kill them outright. People who come into contact with contaminated water or who eat contaminated fish or shellfish are also at risk. | |

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|---|---|---|
| **Bioactive substances** | • Aquatic life support<br>• Other uses | Wastewater treatment processes do not target pharmaceutically active compounds—like hormones, antibiotics, and caffeine —or substances from personal care products. The risk to aquatic organisms and humans at the concentrations found in sewage is largely unknown, but concerns include endocrine disruption and antibiotic resistance.[78] |
| **Nutrients** | • Aquatic life support<br>• Drinking water supply | Excess nitrogen and phosphorous can cause algal blooms and weed growth. |
| **Floatables** | • Recreation | Floatables include visible, floatingtrash or other debris that can impact wildlife through ingestion or entanglement. Floatables can also impact aesthetics and deter recreation. |

### 1. Environmental impacts

An SSO's impacts depend on many factors.[79] Other things being equal, larger SSOs will have more significant consequences than smaller ones, and SSOs that reach surface water are more likely than others to have long-term detrimental impacts on aquatic ecosystems. However, the characteristics of local receiving waters and ecosystems play an important role as well—for example, low-flow conditions in a river that is home to vulnerable species could increase their sensitivity to even a small SSO.[80]

One way regulators frequently analyze the impacts of pollution is in terms of its effect on designated uses of waters of the United States. Under the CWA, states must assign uses to particular water bodies and adopt water quality criteria sufficient to protect those uses.[81] Chronic failure to meet these criteria earns a water body the designation "impaired" and triggers further regulatory requirements—generally, the development of Total Maximum Daily Loads (TMDLs) to address pollution problems.[82] Some types of pollutants are more likely to affect certain designated uses than others (see **Table 2**).

Bacteria have been identified as a major cause of impairment of U.S. waterways.[83] Because SSOs are difficult to monitor, and therefore their impacts are difficult to attribute, it is often unclear how big a part SSOs play in causing and maintaining an impairment relative to other potential bacteria sources.[84] However, SSOs have been implicated in the impairment of some water bodies. For example, New York State's current list of impaired water body segments specifically identifies municipal SSOs as the source of impairments due to oxygen demand, phosphorus, and pathogens in a portion of the Washington River.[85]

Other impacts are simpler to trace. Dramatic events like fish kills and beach or shellfish-bed closures related to very large SSOs are among the more obvious environmental impacts. For example, the collection system at Camp Pendleton Marine Corps Base near Oceanside, California spilled approximately 2.73 million gallons of wastewater into local waters over an 8-day period in September 2000.[86] As a result, oxygen levels crashed and remained low for several days, killing hundreds of fish and invertebrates.[87] Between 1997 and 2002, 16 out of 349 North Carolina fish kills were traced to SSOs.[88] The state of New Jersey closed more than 30,000 acres of shellfish beds to harvesting for 4 to 6 weeks after a 570 million gallon SSO in 2003.[89] In California, SSOs are thought to be one significant source of beach contamination. In 2000, the State Water Resources Control Board estimated that SSOs were responsible for 42% of beach closures in California.[90] From mid-2014 to mid-2015, SSOs resulted in 43 beach closures in the state.[91]

While SSOs have not been thoroughly studied as causes of impairment, CSOs provide a somewhat better studied analogue, albeit an imperfect one. In 2004, EPA found that 75% of assessed water body segments within one mile of a CSO outfall were identified as impaired, compared with 25% of assessed segments overall.[92] This correlation does not prove causation, since CSOs tend to be located in urban areas where overland stormwater runoff, heavy industry, and other sources also contribute to pollution. Instead, it suggests that CSOs—and by extension large, wet-weather SSOs that reach waters of the United States—may contribute to impairment of the designated uses of U.S. waters.



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### 2. Human health impacts

The most visible human health impacts related to SSOs are waterborne disease outbreaks.

Untreated wastewater contains pathogens that can cause disease[93] through skin contact with or inhalation or ingestion of sewage-contaminated water.[94] Another potential waterborne disease vector is ingestion or handling of contaminated fish or shellfish grown in or exposed to sewage-contaminated waters.[95] Most waterborne disease infections are gastrointestinal, but "skin, ear, eye, . . . and respiratory illnesses" also occur.[96]

In a study analyzing data collected from 1986 to 2000, 95 outbreaks involving 5,905 cases of waterborne diseases traced to pathogens common in wastewater were reported for U.S. recreational waters.[97] During the same period, 48 outbreaks involving 437,082 cases of waterborne diseases traced to pathogens common in sewage were reported related to drinking water from surface sources in the United States.[98] Although these outbreaks were not traced to specific SSOs or CSOs, wastewater spills may have played a role in some of them.[99] EPA has estimated that recreational exposure to SSOs may cause between 2,269 and 3,669 illnesses each year at state-recognized U.S. beaches.[100]

In its 2004 report to Congress, EPA identified examples of specific water supply impacts attributed to SSOs. In one case, 1,300 cases of cryptosporidiosis were identified in Texas after a 167,000 gallon SSO flowed into a creek and contaminated municipal wells.[101] In another case, 4 deaths and 243 cases of diarrhea in Missouri were linked to "frequent capacity-related SSOs."[102] Direct land-based contact with a large SSO caused 39 cases of Hepatitis A in Florida.[103]

## D. Effective collection system management

Historically, collection system infrastructure was often neglected in comparison with more visible and highly regulated treatment plant infrastructure.[104] System components were often allowed to run to failure, with maintenance or replacement occurring mainly in a reactive mode.[105] During the 1980s and 90s, collection system agencies addressed SSOs primarily by increasing collection system capacity and making efforts to reduce inflow and infiltration.[106] By the late 90s, "many agencies still lack[ed] a well-managed, ongoing maintenance program."[107] In 1999, a study targeted at "developing a rational approach to evaluating maintenance (reinvestment) and system performance" identified little relevant existing data to build from. [108] After surveying 42 collection system agencies around the country, the authors found strong correlations between maintenance frequency and reinvestment and system performance.[109] They highlighted collection system cleaning, root removal, and pump station service as "the most important" activities for an effective routine maintenance program.[110]

Today, collection system management has improved significantly, but collection system agencies still operate in an environment of limited resources, and even the best-funded collection systems will face trade-offs. Therefore, strategic use of resources is critical. For example, agencies need to balance the costs of different maintenance and infrastructure improvement options against their benefits to determine an appropriate path forward.[111] Those agencies with a good understanding of the condition of the pipes, pumps, manholes, and other components that make up their collection systems are better situated to undertake this type of analysis than agencies with less complete information.

### 1. The "asset management" approach

Although some SSOs are likely to occur even in well-managed sanitary sewer systems due to factors beyond managers' reasonable control, most are preventable.[112] **Figures 2** and **3** show that at least 87% of SSOs reported in California are thought to be caused by blockages, structural failures, and capacity problems. These problems can largely be prevented through proactive and appropriately prioritized collection system inspection, assessment, cleaning, rehabilitation, and replacement—collectively known as asset management.



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Asset management is "a strategic approach to help prioritize investments, make choices for maintaining equipment and infrastructure, and deliver reliable service to customers for the long term."[113] It involves setting performance goals (known as service levels), inventorying assets, assessing asset condition, evaluating the potential consequences of management decisions, and understanding the effective useful life and value of individual collection system assets.[114] **Table 3** summarizes the main techniques and technologies involved in effective collection system management.

A well-planned and executed operation and maintenance program is critical.[115] Sewer inspection, testing, and assessment help to identify existing or potential problems, prioritize maintenance and rehabilitation activities to target the highest-risk assets, and evaluate the effectiveness of actions taken.[116] Other important elements include sewer cleaning, FOG control programs, water quality monitoring, and public notification.[117] Flow monitoring within the collection system can potentially identify developing problems before SSOs occur.

Although optimizing collection system maintenance and management can pay dividends fairly quickly, it takes initial investment and ongoing attention.[118] A recent national survey found that, while 89% of responding wastewater utilities reported having an asset management program, only 75% reported using asset management for asset inventory and less than half (49%) reported fully implementing asset condition assessment—both core requirements of effective asset management.[119] As a group, California collection system agencies may be ahead of the pack. Aging infrastructure, the Statewide Permit (see **Chapter 2.B.1**), and citizen and government enforcement actions (see **Chapters 3, 4,** and **5–9**) have provided collection system agencies with multiple incentives to evaluate and improve their management practices. The Statewide Permit is a major driver: it effectively requires each collection system agency to adopt an asset management approach (see the discussion of Sewer System Management Plan (SSMP) requirements in **Chapter 2.B.1.b**).



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**Table 3. Sanitary sewer system management techniques and technologies.**[120]

| Management category | Goals | Management techniques and technologies |
|---|---|---|
| **System inventory and data management** | Store, process, and integrate systems data to track progress, identify deficiencies, assess needs, and enable timely and effective decision making | Identify and document system assets and interrelationships |
| | | Gather and update attribute data (e.g., asset condition and criticality, financial data, operation & maintenance records) |
| | | Develop and implement computer-based data and maintenance management systems<br>• Computer-aided design and drafting (CADD)<br>• Geographic information systems (GIS)<br>• Computerized maintenance management system (CMMS)<br>• Automated mapping and facilities management |
| **Operation and maintenance** | Ensure efficient and effective wastewater collection and transport; respond effectively to, and learn from, SSOs | Inspect, test, and assess the condition of sewer assets<br>• Remote inspection (CCTV, sonar), manual inspection of pipes, pumps, valves, and manholes<br>• Air, hydrostatic, or smoke testing<br>• Condition assessment and ranking to prioritize future inspection, maintenance, rehabilitation, and replacement |
| | | Carry out preventative and proactive maintenance<br>• Hydraulic, mechanical, and /or chemical pipe cleaning<br>• Pump station maintenance<br>• Routine and "hot-spot" maintenance protocols and schedules |
| | | Develop and implement source control programs<br>• FOG-control ordinances (e.g., require grease traps for food service establishments, inspection, and enforcement) and education programs targeted at residential, commercial sectors<br>• Chemical root control, public education about tree planting<br>• Vandalism prevention (lock manhole covers, educate public) |
| | | Develop and implement an effective SSO response plan<br>• Investigate the SSO<br>• Assess the cause<br>• Stop/contain the SSO<br>• Estimate volume<br>• Clean up the SSO<br>• Sample receiving waters<br>• Provide government, public notification<br>• Document the event, submit report, record in data management system |
| **Collection system controls** | Maximize efficient transport of wastewater; minimize inflow and infiltration | Assess system hydraulic capacity<br>• Monitor flow and rainfall to assess role of inflow and infiltration<br>• Investigate flow constrictions<br>• Adjust operation and maintenance |
| | | Install flow-monitoring network |
| | | Eliminate sources of inflow and infiltration<br>• Private sewer lateral inspection and replacement ordinances<br>• Replace missing, damaged, or loose manhole covers<br>• Rehabilitate/replace defective system components |
| | | Rehabilitate/replace defective system components |
| **Storage facilities** | Increase the storage capacity of the collection and/or treatment system | Add in-line storage (e.g., increase redundancy with relief sewers) |
| | | Create or make use of potential offline storage |
| | | Boost storage within the treatment facility |



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## 2. Funding

Federal funding was instrumental in transforming urban wastewater treatment systems nationwide during the 1970s and 1980s, but it peaked in 1977,[121] before the emphasis on collection systems assets began in the 1990s (see introduction to **Part D** of this chapter, above). Today the lion's share of the funding responsibility for wastewater infrastructure of all types has passed to local governments.[122] National estimates[123] are consistent with observations in California[124] suggesting that local governments and utilities effectively shoulder more than 90% of the financial burden for generating wastewater-related revenue. The primacy of local funding is likely to continue.

The cost of management and infrastructure improvements needed to address SSOs varies from system to system, but the scale of funding needed to renew aging collection system infrastructure over the coming decades is large. According to EPA's 2012 Clean Watersheds Need Survey, California wastewater agencies estimated that they would need at least $9.4 billion for collection system repairs and new sewers between about 2012 and 2017.[125] However, the actual cost may be even higher: as of mid-2015, the total annual capital expenditure budget for all collection system agencies regulated under the Statewide Permit was approximately $1.9 billion.[126]

Collection system operation and maintenance costs are also substantial. As of mid-2015, the total annual budget for California collection system agencies was $1.8 billion, comparable in scale to the capital expenditure budget.[127]

Although the costs are large, collection system agencies are better positioned than most other local agencies to get the funding they need from their constituents.[128] Restrictions on local tax and fee increases imposed by Proposition 218 and other public finance reforms adopted by voter initiative[129] are widely recognized as impediments to funding local agencies in California.[130] However, due to carve-outs from voter approval requirements for water and sewer services, their burdens fall more heavily on other elements of California's water-related services, such as flood control and municipal stormwater management.[131]

Nevertheless, funding challenges persist. Perceived political or institutional challenges and affordability concerns can make it difficult for collection system agencies run by elected boards to raise rates to fund needed capital, operation, and maintenance expenses.[132] For example, where collection systems and treatment facilities rely on the same sources of funding, particularly where a single agency is responsible for both, there may be tension between investing in collection systems and treatment facilities.[133]

Nationally, average residential sewer service charges rose at nearly twice the rate of inflation between 2010 and 2013.[134] The ability of ratepayers to afford sewer rate increases is not uniform. SSOs and the costs of preventing them can disproportionately impact low-income communities and communities of color. [135] However, tools are available to reduce the financial burden of sewer system improvements on low-income ratepayers. For example, agencies responsible for multiple water-related services (e.g., cities with sewer, stormwater, flood control, and/or water supply duties) can minimize their overall costs by pursuing the most cost-effective avenues for addressing multiple community needs. This might include, for example, an integrated approach to meeting wastewater and stormwater requirements by appropriately coordinating and sequencing needed improvements.[136] Additionally, financial capability assessments can potentially play a role in slowing the pace at which needed improvements must happen.[137] Finally, to help them cope with sewer rate increases, collection system agencies can provide low-income ratepayer assistance programs.[138]



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**Chapter 1 summary:**

- A sanitary sewer overflow (SSO) occurs when wastewater escapes a sanitary sewer collection system before it reaches the headworks of a treatment plant. SSOs that occur below ground and lack a clear surface expression are known as exfiltration.
- SSOs can be caused by a variety of factors working alone or in concert, including structural defects, blockages, capacity issues, and operational issues.
- A collection system agency is legally responsible only for SSOs that result from problems within its system. Some public collection system agencies own all (16%) or part (26%) of the sewer laterals that introduce wastewater from individual properties into the sewer main network, but the majority of systems (57%) do not own laterals (in these systems, private landowners are responsible for maintaining laterals in good working condition).
- SSOs In California:
  - There is a strong seasonal cycle in the frequency (and volume) of SSOs—more occur during the wetter winter season, while fewer SSOs occur during the drier summer months—suggesting that excessive rainwater inflow and/or groundwater infiltration play a role in winter SSOs.
  - The San Francisco Bay Region and the Central Valley Region have consistently reported the majority of the SSOs that occur in the state, and the San Francisco Bay Region has reported the largest volume of SSOs.
  - Statewide, blockages to root intrusion (44%), debris (18%), or deposits of fats, oils, and grease (FOG) (16%) have been identified as the primary cause of the majority (78%) of SSOs.
- Environmental and public health impacts of SSOs:
  - Information about the impacts of specific SSOs on human and environmental health is limited. However, the available data suggest that some SSOs—especially large spills that reach surface water—negatively impact human and environmental health.
  - During dry weather, SSOs are composed mostly of domestic, commercial, and industrial wastewater and lesser quantities of inflow and infiltration. Pollutant concentrations in wet-weather SSOs are generally diluted by infiltration and inflow to the collection system, as well as by higher flows in receiving waters, but they are often larger and more likely to reach surface waters.
  - An SSO's impacts will depend on many factors, including its size, timing, and location of and the characteristics of local receiving waters and ecosystems.
  - SSOs have been implicated in some water quality impairments, fish kills, beach or shellfish-bed closures, and waterborne disease outbreaks around the nation.
- Effective collection system management:
  - Collection system management his improved significantly since the early 1990s.
  - An "asset management" approach that includes collection system inspection, assessment, cleaning, rehabilitation, and replacement prioritized based on ongoing system inventory and needs assessments can help prevent most SSOs.
  - The cost of management and infrastructure improvements needed to address SSOs varies greatly from system to system, but the scale of funding needed to renew aging collection system infrastructure over the coming decades is large.
  - Most funding for collection system programs is locally sourced, and agencies face political and institutional challenges in increasing that funding.

# CHAPTER 2 – SSO regulation in California

In California, SSOs are regulated under both federal and state law. Applicable provisions of federal law are more general in nature, while state law addresses SSOs more specifically. This chapter briefly summarizes federal and state regulation of SSOs, SSO enforcement by regulators, and citizen SSO enforcement under the CWA.

## A. The role of federal laws and regulations

There is no SSO-specific regulatory program at the national level.[139] While the U.S. Environmental Protection Agency (EPA) has considered introducing regulations specifically directed at SSOs off and on for more than two decades (see **Table 4**, below),[140] it has yet to do so.[141]

SSOs are nonetheless federally regulated. SSOs that reach waters of the United States violate the CWA. As we describe below in **Part A.2** of this chapter, this is because such discharges would need to meet secondary treatment standards to be authorized, and, by their nature, SSOs violate these standards. Additionally, even SSOs that do not reach waters of the United States may violate permit conditions designed to ensure CWA compliance (see **Part A.3.a** of this chapter).[142]

For the convenience of readers, we have compiled the relevant federal statutes and regulations referenced in this report., available as an **Online Supplement** at *http://www.law.berkeley.edu/SSO-citizen-enforcement.*

**Table 4. Timeline of actions related to national SSO policy and regulation.**

| Year | Action |
|---|---|
| **1990s** | EPA initiated several major SSO enforcement actions requiring hundreds of millions of dollars of remediation.[143] |
| **1994** | In April 1994, EPA issued its Combined Sewer Overflow (CSO) Control Policy.[144] Congress amended the CWA in 2001 to require "each permit, order, or decree" for a combined sewer system to conform to the Policy.[145] |
| **1994** | EPA convened an "SSO policy dialogue" stakeholder group made up of "sanitary sewer system operators, SSO-related health professionals, state regulatory agencies, technical professionals, and environmental and citizen groups."[146] |
| **1995** | The SSO policy dialogue group transitioned into the SSO Subcommittee of an Urban Wet Weather Flows Federal Advisory Committee (FAC SSO Subcommittee).[147] |
| **1995** | EPA issued a memorandum on "Enforcement Efforts Addressing Sanitary Sewer Overflows."[148] |
| **1996** | EPA issued Enforcement Management System guidance on "Setting Priorities for Addressing Discharges from Separate Sanitary Sewers."[149] |
| **1998** | EPA Region 4 initiated a Management, Operation, and Maintenance (MOM) Programs Project, including a self-assessment component developed with substantial input from municipalities.[150] |
| **1999** | The FAC SSO Subcommittee unanimously supported a set of recommendations and suggested regulatory language for addressing SSOs. The framework recommended a series of SSO-specific NPDES permit requirements.[151] |
| **2000** | In March 2000, EPA initiated Office of Management and Budget (OMB) review of a draft "Notice of Proposed Rulemaking" reflecting the FAC SSO Subcommittee's work which would establish permit requirements for SSOs.[152] |
| **2000** | In April 2000, EPA released a "Compliance and Enforcement Strategy" requiring the development of regional SSO response plans and directing EPA regions to inventory SSOs and address "20% of priority systems each fiscal year."[153] |
| **2001** | In early January 2001 during the final days of the Clinton Administration, OMB released the Notice of Proposed Rulemaking, and the EPA Administrator signed it.[154] The incoming Bush administration withdrew the Notice before it was formally published in the Federal Register, pending review and approval by the incoming EPA administrator.[155] |
| **2001** | Throughout the year, wastewater agencies raised concerns with proposed regulatory language in the draft Notice.[156] |
| **2001 to 2003** | In November 2001, EPA's Office of Wastewater Management was instructed to develop a new proposed rule consistent with the FAC SSO Subcommittee's recommendations that included a preamble summary and discussion of key public comments on the January 2001 draft Notice. Although EPA suggested a proposed rule would soon be |

| | |
|---|---|
| | delivered to OMB, it did not materialize.[157] |
| **2004** | EPA delivered the "2004 Report to Congress: Impacts and Control of CSOs and SSOs", responding to a 2001 request.[158] |
| **2005** | EPA released a "Guide for Evaluating Capacity, Management,Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems."[159] |
| **2005** | EPA issued a memo regarding "Guidelines for Federal Enforcement in CSO/SSO Cases."[160] |
| **2007** | EPA requested public comments on draft guidance for "NPDES Permit Requirements for Municipal Sanitary Sewer Collection Systems and SSOs" and draft "Model NPDES Permit Language for Sanitary Sewer Overflows."[161] |
| **2010** | EPA held a series of "listening sessions" around the country to get public input about "whether to develop a more specific broad-based regulatory framework for sanitary sewer collection systems and peak flows under the NPDES program."[162] The agency requested feedback on 6 issues: whether it should (1) clarify standard permit conditions applicable to SSOs, (2) develop a CMOM standard permit condition, (3) require permit coverage for municipal satellite collection systems, and (4) develop a standard permit condition that would address unauthorized SSOs caused by exceptional circumstances, as well as (5) how EPA should address peak flows at wastewater treatment plants, (6) and the costs and benefits of CMOM programs and asset management of sanitary sewers. |
| **2011** | In July 2011, EPA held an SSO/Peak Wet Weather Discharges Workshop to provide an opportunity for stakeholders to elaborate on their recommendations to the agency on actions to regulate SSOs and peak wet weather discharges.[163] |
| **2011** | EPA issued a memo encouraging regulators to engage municipal permittees in seeking "[a] comprehensive and integrated planning approach to . . . CWA waste- and storm-water obligations."[164] |
| **2012** | EPA issued an "Integrated Municipal Stormwater and Wastewater Planning Approach Framework."[165] |
| **2013** | EPA proposed the NPDES Electronic Reporting Rule, which included clarifications of SSO reporting requirements.[166] |

### 1. Clean Water Act requirements

In 1972, Congress passed amendments—known as the CWA—to the Federal Water Pollution Control Act with the ambitious goal of eliminating the discharge of pollutants into the nation's waters[167] "to restore and maintain the[ir] chemical, physical, and biological integrity."[168]

The CWA requires states to adopt and update water quality standards that include the designated beneficial uses of particular water bodies and water quality criteria sufficient to protect those designated uses.[169] Potential beneficial uses include "public water supplies, propagation of fish and wildlife, [and] recreational purposes," among others.[170]

Permitting under the National Pollutant Discharge Elimination System (NPDES) program is central to CWA implementation.[171] The CWA bars discharge of pollutants from a point source into waters of the United States without a permit.[172]

EPA or an approved state program—like California's (described below in **Part B** of this chapter)—issues NPDES permits for discharges from publicly owned treatment works (POTWs), industrial facilities, municipal separate storm sewer systems (MS4s), and other point sources of pollutants.[173]

At a minimum, NPDES permits must impose technology-based effluent limitations on point-source discharges to waters of the United States.[174] Additional requirements, like water-quality-based effluent limitations, come into play where technology-based effluent limitations alone are insufficient to meet state water quality standards and other obligations.[175] Therefore, permits generally contain technology-based effluent limitations, additional requirements necessary to achieve state water quality standards, and monitoring and reporting requirements.[176]

A discharge of pollutants violates the CWA when it (1) is prohibited by an NPDES permit, (2) violates permit requirements or conditions, or (3) is not authorized by a permit.[177]

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### 2. Applicability of secondary treatment standards to collection system discharges

The CWA establishes specific technology-based effluent limitations for POTWs. POTW discharges to U.S. waters must achieve secondary treatment and any more stringent limitations necessary to meet water quality standards.[178] By contrast, discharges from point sources other than POTWs must use the "best practicable control technology currently available."[179]

While Congress intended secondary treatment of municipal wastewater to provide "for the removal of organic matter and suspended solids,"[180] it tasked the EPA with defining the standard.[181] The agency's secondary treatment regulations impose time-averaged concentration limits on biochemical oxygen demand, total suspended solids, and pH, as well as time-averaged percent-removal requirements on biochemical oxygen demand and total suspended solids.[182] Like other technology-based effluent limitations, instead of requiring dischargers to use a particular technology, the regulations set "a minimum level of effluent quality that is attainable using demonstrated technologies."[183]

Different technology-based effluent limitations have been applied to CSOs. In its 1980 opinion in *Montgomery Environmental Coalition v. Costle*, the D.C. Circuit determined that the CWA "provide[d] no clear definition of 'treatment works' for the purposes of" the secondary treatment-based effluent limitations it requires for POTWs.[184] At that time, the only definition in the CWA, 33 U.S.C. § 1292(2), resided in a subchapter addressing construction grants.[185] Although the court viewed that definition (little changed today) as "clearly broad enough to encompass the [combined sewer] overflow points at issue," it concluded the definition did not apply to the remainder of the Act.[186] Instead, the court accepted EPA's argument that, in the absence of an applicable statutory definition, the agency's regulatory definition applied and excluded CSO points. EPA argued that "treatment works" included "any facility, method or system for the storage, treatment, recycling, or reclamation of municipal sewage or industrial wastes of a liquid nature, including waste in combined storm water and sanitary sewer systems," but excluded CSO points, which were intended "for uninhibited discharge."[187] Consequently, the court held that the "best practicable control technology currently available" standard applied to discharges from CSO points.[188] EPA's CSO Control Policy, in effect since 1994, interprets CSO discharges to be subject to this standard, "expressed in the form of best management practices."[189]

There has been disagreement over which standard—"secondary treatment" or "best practicable control technology currently available"—applies to SSO discharges to U.S. waters, especially between collection system-agency-aligned interests and federal regulators.[190] Since at least 2001, EPA has considered sanitary sewer systems to be "part of the treatment works under the Clean Water Act," with the result that SSOs would be "required to achieve secondary treatment in order to be eligible to receive an NPDES permit."[191] However, some have argued that SSOs, like CSO points, are not or should not be considered to be part of a POTW, or that the intermittent nature of SSOs renders EPA's current secondary-treatment standards inappropriate.[192]

A recent statutory change appears to have strengthened EPA's interpretation that secondary treatment requirements apply, not just to discharges from wastewater treatment plants, but to discharges from sanitary sewer collection systems. After 42 years without a generally applicable definition of "treatment works" in the CWA, Congress finally adopted one as part of the Water Resources Reform and Development Act of 2014. The legislation cross-referenced 33 U.S.C. § 1292, the definition the D.C. Circuit previously held applied only to the subchapter addressing construction grants.[193] As that court noted in 1980 in *Montgomery Environmental Coalition v. Costle*, this definition is quite broad, encompassing

> any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature . . . , including intercepting sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof . . . .[194]

The full implications of the 2014 statutory change remain unexplored. While EPA's NPDES regulations have referenced the § 1292 definition for the past 15 years,[195] the agency has maintained a carve-out exclusion



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for CSO points by defining a POTW to "include[] sewers, pipes and other conveyances *only if* they convey wastewater to a POTW Treatment Plant."[196]

Both the newly applicable statutory definition of "treatment works" and EPA's regulatory definition of "POTW" appear to treat separate sanitary sewer systems, which exist to convey wastewater to a treatment facility,[197] as POTWs or as components of POTWs. As a result, SSOs discharged to waters of the United States would need to meet secondary treatment standards to be permitted under the NPDES program. Because they are effectively certain to fail this test, EPA has interpreted the CWA to flatly prohibit SSOs that reach waters of the United States.[198]

### 3. NPDES permit terms and conditions relevant to SSOs

In addition to effluent limitations, Congress has mandated that NPDES permits include conditions to ensure compliance with all applicable CWA requirements.[199] These range from standard, broadly applicable conditions to conditions narrowly tailored to address specific discharges by specific permittees.

EPA regulations define a series of standard permit conditions and direct that all applicable conditions "be incorporated . . . either expressly or by reference. "[200] States that implement the NPDES program can omit or modify standard permit conditions if doing so supports more stringent state requirements.[201]

SSOs that do not reach waters of the United States may still violate the CWA if they violate NPDES permit conditions intended to ensure CWA compliance.

#### *a. Standard conditions*

Several standard NPDES permit conditions are particularly relevant to SSOs—specifically, conditions regarding proper operation and maintenance, the duty to mitigate, and noncompliance reporting.

##### Proper operation and maintenance, 40 C.F.R. § 122.41(e), and duty to mitigate, 40 C.F.R. § 122.41(d)

First, permittees must "at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used" to achieve permit compliance.[202] As a consequence, even if an SSO results "from improper operation and maintenance of the collection system," it violates the applicable NPDES permit.[203] Second, the duty to mitigate requires permittees to "take all reasonable steps to minimize or prevent any discharge" that violates the permit and "has a reasonable likelihood of adversely affecting human health or the environment. "[204] Together, these two standard conditions and the secondary treatment requirement form "the basis for requiring permittees to provide adequate sanitary sewer collection system capacity."[205]

Permits sometimes expand on these conditions by requiring permittees to develop and implement capacity, management, operation, and maintenance (CMOM) programs.[206] In 2005, the EPA released guidance for evaluating CMOM programs for sanitary sewer collection systems.[207]

##### Noncompliance reporting, 40 C.F.R. § 122.41(l)(6), (7)

Permittees must orally report "any noncompliance which may endanger health or the environment . . . within 24 hours from the time the permittee becomes aware of the circumstances," and follow this up with a written report within 5 days.[208] Other instances of noncompliance must be reported "at the time monitoring reports are submitted."[209] Reported information must include "[a]ny unanticipated bypass" or "[a]ny upset" which exceeds any effluent limitation in the permit."[210] As outlined above, SSOs to waters of the United States represent noncompliance with secondary treatment standards, and other SSOs may indicate improper operation and maintenance. Therefore, both categories of SSOs must generally be reported.[211]

In 2007, EPA provided draft guidance on NPDES Permit Requirements for Municipal Sanitary Sewer Collection Systems and SSOs.[212] The accompanying draft model permit conditions attempted to "clarify[] reporting, recordkeeping, third-party notification and CMOM programs."[213]

Defenses: Bypass, 40 C.F.R. § 122.41(m), and upset, 40 C.F.R. § 122 .41(n)

Two other standard NPDES permit conditions that excuse otherwise unauthorized POTW discharges caused by exceptional circumstances do not readily apply in the context of SSOs. However, they are sometimes mentioned by collection system agency representatives[213,214] and EPA has considered developing a similar provision that would apply to SSOs.[215]

The "bypass" provision limits when EPA may bring an enforcement action in the first instance.[216] "Bypass" is defined to be "the intentional diversion of waste streams from any portion of a treatment facility."[217] It is prohibited except under certain circumstances. When it aids "essential maintenance," bypass is allowed as long as it does not cause effluent limitations exceedences.[218] Bypass that exceeds effluent limitations is prohibited unless (1) it "was unavoidable to prevent loss of life, personal injury, or severe property damage," (2) "[t]here were no feasible alternatives," and (3) the permittee submitted proper notice (after the fact if the bypass was unanticipated).[219] Because bypass occurs from within a "treatment facility," not from other parts of the POTW, an SSO should not be considered bypass under the regulation.[220] Similarly, SSOs are not "intentional."[221] While the term "bypass" is widely used in the collection system context to describe the practice of temporarily pumping wastewater around a sewer pipe segment during repair or replacement,[222] this type of bypass would not excuse an SSO.

The "upset" provision provides an affirmative defense to violations of technology-based effluent limitations.[223] "Upset" is "an exceptional incident in which there is unintentional and temporary noncompliance with *technology based permit effluent limitations* because of factors beyond the reasonable control of the permittee."[224] Properly documented upset can be used as an affirmative defense for such noncompliance.[225] Although it has sometimes been invoked in the context of SSOs,[226] as written, the upset defense does not appear to be a good fit for them. The defense was developed to provide an exception for noncompliant discharges from a facility that is usually able to comply with the applicable technology-based effluent limitations in a permit when the technology underlying those limitations fails for reasons beyond the operator's control.[227] However, as described above in **Part A.2** of this chapter, collection system discharges would need to meet the technology-based limitations set out in EPA's secondary treatment standards for POTWs to be permitted under the CWA, and, by their nature, collection systems do not provide the treatment required at any time. Furthermore, EPA argued against the inclusion of an affirmative defense for SSOs in the Statewide Permit (described below, in **Part B.1** of this chapter) on the basis that it would undermine the CWA and inappropriately limit enforcement.[228] Additionally, the agency's draft CMOM regulations expressly stated that "[n]either the bypass or the upset provisions . . . apply" to SSOs.[229]

### *b. Other terms and conditions*

Although some of EPA's standard permit conditions (described above) are plainly relevant to SSOs, none explicitly addresses them. As a consequence, the details of SSO regulation often play out at the level of a specific permit, when EPA or the approved state regulatory program includes permit terms or conditions that apply, either directly or indirectly, to SSOs. The next section describes the approach California regulators have taken. EPA officials and others view California's program as one of the most effective in the nation.[230]

## B. State SSO regulation

In California, the federal NPDES program has been delegated to the state.[231] The State Water Resources Control Board (State Board) and nine Regional Water Quality Control Boards (Regional Boards) administer the NPDES program,[232] as well as state Waste Discharge Requirements (WDRs) program.[233] The State and Regional Boards determine what SSO-related provisions are included in NPDES permits and, more broadly, how SSOs are regulated across the state.

It is important to note that, although the CWA addresses only discharges of pollutants to waters of the United States, California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is more expansive. It applies to discharges of waste to land, surface water, and groundwater.[234] Under the Porter-

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Cologne Act, the State Board makes state water quality control policy, adopts statewide water quality control plans, issues regulations, and reviews the Regional Board's decisions.[235] Each of the nine Regional Boards adopts a regional water quality control plan—also known as the "basin plan" for that hydrologic region—and issues permits to implement water quality requirements. [236] Each basin plan designates the beneficial uses of area waters that must be protected, water quality objectives, and an implementation program for achieving those objectives.[237] Many basin plans contain prohibitions against the discharge of untreated or partially treated wastewater.[238] The statewide and regional basin plans and the state antidegradation policy fulfill the CWA's requirement for state water quality standards.[239]

Together, the State and Regional Boards administer and enforce California's NPDES program.[240] All proposed and current point source and nonpoint source discharges to California waters are theoretically regulated under some combination of waste discharge requirements (WDRs), waivers of WDRs, and/or basin plan prohibitions.[241] For discharges to surface waters, WDRs often serve a dual purpose as NPDES permits.[242]

Like the EPA, the State Board has interpreted the CWA to require "any point source discharge of sewage effluent to waters of the United States [to] comply with technology-based, secondary treatment standards, at a minimum, and any more stringent requirements necessary to meet applicable water quality standards and other requirements." [243]

### 1. The Statewide Permit

Since 2006, California has chosen to use statewide general WDRs only—instead of general or individual dual-purpose WDRs/NPDES permits—as the primary mode of SSO regulation. The State Board favored the general permit approach, which requires entities meeting the specified criteria to self-identify and enroll for coverage under a single statewide permit, as a means to address inconsistent regional SSO reporting requirements and enforcement.[244]

The decision to use WDRs instead of a dual WDRs/NPDES permit rested in part on the State Board's concern that a Second Circuit decision might be applied more widely to "call[] into question the states' and USEPA's ability to regulate discharges that are only 'potential' under an NPDES permit."[245] When an agency owns both a collection system and the treatment facility to which it flows, and the treatment facility discharges effluent to waters of the United States, it is a simple matter to include the collection system in the required NPDES permit. However, NPDES permitting is less straightforward in other circumstances, for example, when the collection system in question is a so-called "satellite" collection system that is tributary to another agency's collection system, or when the collection system delivers wastewater to a treatment facility that is not intended to discharge to surface water and, therefore, does not have an NPDES permit.[246] The State Board has chosen to avoid these more challenging NPDES permitting scenarios. Instead it has highlighted the broader reach of the Porter-Cologne Act, noting that "a greater SSO universe is potentially subject to regulation under WDRs."[247]

A significant consequence of the State Board's decision to rely on WDRs alone is that, while the terms of an NPDES permit would be directly enforceable under the CWA, the terms of the Statewide Permit are not. As a result, citizen suits (described in **Chapter 4**) cannot pursue violations of the Statewide Permit, except to the extent they also violate CWA requirements.

**Table 5. Timeline of actions related to the development and update of the Statewide Permit.**

| Year | Action |
|---|---|
| **2004** | The State Board adopted a resolution directing staff to develop a proposed SSO Reduction Program in coordination with a diverse group of stakeholders (the SSO Guidance Committee).[248] |
| **2006** | On May 2, 2006, the State Board adopted Order No. 2006-0003-DWQ—"Statewide General Waste Discharge Requirements for Sanitary Sewer Systems" (Statewide Permit)—and an associated Monitoring and Reporting Program. |



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| | |
|---|---|
| **2007** | Deadlines for reporting to the online SSO Database were phased in over the year in three stages: January 2 (for Regions 4, 8, and 9), May 2 (for Regions 1, 2, and 3), and September 2 (for Regions 5, 6, and 7).[249] |
| **2008** | On February 20, 2008, the State Board's Executive Director amended monitoring and reporting requirements (via Order No. 2008-0002-EXEC) to ensure timely notification of agencies with first-responder duties. |
| **2009** | During September 2009, State Board staff held initial public meetings seeking comments on the performance of the SSO Reduction Program, including the Statewide Permit.[250] |
| **2010** | In January 2010, the State Board released a "Statewide Sanitary Sewer Overflow Reduction Program Compliance and Enforcement Plan" to increase program participation and effectiveness.[251] |
| **2011** | In March 2011, the State Board circulated draft revisions of the Statewide Permit and the associated Monitoring and Reporting Program, requesting public comment.[252] Among other things, the draft revisions would have required enrollment of privately managed sewer systems and reporting of private sewer lateral discharges that enrollees become aware of.[253] |
| **2012** | In January 2012, the State Board held a stakeholder worksho p about the revisions it proposed in 2011.[254] |
| **2012** | In August 2012, the State Board circulated a revised draft Monitoring and Reporting Program for the Statewide Permit and held related public meetings.[255] |
| **2013** | During January and March 2013, the State Board circulated further revisions of a d raft Monitoring and Reporting Program for the Statewide Permit.[256] |
| **2013** | On August 6, 2013, the State Board's Executive Director amended the Monitoring and Reporting Program for the Statewide Permit (Order No. 2013-0058-EXEC) to re-categorize and further distinguish different types of SSOs, add water quality sampling requirements for Category 1 SSOs "in which 50,000 gallons or greater are spilled to surface waters," and make other changes, effective on September 9, 2013.[257] |

As noted in **Table 5**, in 2006 the State Board adopted Order No. 2006-0003-DWQ, designating Statewide General Waste Discharge Requirements for Sanitary Sewer Systems ("Statewide Permit").[258] The Statewide Permit prohibits most SSOs, requires sewer system management planning, and includes monitoring, reporting, and public notification requirements.[259] The Permit applies to all public sanitary sewer systems more than one mile long.[260] As of June 8, 2015, 1,093 sanitary sewer systems were enrolled under the Statewide Permit.[261]

### *a. SSO prohibitions*

The Statewide Permit defines an SSO as "[a]ny overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system."[262] A sanitary sewer system is a "system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks[,] used to collect and convey wastewater to [a POTW]."[263] The Permit prohibits any SSO that results in a discharge (1) to waters of the United States or (2) that creates a nuisance.[264]

### *b. Sewer system management planning*

To reduce the occurrence and impacts of SSOs, each collection-system agency enrolled in the Statewide Permit must develop its own proactive approach to system operation, maintenance, and management, detailed in a self-certified sewer system management plan.[265] In all, an enrollee's sewer system management plan must address 11 elements, unless it can justify leaving an element out.[266] These are:

1. Goal
2. Organization: Detail organizational information and the chain of communication for SSO reporting
3. Legal authority: Demonstrate the necessary legal authority to
   - Prevent illicit discharges into the system
   - Require proper design and construction of sewers and connections
   - Ensure access to publicly maintained laterals
   - Limit the discharge of FOG and other debris into the system
   - Enforce violations of sewer ordinances

4. Operation and maintenance program: Develop and implement a system-appropriate operation and maintenance program that includes
   - An up-to-date system map
   - Routine preventative maintenance
   - Inspection and ranking of system deficiencies
   - Short- and long-term plans for rehabilitation and replacement of system assets
   - Staff and contractor training requirements
   - Equipment and replacement part inventories
5. Design and performance provisions: Establish standards, specifications, and procedures for the design, installation, inspection, testing, and repair of sewer system components
6. Overflow emergency response plan: Develop and implement an SSO response plan that protects public and environmental health, including
   - Procedures for notifying first responders, regulatory agencies, and others potentially affected
   - A program that ensures appropriate SSO response
   - Procedures that ensure staff and contractors follow the plan
   - Procedures addressing traffic, crowd control, and other necessary response activities
   - A program that ensures all reasonable steps are taken to contain SSOs, prevent discharge to waters of the United States, minimize adverse environmental impacts
7. FOG control program: Develop and implement a FOG control program including, as appropriate,
   - A public education and outreach program to promote proper FOG disposal
   - A plan and schedule for proper disposal of FOG generated within the system service area
   - Legal authority and capacity to prohibit FOG discharges to the system (e.g., requirements to install and maintain appropriate grease traps or interceptors), inspect facilities that produce grease, and enforce violations
   - Identification of, establishment of cleaning maintenance schedules for, and implementation of source control measures for parts of the collection system subject to FOG blockages
8. System evaluation and capacity assurance plan: Prepare and implement a capital improvement plan that provides for adequate hydraulic capacity for both dry weather peak flow conditions and the appropriate design storm / wet-weather event, including
   - Evaluation of parts of the system with hydraulic deficiencies that contribute to SSOs
   - Establishment of appropriate design criteria for key system components
   - Short- and long-term measures needed to address hydraulic deficiencies (e.g., increased pipe diameter, inflow/infiltration reduction programs, increased pumping capacity / redundancy, storage facilities), an implementation schedule, and funding sources
   - A schedule of completion dates for all portions of the capital improvement program
9. Monitoring, measurement, and program modification provisions:
   - Maintain information to establish and prioritize appropriate sewer system management plan activities
   - Monitor sewer system management plan implementation and effectiveness and assess the success of the preventative maintenance program
   - Update program elements based on monitoring or performance evaluations
   - Identify and illustrate trends SSO frequency, location, and volume
10. Program audits: Conduct internal audits at least every two years to evaluate sewer system management plan effectiveness and compliance, identifying deficiencies and corrective steps
11. Communication program:
12. Develop and implement a public communication program regarding sewer system management plan development, implementation, and performance that allows for ongoing public input
    - Create a plan of communication with tributary and/or satellite collection systems.[267]

An enrollee must either provide a web link (to be posted in the CIWQS Online SSO Database) where its sewer system management plan, critical referenced supporting documents, and proof of the local governing board's approval may be downloaded; submit an electronic copy of these materials to the State Board within 30 days of plan approval or re-certification.[268] If the plan is not available online, it must be available for public inspection at the enrollee's office.[269] Upon request, enrollees must make their sewer system management plan available to the State or Regional Board.[270] Some enrollees post their sewer system management plan online, but there is not currently a publicly accessible database containing all of them. As

of January 28, 2016, the SSO Database (SSMP.txt data flat file) included web links for only about 15% of enrolled collection systems; however, the State Board is pushing to increase that percentage.[271]

### *c. SSO monitoring, reporting, and notification requirements*

To support compliance oversight and protect public health, Statewide Permit enrollees must follow specific SSO monitoring, reporting, and emergency notification requirements that vary according to the type of SSO that occurs. The State Board established the initial requirements in 2006, and provided that its Executive Director may amend their terms at any time.[272] (See **Table 5**, above.)

#### Categories of SSOs

Different types of SSOs are subject to different monitoring, reporting, and notification requirements. Current requirements distinguish among four types of SSOs.[273]

Categories 1, 2, and 3 address "[d]ischarges of untreated or partially treated wastewater of any volume resulting from an enrollee's sanitary sewer system failure or flow condition"—in other words, SSOs caused by problems within portions of the sewer system over which an enrollee has control.[274] Category 1 encompasses SSOs of any volume with direct impacts to surface waters, including both SSOs that directly reach surface water or drainage channels that feed into surface waters and those that "[r]each a Municipal Separate Storm Sewer System (MS4) and are not fully captured . . . and disposed of properly."[275] Category 2 includes non-Category 1 discharges with volumes greater than or equal to 1,000 gallons.[276] Finally, Category 3 includes all remaining SSOs (i.e., non-Category 1 discharges with volumes less than 1,000 gallons).[277] **Table 6**, below, highlights the similarities and differences between these categories and pre-2013 SSO categories.

**Table 6. Comparison between current and pre -2013 categories of SSOs caused by problems within an enrollee's collection system.**[278]

| | **Current categories** (2013 to present) | | **Old categories** (2006 to 2013) |
|---|---|---|---|
| **Category 1** | Reaching surface water or a drainage channel tributary to surface water | = | Reaching surface water or a drainage channel |
| | Reaching an MS4, if not fully captured and disposed of properly | = | Reaching a storm drainpipe, if not fully captured and returned to the sanitary sewer |
| | - - - | | ~~Other SSOs of at least 1,000 gallons~~ |
| **Category 2** | **Other SSOs of at least 1,000 gallons** | | ~~All other SSOs~~ |
| **Category 3** | **All other SSOs** | | - - - |

The fourth type of SSO—a private sewer lateral discharge—results from problems in parts of the sewer system that lie outside an enrollee's control.[279] Although enrollees can voluntarily report known discharges of this type, there is no mandate to do so under the Statewide Permit.[280]

#### Electronic reporting requirements: SSO reports and "no spill" certifications

All Category 1, 2, and 3 SSOs must be reported to the California Integrated Water Quality System (CIWQS) Online SSO Database (SSO Database).[281] If an enrollee experiences no SSOs during a particular reporting period (monthly or quarterly), it must submit a "no spill" certification by 30 days after the end of the period.[282]

To provide context for understanding and interpreting reported SSO data, enrollees must complete and annually update an online Collection System Questionnaire that captures facility and organizational information.[283]

Electronic SSO reporting under the Statewide Permit was phased in: enrollees in in Regions 4, 8, and 9 had to begin reporting by January 2, 2007; enrollees in Regions 1, 2, and 3 had to begin reporting by May 2, 2007; and enrollees in Regions 5, 6, and 7 had to begin reporting by September 2, 2007.[284]

#### Emergency notification requirements

Special notification requirements apply to Category 1 SSOs that could discharge 1,000 or more gallons to surface waters. Within two hours of learning of such an SSO, an enrollee must notify the California Office of Emergency Services (Cal OES).[285] Although not required to do so, enrollees are also "strongly encouraged" to notify Cal OES of similar SSOs from private sewer assets that come to their attention.[286]

#### Water quality monitoring

Since 2013, Category 1 SSOs that discharge 50,000 or more gallons into surface waters have triggered water quality monitoring requirements.[287] Each enrollee must "develop and implement an SSO Water Quality Monitoring Program to assess impacts" related to such SSOs.[288] The program must include water quality sampling of ammonia and bacterial indicators within 48 hours and submission of an SSO Technical Report describing the causes and circumstances of the SSO, the enrollee's response, and water quality monitoring activities undertaken within 45 days after the SSO ends.[289]

### 2. Additional or overlapping requirements

While the State Board intended the Statewide Permit to "be the primary regulatory mechanism for sanitary sewer systems statewide," the Regional Boards can "issue more stringent or more prescriptive WDRs. "[290] Indeed, by the time the State Board adopted the Statewide Permit, some Regional Boards had already issued WDRs or dual-purpose WDRs/NPDES permits for sanitary sewer systems in their jurisdictions.[291] Therefore, going forward, the State Board required Regional Boards to coordinate the requirements of new or reissued WDRs with those in the Statewide Permit, identifying more stringent requirements, removing less stringent requirements, and providing "consistency in reporting."[292]

Some collection systems have only been required to have coverage under the Statewide Permit, but others have been required to have NPDES permit coverage as well. In the State Board's view, a satellite collection system that is intended to discharge only into another collection system—and not to surface waters—would not generally need to be issued an NPDES permit.[293] On the other hand, a collection system that is part of a POTW that discharges treated effluent to waters of the United States must have an NPDES permit.

#### *a. Discharge prohibitions in NPDES permits*

Discharge prohibitions are among the most basic provisions in any NPDES permit. For POTWs, they commonly include language that bars the discharge of wastewater at a location (or in a manner) different from that authorized by the permit—usually one or more specifically identified outfalls from the treatment facility with associated effluent and receiving-water limitations.[294] This prohibition is general in nature but clearly encompasses SSOs, which by definition do not occur at official outfall points or meet water quality requirements. Another common prohibition bars discharge of untreated wastewater to waters of the United States.[295] SSOs are clearly included in the prohibition.

#### *b. Standard permit conditions in NPDES permits*

The State Board has directed the Regional Boards to write NPDES permits for POTWs in a way that makes clear that EPA's standard permit provisions regarding proper operation and maintenance, the duty to mitigate, and non-compliance reporting apply to a permittee's collection system.[296] Individual POTW permits generally refer to (and effectively incorporate by reference) the Statewide Permit for more detail about what constitutes proper operation, management, and mitigation.[297]

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### *c. More stringent or more detailed requirements in NPDES permits*

The Regional Boards have the power to include additional SSO-related requirements in NPDES permits on a case-by-case basis or as Regional standard permit conditions.

Currently, the Los Angeles Regional Board issues permits that include heightened notification, monitoring, and reporting requirements to POTWs across the region.[298] For example, permittees must sample receiving waters for all SSOs that reach waters of the state,[299] a requirement that goes well beyond the Statewide Permit's requirement to sample for SSOs that discharge at least 50,000 gallons to surface waters.

### *d. More stringent or more detailed requirements in other WDRs*

The Regional Boards can also impose additional SSO-related requirements in WDRs they issue.

In 2007, the San Diego Regional Board issued an order (R9-2007-0005) directing all Statewide Permit enrollees in the region to abide by additional requirements.[300] The order prohibits "[t]he discharge of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant," not just SSOs that reach waters of the United States or create a nuisance.[301] Additionally, enrollees *must* report any private sewer lateral discharge that equals or exceeds 1,000 gallons, enters a drainage channel or surfacewater, or enters a storm drainpipe and is not fully recovered to the State Board.[302]

While the San Francisco Bay Regional Board previously imposed additional reporting requirements on all Bay Area enrollees to the Statewide Permit, these were apparently rescinded in 2012.[303] Similarly, the Central Coast Regional Board has rescinded a number of the WDRs it had issued to individual sanitary sewer systems in the region.[304]

**Chapter 2 summary:**

- A discharge of pollutants violates the federal Clean Water Act (CWA) when it (1) is prohibited by a National Pollutant Discharge Elimination System (NPDES) permit, (2) represents a violation of NPDES permit requirements or conditions, or (3) is not authorized by an NPDES permit.
  - The CWA bars discharge of pollutants from a point source into waters of the United States without an NPDES permit.
    - Discharges from publicly owned treatment works (POTWs), which include sanitary sewer systems, must meet secondary treatment standards (or more stringent standards required to meet state water quality standards) to be authorized in an NPDES permit.
    - SSOs, by nature, do not meet secondary treatment standards. Therefore, SSOs to waters of the United States cannot be authorized under the CWA.
  - SSOs that do not reach waters of the United States may still violate the CWA if they violate NPDES permit conditions intended to ensure CWA compliance.
- Based on its authority under California's Porter-Cologne Water Quality Control Act, the State Water Resources Control Board (State Board) adopted Statewide General Waste Discharges Requirements for Sanitary Sewer Systems (the "Statewide Permit") in 2006.
  - The Statewide Permit is not an NPDES permit.
  - It applies to all public sanitary sewer systems at least a mile in l ength.
  - It prohibits any SSOs that results in a discharge t o waters of the United States or creates a nuisance.
  - It requires the development and implementation of a sewer system management plan for each enrolled collection system, reporting of all SSOs to a statewide publicly accessible online database, and water quality monitoring for any Category 1 SSO that discharges at least 50,00 gallons.



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# CHAPTER 3 – SSO enforcement by federal and state regulators

The CWA gives provides for enforcement by multiple actors. Although this report focuses on citizen enforcement, an overview of government enforcement provides important context for understanding the functional role citizen action plays and the interaction between citizen and government enforcement actions (discussed in **Chapter 7**).

This chapter summarizes federal and state enforcement and examines the role of regulator discretion and prioritization. EPA can pursue enforcement actions to address CWA violations, including SSOs to waters of the United States and NPDES permit violations (see **Chapter 2.A**). State regulators can initiate enforcement actions for both CWA violations and violations of state law, including violationsof the Statewide Permit itself. As **Chapter 2.B.1** explained, because the Statewide Permit is not an NPDES permit, it is not directly enforceable under the CWA.

## A. Federal enforcement addressing CWA violations

EPA can take enforcement actions to address NPDES permit violations or violations of the CWA itself. In fact, the language of the CWA appears to require it to do so.[305] The agency can issue a compliance order, assess administrative penalties after consultation with the state, or takethe violator to court.[306] Longstanding EPA policy limits when the agency may take direct enforcement action and encourages federal/state enforcement coordination.[307]

Federal courts can impose civil penalties of up to $37,500 per day for each CWA violation.[308] The amount of the penalty depends upon "the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good-faith efforts to comply with the applicable requirements, the economic impact of the penalty on the violator, and such other matters as justice may require."[309]

Alternatively, EPA can assess administrative penalties of up to $16,000 per violation per day after "public notice of and reasonable opportunity to comment on" a proposed penalty order.[310] When determining the penalty amount, the EPA must "take into account the nature, circumstances, extent and gravity of the violation, or violations, and, with respect to the violator, ability to pay, any prior history of such violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require."[311]

Federal civil or administrative penalties typically go to the U.S. Treasury, rather than directly to efforts to improve water quality.[312]

**Chapter 7.B.1.a** summarizes EPA enforcement actions since 2007 against California collection system agencies.

## B. State enforcement addressing CWA or Statewide Permit violations

Under state law, the State and Regional Boards have access to similar enforcement tools for addressing violations of NPDES permits and CWA violations. Theycan issue a variety of administrative orders (described below) to compel compliance, pursue lawsuits to achieve injunctive or monetary relief, or assess administrative civil liability (administrative civil penalties).

One crucial differencebetween state and federal enforcement authority is that the State and Regional Boards can address violations of the Statewide Permit directly, whether or not they would be considered CWA violations—for example, SSOs that do not reach waters of the United States but create a nuisance; monitoring, reporting, and notification violations; andSewer System Management Plan related failures.

So far, the State Board has focused its efforts largely on "outreach, reporting and notification compliance, database development, training, development of a spill mapping tool,. . . and review and update" of the

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Statewide Permit.[313] The Board is also working to increase the breadth and depth of compliance assistance and enforcement information in its SSO Reduction Program Library, which has grown substantially over the past few months.[314]

In parallel, the State Board's Office of Enforcementhas assisted the Regional Boards, which have primary water-enforcement responsibility in their regions,[315] in conducting inspections and taking enforcement actions for SSOs and other Statewide Permit violations.[316] These include informal actions that are not defined in a statute or regulation—like verbal warnings, staff enforcement letters (SELs), and notices of violation (NOVs)[317]—as well as formal actions,[318] like § 13267 letters requesting "technical or monitoring reports" from dischargers or suspected dischargers,[319] cleanup and abatement orders (CAOs) requiring waste cleanup or abatements of its effects,[320] time schedule orders,[321] cease and desist orders (CDOs) to stop or prevent discharges or threatened discharges in violation of discharge prohibitions or other requirements,[322] and imposition of administrative civil liabilities (ACLs).[323] Civil penalties paid to the state are placed in a Cleanup and Abatement Account that funds waste cleanup or abatement of the effects of waste on waters of the state.[324]

**Chapter 7.B.1.b** summarizes Regional Board enforcement actions against California collection system agencies.

## C. Government enforcement discretion

Neither the CWA nor the Statewide Permit include affirmative defenses for prohibited discharges, and, as described above in **Part A** of this chapter, the CWA appears to require enforcement for violations. Therefore, collection system agencies could face government enforcement action in response to any SSO, no matter how small, that reaches waters of the United States, demonstrates evidence of improper operation or maintenance, or creates a nuisance. However, there are no mandatory minimum penalties for SSOs, and courts have interpreted regulators to have considerable discretion in deciding when and how to enforce SSOs and other CWA violations.[325] Federal and state policies guide the use of this discretion as described below.

While on paper there appears to be a strict "zero tolerance" standard, in practice the number and extent of enforcement actions (described in **Chapter 7**) is relatively small in comparison to the incidence of SSOs in each Region and across the state (summarized in **Chapter 1.B**). In the following sections, we describe how EPA and state regulators prioritize their enforcement activities, the factors courts and regulators must consider when assessing civil penalties, and what factors regulators must take into account in crafting alternatives to administrative penalties in settlement agreements.

### 1. Enforcement prioritization

#### Federal priorities

For more than a decade, EPA has identified "keeping raw sewage . . . out of our nation's waters" as a national enforcement priority.[326] However, as a matter of policy, the agency leaves primary enforcement responsibility to authorized states with adequate enforcement programs.[327]

EPA's 2005 *Guidelines for Federal Enforcement in CSO/SSO Cases* describe circumstances in which direct federal enforcement action is potentially appropriate.[328] The guidelines an other EPA policy support action in response to specific requests from state regulators or when one or more of the following is at issue: (1) the lack of a timely and appropriate state response, (2) national legal or programmatic precedents, (3) violation of an EPA order or consent decree, or (4) "the broader national interest in deterring noncompliance."[329] The guidelines limit the latter to circumstances in which the violator is a "large" sewer system, the violations potentially affect multiple states or another country, significant environmental impacts of the violations remain unaddressed, or a notice of a citizen suit has been filed under the CWA.[330]

Nationwide, EPA has primarily targeted sanitary sewer systems producing more than 10 million gallons of wastewater per day for enforcement.[331] However, by 2009 EPA recognized that its focus on "large" violators



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did not necessarily address the most important water pollution problems.[332] EPA has stated that it needs to link environmental data and compliance data, housed in separate systems and not r outinely used together, and fill data gaps to help improve targeting.[333]

### State and Regional Board priorities

To increase the consistency and efficiency of water quality enforcement across the State and Regional Boards, the State Board developed a Water Quality Enforcement Policy that includes a system forranking violations and prioritizing discretionary enforcement actions.[334] The highest priority classification (Class I) includes violations that "pose an immediate and substantial threat to water quality and have the potential to cause significant detrimental impacts to human health or the environment" as well as violations by parties "who deliberately avoid compliance with water quality regulations and orders. "[335] Class II violations include those that "pose a moderate, indirect, or cumulative threat to water quality" as well as "[n]egligent or inadvertent noncompliance" that could potentially allow an unauthorized discharge or obscure past violations.[336] All other violations fall into Class III. These are limited to first-time or infrequent violations that "pose only a minor threat to water quality and have little or no known potential for causing a detrimental impact on human health and the environment."[337]

The Water Quality Enforcement Policy directs Regional Boards to focus their formal enforcement efforts on entities with Class I violations.[338] It sets out nine criteria to help further refine enforcement prioritiesand requires Regional Boards to identify and reevaluate their priorities each year.[339]

Within the SSO context, the State Board has used different metrics to prioritize potential enforcement cases—most recently, a composite "spill ranking tool."[340]

## 2. Factors affecting civil penalty assessment

Together, the California Water Code § 13327, State Board's Water Quality Enforcement Policy, and the Statewide Permit itself guide the use of enforcement discretion in assessing ACLs.

When determining the amount of civil liability, Water Code § 13327 requiresa Regional Board to "take into consideration the nature, circumstance, extent, and gravity of the violation or violations, whether the discharge is susceptible to cleanup or abatement, the degree of toxicity of the discharge, and, with respect to the violator, the ability to pay, the effect on ability to continue in business, any voluntary cleanup efforts undertaken, any prior history of violations, the degree of culpability, economic benefit or savings, if any, resulting from the violation, and other matters as justice may require."

The Water Quality Enforcement Policy builds on Water Code § 13327 by laying out requirements for any discretionary assessment of ACL,[341] and detailing a penalty calculation methodology.[342]

Finally, the Statewide Permit requires consideration of the Water Code § 13327 factors "consistent with" the Enforcement Policy, when determining the amount of liability.[343] In assessing these factors, the State or Regional Board must consider:

- To what degree the enrollee complied with the Statewide Permit;
- Whether the enrolleeidentified the SSO's likely cause;
- Whether there were any feasible alternatives to the SSO (including system improvements that would have prevented the SSO);
- Whether the SSO was "exceptional, unintentional, temporary, or caused by factors beyond the reasonable control of the Enrollee";
- Whether the enrollee could have prevented the SSO "by the exercise of reasonable control described in a certified SSMP";
- Whether the sanitary sewer system has appropriate capacity; and
- Whether the enrollee "took all reasonable steps to stop and mitigate the impact of the [SSO]."[344]



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ACLs are imposed after an administrative hearing or negotiated pursuant to a settlement agreement.[345]

Guided discretion is also the norm at the federal level. The CWA explicitly requires courts (in judicial actions brought by regulators or citizens) and EPA (in the administrative enforcement actions it brings) to take into account factors similar to those outlined in Water Code § 13327 when assessing penalties for CWA violations.[346]

### 3. Settlements that reduce, or allow the completion of projects in lieu of, penalties

Generally, State or Regional Board staff will issue an ACL complaint explaining the proposed civil liability. [347] The violator is entitled to a hearing, but may waive the hearing and either pay the proposed amount in full, enter settlement negotiations on the amount of the ACL, or make a proposal for suspension of a portion of the ACL contingent on completion of a supplemental environmental project (SEP) or enhanced compliance action.[348]

The State Board's Policy on Supplemental Environmental Projects defines SEPs as "projects that enhance the beneficial uses of the waters of the State, that provide a benefit to the public at large and that, at the time they are included in the resolution of an ACL action, are not otherwise required of the discharger."[349] Without a compelling justification, SEPs should account for no more than half of the total adjusted monetary assessment.[350] They can be performed by the defendant or by legally and organizationally independent third parties.[351] SEPs must "go above and beyond" the violator's existing obligations and "*directly* benefit or study groundwater or surface water quality or quantity, and the beneficial uses of waters of the State," and the scope of an SEP must be defined at the time it is authorized.[352] It must have a nexus with the discharger's violations.[353] It may not result in direct financial benefit to the Regional Board.[354] SEPs are imposed as stipulated ACL orders.[355] A list of SEPs completed and in progress must be posted on the State Board's website each year.[356]

The State Board defines an enhanced compliance action is a project that enables a violator "to make capital or operational improvements beyond those required by law."[357] It cannot be a project that is designed "to merely bring a discharger into compliance."[358] Enhanced compliance actions are generally subject to the same rules that apply to SEPs.[359]

EPA's policy regarding SEPs is similar the the State Board's policy.[360]



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**Chapter 3 summary:**

- Although this report focuses on citizen enforcement, an overview of government enforcement provides useful context for understanding the functional role citizen action plays, and is necessary to understand the interaction between citizen and government enf orcement actions, discussed in **Chapter 7**.
- EPA can pursue enforcement actions to address CWA violations, including SSOs to waters of the United States and NPDES permit violations, by issuing a compliance order, taking the violator to court, or (after consultation with the state) assessing administrative civil penalties.
    - Federal penalties generally go to the U.S. Treasury, so they do not directly benefit water quality.
- State regulators can initiate enforcement actions for both CWA violations and violations of state law, including violations of the Statewide Permit itself , by issuing administrative orders (e.g., cease and desist orders, cleanup and abatement orders) to compel compliance, pursue lawsuits to achieve injunctive or monetary relief, or assess administrative civil liability (penalties).
    - Penalties paid to the state are placed in a Cleanup and Abatement Account that funds waste cleanup or abatement of the effects of waste on waters of the state.
- Theoretically, collection system agencies could face government enforcement action in response to every SSO that reaches waters of the United States, demonstrates evidence of improper operation or maintenance, or creates a nuisance.
- In practice, guided government enforcement discretion appears to provide substant ial relief from what, on paper, appears to be a strict "zero tolerance" standard.
    - So far, EPA has mainly geared its enforcement effort toward "large" sanitary sewer systems, leaving most of the enforcement burden to the state.
    - The State Water Resources Control Board has developed a Water Quality Enforcement Policy that includes a system for ranking violations and prioritizing discretionary enforcement actions, like those addressing SSOs (as distinguished from violations that require imposition of mandatory minimum penalties).
    - EPA, the State and Regional Boards, and courts all must analyze a series of factors when determining the size of civil penalties.
    - As part of a settlement agreement, the State and Regional Boards or EPA may suspend some portion of administrative civil penalties contingent upon the completion of a project with environmental benefits that is not otherwise legally required.

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# CHAPTER 4 – Citizen enforcement under the Clean Water Act

In addition to state and federal regulators, private individuals and organizations play a role in water quality oversight and enforcement. This Chapter describes the CWA's citizen suit requirements, summarizes the remedies that are potentially available to citizen plaintiffs, discusses the availability of attorneys' fees and other litigation costs, and explains how courts deal with concurrent citizen and regulator lawsuits.

California law does not include a citizen suit provision. Instead, the avenues for public oversight and enforcement of state water quality laws include bringing a potential enforcement matter to the Boards' attention, participating in the Boards' processes for developing orders, policies, and water quality control plans, and requesting review of Board decisions.[361] The Porter-Cologne Act specifically allows "an aggrieved person" to petition the State Board for administrative review of "any action or *failure to act* by a [R]egional [B]oard."[362] The State Board's decision in such a case is potentially subject to judicial review.[363] Additionally, state law claims for private nuisance, public nuisance, and trespass may be available.

One of the CWA's key enforcement tools is its provision empowering members of the public to initiate lawsuits against polluters when state or federal authorities fail to act. These "citizen suits" can spur regulators into action or pick up the slack when their enforcement capacity is overextended.[364] Federal courts, including the Ninth Circuit, have described citizen suits as "necessary" for effective CWA enforcement.[365]

For the convenience of readers, we have compiled an **Online Supplement**, available at *http://www.law.berkeley.edu/SSO-citizen-enforcement*, that contains the text of the CWA's citizen suit provision and related EPA regulations.

## A. Citizen suit requirements

The general outlines of citizen enforcement under the CWA are straightforward. Any "citizen" may file a lawsuit in federal district court against an individual or entity[366] the citizen believes is violating an effluent standard, limitation, or related administrative order.[367] In this context, the term "citizen" is not limited to U.S. nationals but rather covers any "person or persons having an interest which is or may be adversely affected" by the alleged violation.[368] "Persons" includes entities such such as private organizations and governments.[369] The CWA defines "effluent standard or limitation" broadly so that it encompasses any NPDES permit condition, as well as the basic tenet that pollutant discharges are illegal except in compliance with the CWA.[370]

In the SSO context, the citizen suit provision supports citizen enforcement action to address SSOs that reach waters of the United States and, where an NPDES permit applies to the collection system, violations of the NPDES permit. Violations of the Statewide Permit are not directly enforceable under the CWA. (See **Chapters 2.B.1 and 3**.)

To establish that a discharge violated the CWA, a plaintiff must prove that (1) a person (2) added (3) a pollutant (4) to waters of the United States (5) from a point source (6) without authorization by an NPDES permit.[371] In general, a collection system agency's self-reporting of SSOs that reach waters of the United States, either directly or via an intermediary like a drainage channel or MS4, provide a straightforward basis for citizen enforcement action.[372]

The following subsections summarize additional citizen suit requirements and considerations.

### 1. Citizen plaintiffs must provide adequate notice of their intent to file suit (NOI)

Citizen suits are "meant to supplement rather than to supplant governmental action."[373] Therefore, the CWA requires citizens to provide notice 60 days before filing a lawsuit to allow time for the alleged violator to bring itself into compliance or for state or federal regulators to take appropriate enforcement action.[374]



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A citizen plaintiff must provide notice of its intent to file suit to the EPA Administrator, the appropriate state agency, and the alleged violator.[375] Notice must provide enough specificity about the nature and timing of alleged violations to "give the accused . . . the opportunity to correct the problem."[376] Failure to provide adequate notice is a complete bar to a citizen suit under the CWA; where the notice requirement is not met, "the district court must dismiss the action as barred by the terms of the statute."[377]

### 2. Citizen plaintiffs must demonstrate standing to bring the action

In order to bring a citizen suit in federal court under the CWA, a citizen plaintiff must have standing. To establish standing under the CWA, "a plaintiff must show (1) it has suffered an 'injury in fact'[378] that is (a) concrete and particularized and (b) actual or imminent, not conjectural or hypothetical; (2) the injury is fairly traceable to the challenged action of the defendant; and (3) it is likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision."[379]

The Ninth Circuit has explained that "an individual can establish 'injury in fact' by showing a connection to the area of concern sufficient to make credible the contention that the person's future life will be less enjoyable—that he or she really has or will suffer in his or her degree of aesthetic or recreational satisfaction—if the area in question remains or becomes environmentally degraded."[380] It is typically not difficult for plaintiffs to establish sufficient injury; it is sufficient that an individual plaintiff or a member of a plaintiff organization[381] uses an affected waterway.

The CWA requires citizen suits to be based on allegations of ongoing violations.[382] Although allegations of "wholly past" violations will not support citizen enforcement,[383] case law acknowledges that "an intermittent polluter . . . is just as much 'in violation' of the Act as a continuous violator."[384]

Claims of violations must be "based on a good-faith belief, formed after reasonable inquiry."[385] By ensuring that allegations are "well grounded in fact," this requirement is intended to provide protection for defendants from frivolous claims.[386] Courts have not required absolute certainty of a violation. Instead, a plaintiff must establish that "a defendant discharges a pollutant that causes or contributes to the kinds of injuries alleged in the specific geographic area of concern."[387] For example, it is sufficient for a plaintiff to submit "substantial evidence that [a] Defendant's SSOs have 'contributed' to the injuries suffered."[388] Collection-system-aligned interest do not perceive the "good faith belief" requirement to be a sufficient bar to unjustified litigation.

### 3. EPA or a state regulatory agency cannot be diligently prosecuting the matter

As mentioned above, a federal or state enforcement action may bar citizen enforcement under the CWA's citizen-suit provision. Citizen enforcement is intended to "supplement rather than to supplant" government enforcement.[389] Therefore, even when the standing and notice requirements of the citizen suit provision are met, in general a citizen suit may not be brought if the EPA or a state agency is "diligently prosecuting" the matter.[390] The diligent prosecution bar avoids duplicative enforcement actions that would unduly burden alleged violators and waste judicial and party resources.[391]

There are different schools of thought about how administrative enforcement actions should impact citizen suits under the CWA. One views the supplemental role of citizen enforcement narrowly—where the state or federal government has acted to enforce CWA violations in any way, citizen suits should not be allowed to proceed.[392] In general, this is not how diligent prosecution has played out so far in the courts.

Diligent prosecution can take two basic forms: a lawsuit by a regulatory agency or an administrative penalty action. The first form comes into play when a regulatory agency has commenced and is diligently prosecuting a civil or criminal action in court "to require compliance with the standard, limitation, or order" the citizen suit targets.[393] In this situation, the citizen has the right to intervene in the government lawsuit.[394]

The second form of the diligent prosecution bar prevents a citizen from seeking civil penalties for a violation when a regulatory agency has commenced and is diligently prosecuting an administrative action that provides for the assessment of penalties under the CWA or a comparable state law for the same violation.[395]



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There is some disagreement in the federal courts about whether an administrative penalty action bars a citizen suit altogether, or just claims for civil penalties.[396] The Ninth Circuit has not yet directly addressed this issue.[397] However, in one of the cases we identified through our research, the U.S. District Court for the Northern District of California found that an Administrative Civil Liability (ACL) complaint assessing penalties barred only the citizen group's claims for civil penalties for violations that occurred during the period addressed by the ACL, not its claims for injunctive or declaratory relief or civil penalties for other violations.[398] Under this interpretation, EPA Administrative Orders (AOs) and State or Regional Board Cease and Desist Orders (CDOs) or Cleanup and Abatement Orders (CAOs) alone would not bar citizen suits.

### 4. Citizen plaintiffs must keep government enforcement officials in the loop

The CWA's citizen suit provision requires government enforcement officials to be informed about citizen enforcement actions so that they can provide oversight if they choose to do so. EPA policy emphasizes that "it is important for the Agency to monitor citizen lawsuits to the extent possible to ensure proper construction of regulatory requirements and avoid problematic judicial precedents."[399] Keeping EPA and the U.S. Department of Justice (U.S. DOJ) in the loop also allows "the federal government to support the citizens were feasible . . . in order to advance . . . federal enforcement interests."[400] Such communications are required at several stages of prosecuting a citizen suit:

NOI — A prospective citizen plaintiff must provide notice of intent to both the EPA administrator and the appropriate state agency.[401]

Complaint — When a suit is actually filed, the citizen plaintiff must serve the U.S. Attorney General and the EPA Administrator with a copy of the complaint.[402] EPA has the right to intervene in any CWA citizen suit.[403]

Proposed consent decree / settlement agreement — Finally, the plaintiff must serve the EPA Administrator, the Regional EPA Administrator, and the U.S. DOJ's Citizen Suit Coordinator with signed copies of a proposed "consent judgment" when the parties file it with the court.[404] To allow time for government review and comment, the court must wait at least 45 days from the date the EPA Administrator and U.S. DOJ receive the proposed consent judgment before entry.[405] EPA generally coordinates with the U.S. DOJ to formulate a response action, "such as a comment letter to the court, whenever necessary or advisable."[406]

The U.S. DOJ views the term "consent judgment" in the CWA's citizen suit provision to have "a broad meaning" that "encompasses all instruments entered with the consent of the parties that have the effect of resolving any portion of the case."[407] By this definition, even "private" settlement agreements reached during the course of litigation that ends in stipulated dismissal (see **Box 2**, below) require federal review. The U.S. DOJ reviews agreements for compliance with the CWA's requirements and consistency with the statute's purposes.[408] While comments from the U.S. DOJ or EPA submitted during the review period may influence the court's decision, they are not binding on it.[409]

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**BOX 2.** Types of settlement agreements

**Consent decree —** A consent decree, also known as a consent judgment, is an injunctive order reflecting the settlement terms parties have agreed to that is entered as the judgment of the court.[410] The issuing court retains jurisdiction over the case for the purpose of enforcing or modifying the decree. Just as for private settlements, general principles of contract law govern consent decree interpretation.[411] However, if a party does not comply, it can be held in contempt of the court that issued the consent decree[412]—the federal district court, in CWA cases.

**Judicially enforceable settlement agreement** — In the Ninth Circuit, if parties to a lawsuit in federal district court enter into a settlement agreement that is binding and that the district court retains jurisdiction to enforce, the agreement is functionally equivalent to a consent decree.[413]

**Private settlement agreement —** A settlement agreement reached outside the context of a lawsuit is merely a private contract between two or more parties. This includes the "pre-litigation settlements" we describe in this report. General principles of contract law govern its interpretation.[414] If the agreement allows it, a party can bring a lawsuit for breach of contract in state court to enforce violations. Private settlement agreements also include those reached during a lawsuit that are never submitted to the court and those over which the court does not specifically retain jurisdiction for the purpose of enforcement. Unlike consent decrees, the terms of private settlements agreements can be kept confidential.[415]

In this report, we generally refer to all three as "settlement agreements" or "settlements" unless the legal distinctions are important.

As described above, the U.S. DOJ has interpreted the term "consent judgement" in the CWA's citizen suit provision to encompass all three categories of settlement agreements, except for those we call pre-litigation settlements in this report. The Department has also requested that parties submit any pre-litigation settlements to it for informational purposes.[416]

## B. Remedies potentially available to citizen plaintiffs

Citizen plaintiffs can seek declaratory relief, injunctive relief, and civil penalties. Other forms of monetary relief may be available if the parties enter into a settlement agreement.

### 1. Declaratory and injunctive relief

Under the CWA, citizen plaintiffs generally seek both declaratory and injunctive relief.[417]

By requesting declaratory relief for SSOs, the plaintiff is asking the court to enter a judgment[418] stating that the defendant has discharged wastewater to waters of the United States in violation of the CWA. It represents the court's legal conclusion on the merits of the case.

An injunction is a court order commanding the defendant to do, or not do, something. Injunctive relief for CWA violations generally requires the defendant to cease violating the CWA; however, the court can include more specific requirements as well.[419] Settlement agreements can include a wide variety of general or specific injunctive terms (see **Chapter 6.B.1**).

### 2. Civil penalties

Citizen plaintiffs can seek the imposition of civil penalties of up to $37,500 per day/per violation, payable to the U.S. Treasury, in conjunction with injunctive relief.[420] As we described in **Chapter 3.C.2**, courts take into account an array of factors in determining what amount of penalties is appropriate. The Supreme Court has



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emphasized that these remedies serve an important enforcement function.[421] Since federal civil penalties go to the U.S. Treasury, they do not directly benefit water quality and are not generally included in citizen-initiated settlements or consent decrees. Instead, "[t]he threat of civil penalties is [often] leveraged to obtain monetary payments for project[s] and activities of direct interest to the citizen organization,"[422] described in more detail below.

### 3. Other monetary payments (as part of a settlement)

Defendants may agree to make payments as part of a settlement agreement.[423] The CWA contains "no limitation on the type of payments to which parties to citizens' suits can agree in a settlement."[424]

Citizen settlements agreements often include payments identified as supplemental environmental projects (SEPs) or mitigation payments, settlement compliance monitoring payments, and stipulated payments for violations of the settlement agreement (see **Chapter 6.B.2**).

The settlement terms described as SEPs or mitigation payments in citizen settlement agreements are not bound by the policies summarized above in **Chapter 3.C.3**, which apply to SEPs in settlement agreements entered into as part of government enforcement actions. Therefore, SEPs in citizen settlements sometimes include projects with only indirect water quality benefits—for example, watershed education programs (see **Chapter 6.B.2**).[425] However, EPA and U.S. DOJ may use EPA's SEP policy in reviewing the proposed SEPs included in citizen settlement agreements (as mentioned above in **Part A.4** of this chapter).[426] Some settlement agreements directly identify the ultimate recipient of the SEP funds, while others generally identify the SEP and provide for payment to a third party who will identify one or more recipients, distribute the SEP funds to them, and track their progress.[427]

## C. Availability of attorneys' fees and other costs of litigation

The CWA's citizen suit provision, like many analogous federal provisions, allows a district court to award litigation costs, "including reasonable attorney and expert witness fees," "to any prevailing or substantially prevailing party, whenever the court determines such award is appropriate."[428]

The Ninth Circuit has interpreted "prevailing" and "appropriate" to strongly favor awarding attorneys' fees to citizen plaintiffs. "A litigant qualifies as a prevailing party if it has obtained a court-ordered change in the legal relationship between the plaintiff and the defendant."[429] This includes not only a judgment on the merits, but also a judicially enforceable settlement agreement[430] that achieves "an important part of what [the plaintiff] sought in his suit under the CWA."[431] An award of attorneys' fees to a prevailing plaintiff is generally appropriate "unless special circumstances would render such an award unjust"—making fee awards, in the words of the Ninth Circuit, "the rule rather than the exception."[432] Other circuit courts have interpreted appropriateness in different ways,[433] leading some circuits to award attorneys' fees more liberally and some more conservatively.[434]

By contrast, a prevailing defendant can generally recover attorneys' fees under the CWA only if the plaintiff's claims were "frivolous, unreasonable, or groundless, or . . . the plaintiff continued to litigate the suit after it clearly became so."[435]

After a court determines that a party has prevailed and a fee award is appropriate, it must decide on the amount that is reasonable under the circumstances.[436] Initially, the court must multiply "the number of hours reasonably expended on the litigation . . . by a reasonable hourly rate."[437] That amount may be adjusted up or down based on the evaluation of additional factors, including "the degree of success obtained."[438]

When the parties to a CWA lawsuit settle, they negotiate settlement terms in the shadow of the expected outcome if the suit went forward—this includes an analysis of the probability that the citizen plaintiff would be able to recover litigation costs. Therefore, settlement agreements often include payments identified as attorneys' fees and costs (see **Chapter 6.B.2**). These are negotiated between the parties and may not be based on a detailed accounting of the actual work expended.



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For a brief discussion of the availability of attorneys' fees and incentives for citizen enforcement and settlement under the CWA, see **Box 8** in **Chapter 11**.

## D. The interaction of concurrent citizen and regulator lawsuits—overfiling and consolidation

Citizen suits do not bar later government enforcement action —whether administrative or judicial—related to the same violations. Although the CWA allows EPA to intervene in a citizen suit, historically, the agency has rarely used this option.[439] It is similarly uncommon for the State or Regional Boards to intervene.[440]

A later-filed government lawsuit would not prevent a citizen suit from proceeding in the first instance. However, if the government case reaches a conclusion first, *res judicata* (claim preclusion) could prevent the overfiled citizen suit from continuing.[441] Another route courts have taken is to consolidate later-filed government suits with existing citizen suits in order to conserve judicial resources and avoid inconsistent outcomes.[442]

**Chapter 4 summary:**

- The Clean Water Act (CWA) gives private individuals and organizations a critical role in water quality oversight and enforcement when regulators fail to act.
- The Act's citizen suit provision allows anyone who could be adversely affected by an alleged violation of the CWA to file a lawsuit in federal district court against the responsible entity.
  - In the SSO context, citizen enforcement can address SSOs that reach waters of the United States and NPDES permit violations.
  - Violations of the Statewide Permit are not directly enforceable under the CWA.
- A citizen plaintiff must
  - Provide at least 60 days of notice of the intent to file suit (NOI) to allow time for the alleged violator to bring itself into compliance or for state or federal regulators to take appropriate enforcement action;
  - Demonstrate standing to bring the action; and
  - Keep government officials apprised of citizen enforcement activities by providing them with the NOI, a copy of the complaint, and a copy of a proposed settlement agreement / consent decree.
- Diligent prosecution of the same violation by a state or federal regulatory agency will bar a citizen suit. This includes:
  - A lawsuit by a regulatory agency filed before the citizen suit; or
  - An administrative penalty action
    - Initiated before the NOI, if the citizen files suit before the 120 th day after providing notice; or
    - Initiated before the citizen suit is filed, if the citizen files suit 120 or more days after providing notice.
- In court, citizen plaintiffs can seek various forms of relief including declaratory relief, injunctive relief, and civil penalties. Other forms of monetary relief are available if the parties enter into a settlement agreement.
- Courts will generally award citizen plaintiffs their reasonable attorneys' fees and costs if they obtain either a favorable judgment on the merits of the case or a judicially enforceable settlement agreement that achieves an important part of what they sought in the lawsuit.
  - Instead of seeking fees in court, settling plaintiffs often negotiate for the inclusion of payments identified as attorneys' fees and costs in settlement agreements.
- State or federal regulators can intervene in citizen suits or file their own lawsuits. To conserve judicial resources and avoid inconsistent outcomes, courts can consolidate concurrent citizen and regulator lawsuits.



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# CHAPTER 5 — Overview of citizen enforcement activity

We analyzed legal documents, including notices of intent to sue (NOIs), complaints, settlement agreements, and court orders to characterize SSO-related citizen enforcement activity. This chapter outlines the primary paths and outcomes of the citizen enforcement actions we identified between 1996 and mid-2015. It describes the universe of collection systems and collection system agencies targeted for citizen enforcement as well as the citizen plaintiffs engaged in enforcement activity. Finally, it summarizes SSO-related citizen litigation.

## A. Data and methods used to characterize citizen enforcement activity

### 1. Legal documents

Legal documents related to citizen enforcement actions—including notices of intent to sue (NOIs) , complaints, settlement agreements, and court orders—were collected from several sources, summarized in **Table 7** and described more fully below.

**Table 7. Sources and types of legal data analyzed for this report.**

| Sources of legal data | NOIs | Case dockets | Complaints | Settlement agreements | Court orders | Coverage notes |
|---|---|---|---|---|---|---|
| Bloomberg Law Litigation & Dockets Database | Many | All | Many | Many | Many | Patchy document access back to mid-1990s, good access for recent years (post 2004) |
| State Water Resources Control Board, Office of Enforcement | Some | - | Some | Some | - | 2009 to present (likely incomplete coverage) |
| Parties' websites and attorneys | Some | - | Some | Some | Some | - California River Watch[443]<br>- San Francisco Baykeeper [444]<br>- City of Los Angeles[445] |
| San Francisco Bay Regional Water Quality Control Board | A few | - | - | - | - | A few NOIs dated between 2009 and 2015 |
| San Diego Regional Water Quality Control Board | Some listed | - | - | - | - | List (no documents) of citizen NOIs received from June 2014 to Feb. 2015 |
| US EPA, Region 9 | Some listed | - | Some listed | Some listed | - | List (no documents) of citizen suit documents received from Oct. 2012 to Feb. 2015 |

Most documents were derived from the Bloomberg Law Litigation and Dockets database.[446] Potentially relevant cases were identified by using variations on the following search terms:"sewer," "sewage," "SSO," "sanitary," "1365" (the section number of the CWA's citizen suit provision), and the names of known citizen plaintiff groups. The Bloomberg database contained docket information for lawsuits beginning in the mid-1990s and provided direct access to scanned or fully digital copies of many documents related to more recent lawsuits (generally post 2004), including complaints (sometimes with NOIs attached as exhibits), proposed and final settlement agreements or consent decrees, and court orders.



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Parties' websites were another source of information and primary documents, especially California River Watch's website, which tracks the group's active and resolved cases.[447]

Queries made to the State Board, all nine Regional Boards, and EPA Region 9 produced some additional information that we used to check for, and in some cases fill, gaps. In particular, the State Board 's Office of Enforcement has been tracking citizen NOIs received and forwarded from other parts of the State Board since 2009 and was able to provide us with these, as well as some related complaintsand settlement agreements. Additionally, we received NOIs or lists of NOIs from staff attorneys for two Regional Boards, and EPA Region 9 Office of Regional Counsel[448] provided lists of recent NOIs received.

Legal documents and case dockets were reviewed and information about parties, filings, dates, settlement terms, and other data were summarized. We attempted to analyze documents at a similar level of depth, but our actual level of success varied. Challenges included large variations in document length and the level of included detail, differences in the usage of descriptive terminology, and differences in document format and reproduction quality.

### 2. Stakeholder interviews

Based on our initial research and suggestions from other stakeholders, we contacted a variety of stakeholders, summarized in **Table 8**, to learn about their experiences with and views of SSO -related citizen enforcement. As the table shows, some stakeholders did not respond to our inquiries.

**Table 8. Stakeholders interviewed.** The number of individual stakeholders (and, in parentheses, the number of distinct groups or subgroups they represent) contacted for an interview, the number that responded, and the number actually interviewed or that otherwise provided information. Note that, in some cases, more individuals associated with a particular office or agency were interviewed or provided information than were initially contacted.

| Stakeholder category | Number of individuals (and distinct groups) contacted | Number of individuals (and distinct groups) responding | Number of individuals (and distinct groups) interviewed / providing information |
|---|---|---|---|
| Citizen organization | 7 (5) | 3 (2) | 3 (2) |
| Citizen organization outside counsel | 8 (4) | 7 (4) | 5 (4) |
| Collection system agency | 5 (5) | 4 (4) | 7 (4) |
| Collection system agency outside counsel | 6 (4) | 4 (3) | 4 (3) |
| Collection system agency consultant | 2 (2) | 2 (2) | 2 (2) |
| Collection system agency industry association | 4 (2) | 4 (2) | 4 (2) |
| EPA | 3 (2) | 3 (2) | 3 (2) |
| State and Regional Boards | 4 (4) | 4 (4) | 4 (4) |
| **Total** | **39 (28)** | **31 (23)** | **32 (23)** |

We used semi-structured interviews designed to touch on key topics of interest. Therefore, the nature and path of the discussions varied according to each stakeholder's level and type of knowledge and personal experience. Discussions were broadly focused on the interviewee's experiences with, knowledge of, and perceptions of the following issues:

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- SSO regulation
  - Changes in national and California regulation over time
  - Differences between regulation in California and other states
  - Effects of regulation on collection system management

- SSOs and collection system management
  - Effective collection system management
  - Trends in collection system management, nationally, statewide, and regionally
  - Metrics useful for gauging collection system performance
  - Trends in collection system performance metrics
  - Methods for minimizing SSOs
  - The feasibility of achieving zero SSOs
  - Collection system and/or regional characteristics that influence performance

- SSO-related citizen enforcement:
  - Citizen suits and citizen enforcement, both in general and in the context of SSOs
  - Trends in the type and intensity of citizen enforcement activity over time
  - Citizen enforcement goals
  - The citizen enforcement target selection process
  - Different paths and outcomes for citizen enforcement action
  - Communications between citizens and targeted collection system agencies before, during, and after citizen enforcement
  - Pros and cons of various forms of settlements
  - The settlement process and important settlement terms
  - Settlement compliance monitoring
  - Impacts of citizen enforcement on
    - Collection system management (operation, maintenance, planning, reporting, SSO response, etc.), infrastructure, finances, performance metrics
    - Water quality
  - Costs associated with citizen enforcement, including
    - Parties' citizen enforcement related costs
    - The costs of complying with settlement agreements, distinct from costs related to fulfilling other obligations and costs related to actions taken on collection agency's own initiative
  - Examples of especially effective or ineffective citizen enforcement actions
  - Role of attorneys' fees in citizen enforcement

- The interaction of government and citizen enforcement
  - Differences between government and citizen enforcement goals, actions, and outcomes
  - Government tracking of and/or response to citizen enforcement
  - Modes and extent of communication between citizens and regulators
  - Whether/how/to what extent regulators rely on citizen enforcement to bring about compliance in the regulated community
  - Whether/how/to what extent citizen and government enforcement overlap

- What would constitute, the potential for, and whether/how/to what extent citizen enforcement has been abusive or problematic?

- Suggestions for institutional, policy, legal, and/or permitting changes to improve SSO regulation, compliance, and enforcement

- Potential data sources



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Although we do not analyze stakeholder views in a systematic way, these discussions were helpful in many ways. For example, they helped us better understand different stakeholder viewpoints about SSO-related citizen enforcement, identify ambiguities and points of contention in state and national SSO regulation, find additional sources of data to analyze, and identify other potential methods of analysis.

When we refer to stakeholder views gathered through interviews, we do not attribute them to specific individuals or organizations. Instead we identify the applicable stakeholder category as follows:

1. Citizen-aligned interests — Includes stakeholders from citizen organizations and their outside counsel.
2. Collection-system-aligned interests — Includes stakeholders from collection system agencies, their outside counsel, their engineering consultants, and their industry associations.
3. Regulators — Includes stakeholders from national EPA offices, EPA Region 9 offices, State Board offices, and Regional Board offices.

## B. Results

### 1. Primary paths and outcomes of citizen enforcement actions

Although the CWA makes citizen-initiated litigation possible (see **Chapter 4**), every citizen enforcement action does not proceed along a neat path from NOI, to lawsuit, to judicial decision. In fact, our research shows that court determinations of liability and remedies have been rare in California SSO enforcement cases. Settlements are the norm, and a non-trivial subset of citizen actions proceeded directly to the settlement stage without involving the court system.

**Figure 5** provides an overview of the potential paths and outcomes of citizen enforcement under the CWA. Our research suggests that SSO-related citizen enforcement actions can be divided into three main categories:

- NOIs without apparent follow-on legal action (we refer to these as "outstanding NOIs")
- Pre-litigation settlements, entered into without engaging in litigation
- Lawsuits ending in settlements

Our research identified 90 citizen enforcement actions related to SSOs initiated from 1996 through mid-2015. These included 61 lawsuits filed by citizen plaintiffs, 2 additional lawsuits filed by regulators in which citizen plaintiffs intervened, 20 pre-litigation settlements, and 7 outstanding NOIs. After describe these categories, we analyze the actions in more detail below.

#### *a. NOI without further legal action (outstanding NOI)*

In some cases, citizens gave notice of their intent to sue but had not pursued further legal action by June 2015. We call the result is an "outstanding NOI" (see **Figure 5**). There are many reasons an NOI might be the end of the process. Information received after the NOI was sent might show that further action would be redundant or unnecessary. For example, the targeted agency might demonstrate to the citizen's satisfaction that it has made necessary infrastructure or institutional changes to address the problem. Or, the potential plaintiff might become aware of recent, ongoing, or new government enforcement action or action by another citizen that adequately addresses the same alleged violations. Alternatively, changing resource constraints or the development of more urgent citizen priorities might influence the decision not to file a suit or pursue pre-litigation settlement. Some of the NOIs we identified were old, but some were very recent.

We identified 7 outstanding NOIs. Outstanding NOIs are not documented in the Bloomberg law Litigation and Dockets Database. We attempted to identify outstanding NOIs through other means, such as those listed in **Table 7**, but our record is almost certainly incomplete (see **Chapter 5.A.1**, above).



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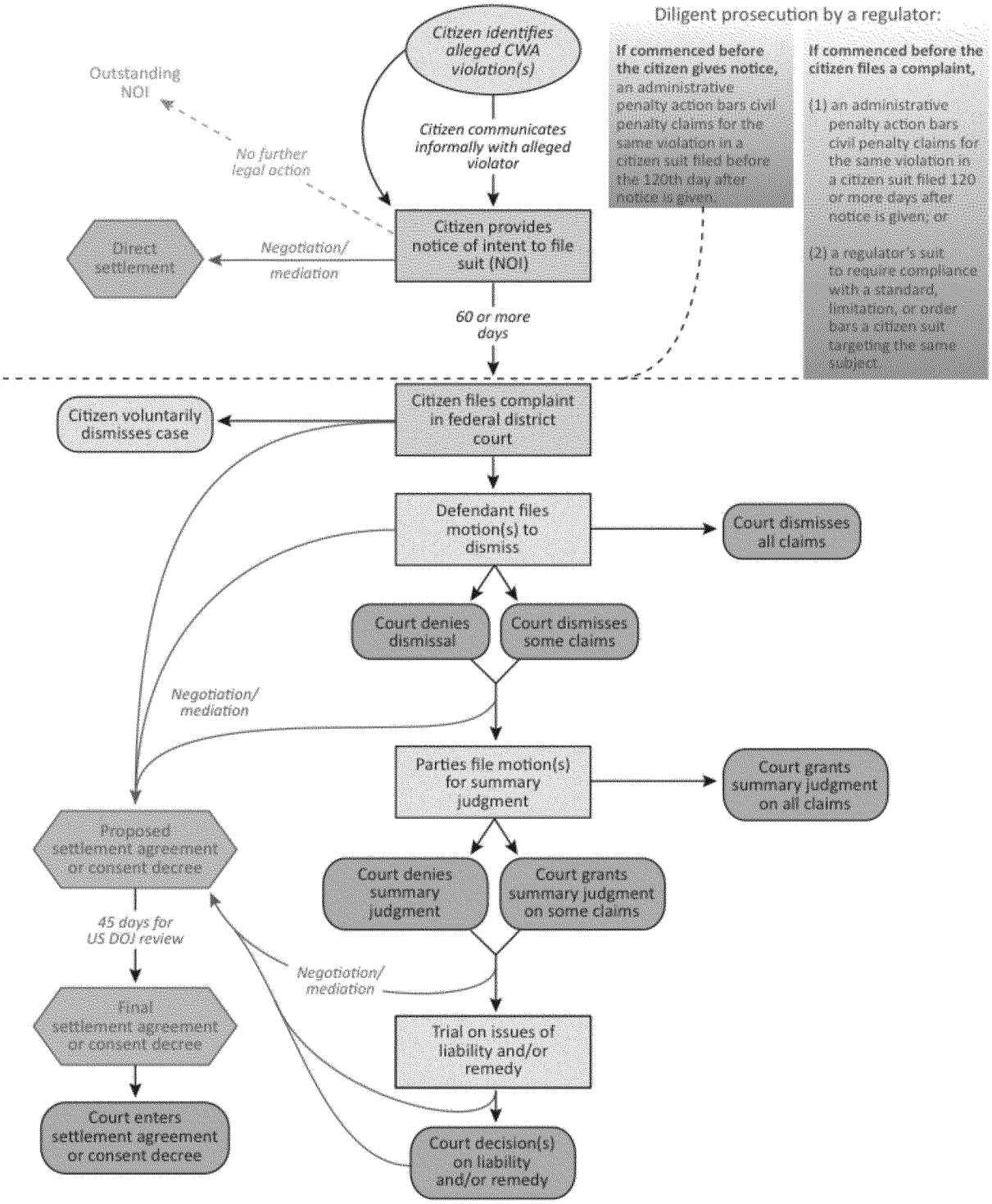
**Figure 5. Primary paths and outcomes possible for SSO-related citizen enforcement actions.** Citizen enforcement actions can follow a variety of pathways. We identify several crucial pathway-determinative points here.[449]



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### *b. Pre-litigation settlement*

Citizen sometimes attempt to negotiate with a targeted agency before filing a lawsuit (see **Chapter 4.A.1**). When negotiations resolve the conflict at this early stage, we describe the result as "pre-litigation settlement" (see **Figure 5**). A settlement agreement reached in the absence of a lawsuit is enforceable in state court as a private contract between the parties (see **Box 2** in **Chapter 4**).

We identified 20 pre-litigation settlements. Like outstanding NOIs, pre-litigation settlements are not documented in the Bloomberg law Litigation and Dockets Database. California River Watch 's website was our primary source of information for pre-litigation settlements, so our record is likely incomplete (see **Part 5.A.1** of this chapter, above).

### *c. Lawsuit ending in settlement*

CWA lawsuits can differ widely in length, intensity, complexity, and result (see **Figure 5**).

Some citizen suits related to SSOs progress little beyond the complaint stage. [450] The parties might come to rapid agreement on a way to move forward, resulting in a settlement agreement and/or a consent decree. On the other end of the spectrum, a citizen plaintiff might voluntarily dismiss its own suit, with or without a court order,[451] or the district court might grant an early motion by the defendant to dismiss all claims.[452] Summary judgment in favor of the plaintiff could also occur early on if the defendant's own SSO reports clearly back up the plaintiff's allegations.[453] However, some SSO-related citizen suits involve discovery, substantial motion practice, and (rarely) a trial (see **Part B.5** of this Chapter, below). At any point in the lawsuit, the parties can negotiate a complete or partial settlement of the citizen plaintiff 's claims.

We identified 61 lawsuits filed by citizen plaintiffs and 2 additional lawsuits filed by regulators in which citizen plaintiffs intervened.

## 2. Collection systems and collection system agencies targeted for citizen enforcement

The 90 citizen enforcement actions related to SSOs we identified were initiated against 88 identifiable collection systems managed by 83 different collection system agencies from 1996 through mid- 2015. **Table 9** lists the targeted collection system agencies and the types of citizen enforcement action each has experienced.



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**Table 9. Collection system agencies targeted for SSO-related citizen enforcement, 1996–June 2015.** The following is a list of California municipalities and districts we identified as experiencing citizen enforcement action, the type(s) of action(s) they experienced, and the citizen plaintiff(s) involved. Agencies for which more than one collection system was targeted are marked with an asterisk (*). Gray shading indicates multiple actions. (Abbreviation key below)

| # | Collection system agency | # Lawsuits as defendant | # Pre-litigation settlements | # NOIs outstanding | Total actions | Citizen plaintiff(s) |
|---|---|---|---|---|---|---|
| 1 | City of Alameda | 1 | | | 1 | SFBk + OCEF |
| 2 | City of Albany | 1 | | | 1 | SFBk + OCEF |
| 3 | City of American Canyon | 1 | | | 1 | CRW |
| 4 | City of Antioch | | 1 | | 1 | CRW |
| 5 | City of Arcata | | 1 | | 1 | CRW |
| 6 | City of Beaumont | | | 1 | 1 | CRW |
| 7 | City of Benicia | | 1 | | 1 | CRW |
| 8 | City of Berkeley | 1 | | | 1 | SFBk + OCEF |
| 9 | Blue Lake Wastewater Treatment Facility | | | 1 | 1 | CRW |
| 10 | Bodega Bay Public Utility District | | 1 | | 1 | CRW |
| 11 | Brooktrails Township CSD | | 1 | | 1 | CRW |
| 12 | City of Burlingame | 1 | | | 1 | SFBk |
| 13 | Burlingame Hills SMD | 1 | | | 1 | SFBk |
| 14 | City of Carlsbad | 1 | | | 1 | CRW |
| 15 | Central Contra Costa Sanitary District | | 1 | | 1 | CRW |
| 16 | Coachella Valley Water District | | 1 | | 1 | CRW |
| 17 | Covelo Community Services District | 1 | | | 1 | CRW |
| 18 | City of Crescent City | 1 | | | 1 | CRW |
| 19 | Cupertino Sanitary District | | 1 | | 1 | CRW |
| 20 | Delta Diablo Sanitation District | | 1 | | 1 | CRW |
| 21 | East Bay Municipal Utility District | 1 | | | 1 | SFBk + OCEF |
| 22 | Eastern Municipal Water District* | 1 | | | 1 | CRW |
| 23 | El Dorado Irrigation District* | 1 | | | 1 | CSPA |
| 24 | City of Emeryville | 1 | | | 1 | SFBk + OCEF |
| 25 | City of Eureka | 1 | | | 1 | CRW |
| 26 | City of Fort Bragg, MID No. 1 | 1 | | | 1 | CRW |
| 27 | City of Fortuna | 1 | | | 1 | CRW |
| 28 | City of Garden Grove / Garden Grove SD | 1 | | | 1 | OCCk |
| 29 | City of Grass Valley | | 1 | | 1 | CRW |
| 30 | City of Healdsburg | 1 | 1 | | 2 | CRW |
| 31 | Town of Hillsborough | 1 | | | 1 | SFBk |
| 32 | City of Laguna Beach | 1 | | | 1 | CRW |
| 33 | Lake County Sanitation District* | 1 | | | 1 | CRW |
| 34 | Leucadia Wastewater District | | 1 | | 1 | CRW |
| 35 | City of Los Angeles* | 1 | | | 1 | LAWk |
| 36 | SD No. 1 of Marin County (Ross Valley) | 1 | 1 (CRW) | | 2 | Page; CRW |
| 37 | SD No. 5 of Marin County | | 1 | | 1 | CRW |

| # | Collection system agency | # Lawsuits as defendant | # Pre-litigation settlements | # NOIs outstanding | Total actions | Citizen plaintiff(s) |
|---|---|---|---|---|---|---|
| 38 | City of Millbrae | 1 | | | 1 | SFBk |
| 39 | City of Modesto | 1 | | | 1 | CSPA |
| 40 | Novato Sanitary District | | 1 | | 1 | CRW |
| 41 | City of Oakland | 2 | | | 2 | MHA; SFBk + OCEF |
| 42 | City of Pacific Grove | 1 | | | 1 | ERF |
| 43 | City of Pacifica | 1 | | | 1 | OCEF |
| 44 | City of Petaluma | | 1 | | 1 | CRW |
| 45 | City of Piedmont | 1 | | | 1 | SFBk + OCEF |
| 46 | City of Red Bluff | | 1 | | 1 | CRW |
| 47 | City of Redding | 1 | | | 1 | CSPA |
| 48 | City of Richmond | 1 | | | 1 | SFBk + WCTC |
| 49 | City of Rohnert Park | | 1 | | 1 | CRW |
| 50 | City of Sacramento | 1 | | | 1 | CSPA |
| 51 | Sacramento Area Sewer District | 1 | | | 1 | CSPA |
| 52 | Salton Community Services District * | | 1 | | 1 | CRW |
| 53 | City of San Bruno | 1 | | | 1 | SFBk |
| 54 | City of San Carlos | 1 | | | 1 | SFBk |
| 55 | City of San Diego | 1 | | | 1 | SDCk + SrF |
| 56 | City of San Jose | 2 | | | 2 | CRW; SFBk |
| 57 | Santa Ana Watershed Project Authority | | | 1 | 1 | CRW |
| 58 | City of Santa Barbara | 1 | | | 1 | SBCk |
| 59 | City of Santa Clara | 1 | | | 1 | CRW |
| 60 | County SnD No. 2-3 of Santa Clara | 1 | | | 1 | CRW |
| 61 | City of Santa Rosa | 2 | | | 2 | CRW x 2 |
| 62 | City of Sausalito | 1 | | | 1 | CRW |
| 63 | Sausalito-Marin City Sanitary District | 1 | | | 1 | CRW |
| 64 | SCWA: Occidental County SnD | 1 | | 1 (Loades) | 2 | CRW; Loades |
| 65 | SCWA: Russian River County SnD | 1 | | | 1 | CRW |
| 66 | SCWA: Sonoma Valley County SnD | 3 | | | 3 | CRW x 3 |
| 67 | City of Sebastopol | | | 1 | 1 | CRW |
| 68 | City of South San Francisco | 1 | | | 1 | SFBk |
| 69 | Stege Sanitary District | 1 | | | 1 | SFBk + OCEF |
| 70 | City of Stockton | 2 | | 1 (CRW) | 3 | CSPA; CfSD; CRW |
| 71 | Tuolomne Utilities District | 1 | | | 1 | CSPA |
| 72 | U.S. Marine Corps Base Camp Pend leton | 2 | | | 2 | SDCK+SrF+ACA+DAP; SDCk |
| 73 | City of Ukiah | 2 | | | 2 | CRW x 2 |
| 74 | Ukiah Valley Sanitation District | 1 | | | 1 | CRW |
| 75 | Vallejo Sanitation & Flood Control District | 1 | | | 1 | SFBk |
| 76 | City of San Buenaventura (Ventura) | 1 | | | 1 | WF/VCk |
| 77 | West Bay Sanitary District | 1 | | | 1 | SFBk |

| # | Collection system agency | # Lawsuits as defendant | # Pre-litigation settlements | # NOIs outstanding | Total actions | Citizen plaintiff(s) |
|---|---|---|---|---|---|---|
| **78** | West County Wastewater District | 1 | | | **1** | SFBk + WCTC |
| **79** | West Valley Sanitation District | 1 | | | **1** | CRW |
| **80** | City of Whittier | | | 1 | **1** | CRW |
| **81** | City of Willits | 2 | | | **2** | CRW x 2 |
| **82** | Town of Windsor | | 1 | | **1** | CRW |
| **83** | City of Yreka | 1 | | | **1** | CRW |

**Acronyms used in agency names:**

CSD Community Services District
MID Municipal Improvement District
SCWA Sonoma County Water Agency
SD Sanitary District
SnD Sanitation District
SMD Sewer Maintenance District

**Acronyms for citizen plaintiff names**

ACA American Canoe Association
CfSD Coalition for a Sustainable Delta
CRW California River Watch *(formerly Northern CRW)*
CSPA California Sportfishing Protection Alliance
DAP Divers Against Polluters
ERF Ecological Rights Foundation
LAWk LA Waterkeeper *(formerly Santa Monica Bk)*
Loades John and Pauline Loades
MHA Millsmont Homeowners Association
OCCk Orange County Coastkeeper
OCEF Our Children's Earth Foundation
Page Garril Page
SBCk Santa Barbara Channelkeeper
SDCk San Diego Coastkeeper *(formerly San Diego Bk)*
SFBk San Francisco Baykeeper
SrF Surfrider Foundation
WCTC West County Toxics Coalition
WF/VCk Wishtoyo Foundation / Ventura Coastkeeper

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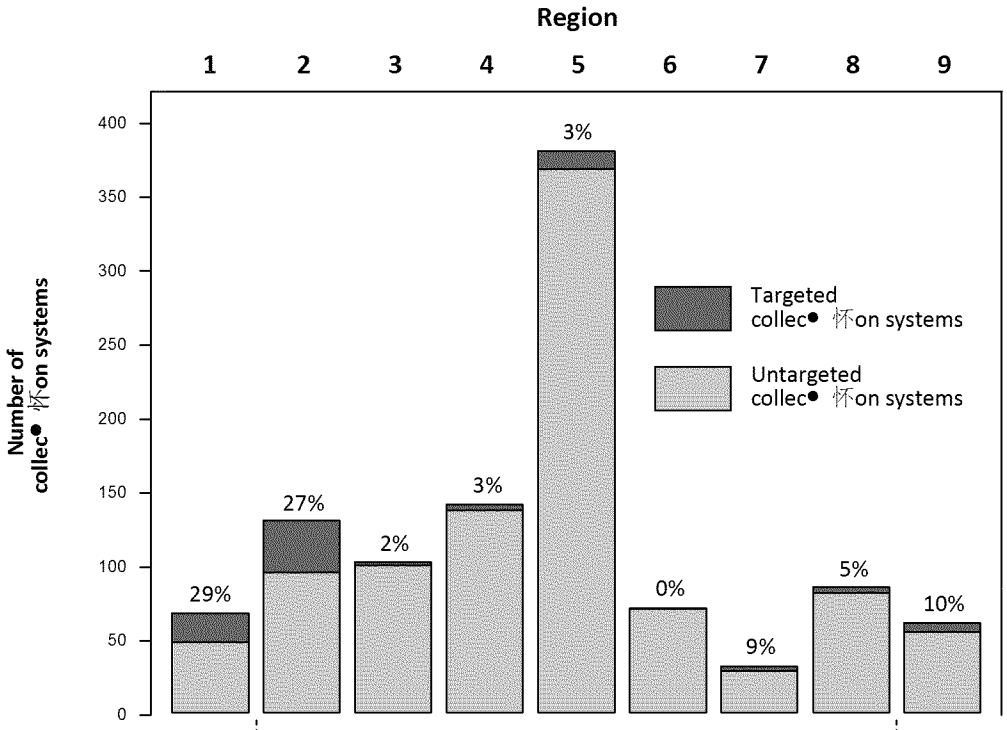
Citizen enforcement activity has varied substantially from region to region over the last 19 years (**Figure 6**). Most citizen actions addressed collection systems in the North Coast and San Francisco Bay Regions (Regions 1 and 2). Based on our research, Region 6 has not experienced SSO-related citizen enforcement. Some actions involved multiple collection systems or agencies, and some agencies (13%) were targeted multiple times (see **Table 9**). In two instances, the complaint did not clearly identify particular collection systems as defendants.[454] **Figure 6** represents these with a question mark between Regions 1 and 2 for "Targeted agencies."[455]

**Figure 6. Some regions have been more heavily targeted than others for citizen enforcement**. The number of total collection systems enrolled in the Statewide Permit as of mid-June 2015 is shown for each Regional Board. The percentage of collection systems targeted, the number of targeted agencies, and the number of citizen enforcement actions in each region are also shown. Note that a single collection system agency may manage more than one collection system. Where an agency (and a related enforcement action) straddles two regions, the numbers of targeted agencies and enforcement actions are shown between the two regions' columns in parentheses. Where the defendant collection systems could not be identified, the parentheses contain a question mark.




| | 1 | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of targeted / untargeted collec● 怀on systems | 20/69 | | 36/133 | 2/104 | 4/144 | 13/389 | 0/72 | 3/32 | 4/87 | | 6/62 |
| Number of targeted agencies | 20 | (?) | 36 | 2 | 3 | 11 | 0 | 2 | 3 | (1) | 5 |
| Number of enforcement ac● 怀ons | 24 | (2) | 34 | 2 | 3 | 13 | 0 | 2 | 3 | (1) | 6 |



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### 3. Types of claims pursued in citizen enforcement actions

In addition to SSOs, almost three-quarters of citizen enforcement actions addressed other CWA topics—like treated wastewater discharge violations, effluent limitation violations, or MS4 permit violations (**Table 10**). More than 40% included other POTW claims (related to an associated wastewater treatment facility), 21% included MS4-permit-related claims, and 7% included both other POTW and MS4 claims while just 26% addressed SSOs alone. Several actions included Endangered Species Act (ESA) or Resources Conservation and Recovery Act (RCRA) claims alongside CWA claims.

**Table 10. CWA topics addressed by the citizen enforcement actions analyzed in this report.** All cases included primary SSO-related claims (teal shading), secondary SSO-related claims (green shading) or, where documents were not available to confirm this, are thought likely to have included primary or secondary SSO-related claims (yellow shading). Primary claims directly alleged SSOs as CWA violations, while secondary claims mentioned SSOs in allegations of MS4 permit violations. Many cases also included other POTW claims, MS4-related claims, or both.

| Nature of SSO-related claims | | | Number of actions including claims | | | | |
|---|---|---|---|---|---|---|---|
| Primary SSO claims | | | | | | | |
| Surface SSOs | Exfiltration | SSOs to an MS4 | SSO-related claims only | Other POTW claims | Other POTW claims + MS4-related claims | MS4-related claims | Total # of actions |
| ● | | | 4 | 12 | 1 | - | **17** |
| ● | ● | | 19 | 24 | - | - | **43** |
| ● | ● | ● | - | - | - | 2 | **2** |
| ● | | ● | - | - | 5 | 15 | **20** |
| **Secondary SSO claims** *SSOs mentioned as illegal non-stormwater discharges to an MS4* | | | - | - | - | 2 | **2** |
| **Unclear** [456] | | | ? | ? | ? | ? | **6** |
| | | **Totals** | 23+(?) | 37+(?) | 6+(?) | 19+(?) | **90** |

### 4. Primary citizen plaintiff groups and differences in their enforcement activity

Although 18 different citizen plaintiffs initiated or were party to citizen enforcement actions (see **Table 9**, above), 3 organizations were the primary or sole plaintiff in 77 out of 90 (86%) of actions. The three organizations are California River Watch, San Francisco Baykeeper, and California Sportfishing Protection Alliance.

California River Watch filed 31 SSO-related lawsuits resulting in at least 21 settlements. The group also entered into 20 pre-litigation settlements, and sent at least 6 NOIs that had not been further pursued as of the end of June 2015. In total, these actions addressed 50 collection system agencies and 53 total collection systems. In early 2013, the group changed its name from Northern California River Watch to California River Watch, reflecting a new statewide focus. Prior to 2014, all of River Watch's SSO-related actions took place in the North Coast, San Francisco Bay, and northern Central Valley Regions (see **Figure 7**). However, beginning in 2014 the group began pursuing SSO-related actions in southern California as well. Recent actions involve agencies in the Colorado River, Santa Ana, and San Diego Regions. As of June 2015, California River Watch had 4 ongoing SSO-related lawsuits and 3 recent outstanding NOIs.

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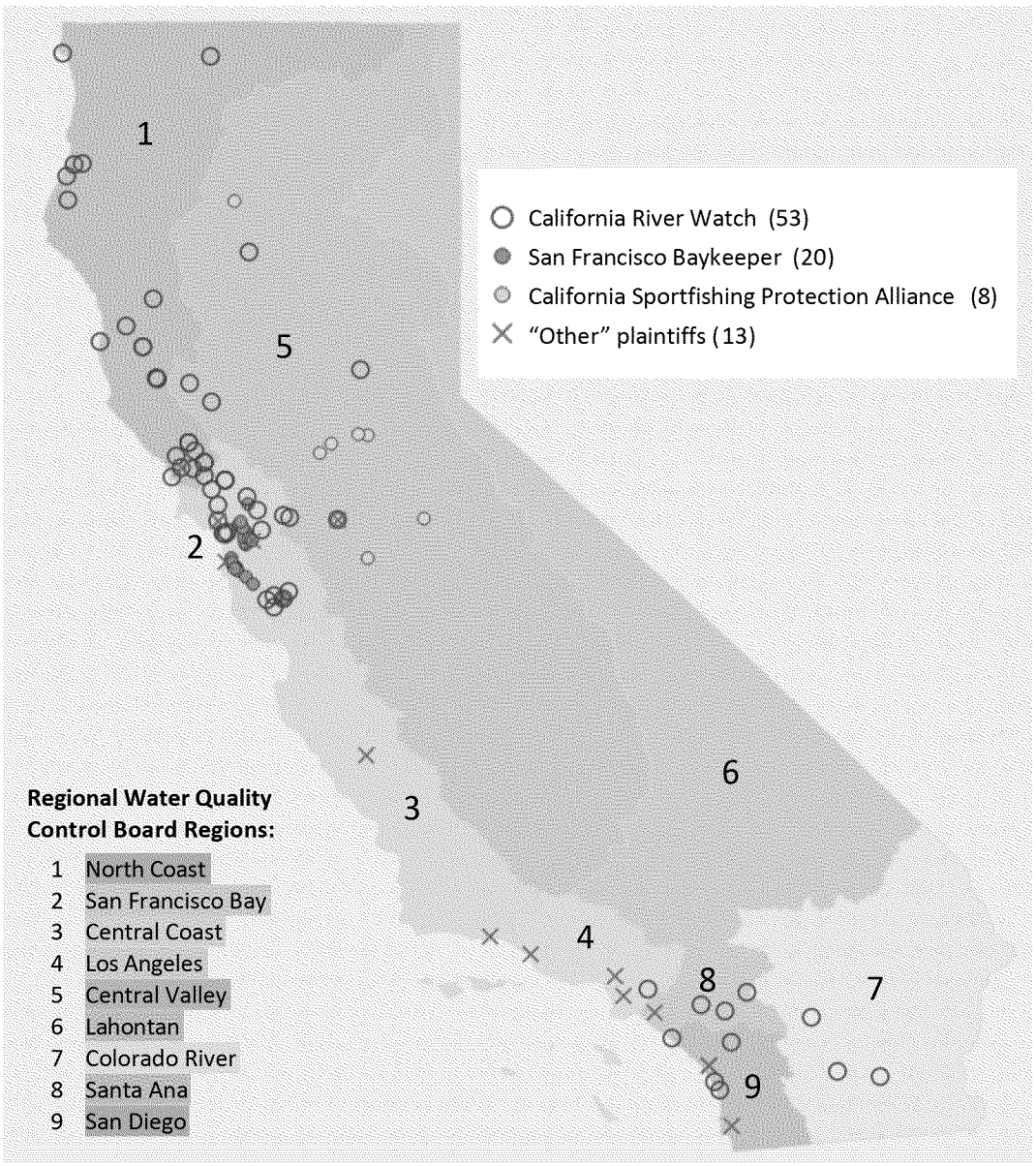
San Francisco Baykeeper filed 11 SSO-related lawsuits (1 with another citizen group, West County Toxics Coalition) and intervened (with Our Children's Earth Foundation) in 2 additional (and subsequently consolidated) lawsuits by state and federal regulators. These actions addressed a total of 20 collection system agencies, each managing a single collection system. In total, these lawsuits resulted in 11 different settlements. Baykeeper had 1 ongoing SSO-related lawsuit as of June 2015. All the organization's actions have taken place in the San Francisco Bay Region (Region 2) (see **Figure 7**).

California Sportfishing Protection Alliance filed 7 SSO-related lawsuits, all of which resulted in settlements. These actions addressed 7 collection system agencies and 8 total collection systems. All 7 lawsuits were against collection systems in the Central Valley Region (Region 5) (see **Figure 7**).

**Figure 7. The three major plaintiff groups targeted collection systems in different regions.** Locations of collection systems targeted by the four plaintiff groups between 1996 and June 2015 are shown.



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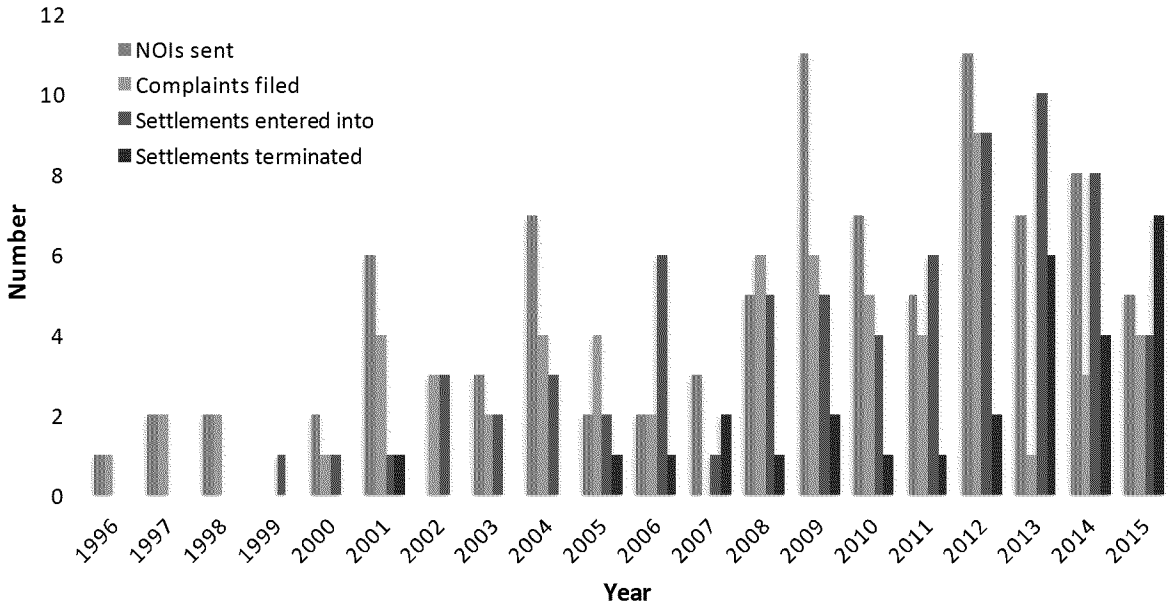
Other citizen plaintiffs ("Other" plaintiffs) filed 12 lawsuits—which resulted in 11 settlements—and sent at least 1 NOI that had not been furth er pursued as of the end of June 2015. These actions addressed 12 collection system agencies and 13 collection systems. Two of the lawsuits were consolidated with a later-filed regulator lawsuit prior to settlement amongst all parties. One lawsuit was stayed after the defendant filed for bankruptcy.[457] San Diego Coastkeeper (formerly San Diego Baykeeper) filed 3 suits with or without co-plaintiffs.[458] Nine other organizations and individuals each filed a single SSO-related suit.[459] Additionally, we identified one outstanding NOI sent by "Other" plaintiffs.[460] Most "Other" plaintiffs' actions were directed against collection systems in coastal areas of Central and Southern California (see **Figure 7**).

As stakeholder interviews (see **Part A.2** of this chapter) and previous synopses[461] initially suggested, there has been increased citizen enforcement activity related to SSOs in recent years (see **Figures 8 and 9**). More actions have been initiated during the 8 years since SSO-Database reporting began in 2007 than during the prior 11 years. Actions increased in frequency in 2001, and again in 2008. The number of NOIs sent to collection system agencies peaked in 2009 and again in 2012. The number of complaints filed to initiate lawsuits also peaked in 2012. Settlements peaked the following year, in 2013.

**Figure 8. Overall citizen enforcement activity trends.** The number of SSO-related NOIs sent, complaints filed, settlements entered into, and settlements terminated each year between 1996 and June 2015. Settlements terminated when their substantive requirements were fulfilled or when the settlement end date arrived, as designated by the parties.




Different citizen plaintiffs have not been uniformly active over the past 19 years (see **Figure 9**).

California River Watch has been the most active organization over the entire period, initiating citizen enforcement actions almost continuously since 1997. Between mid-2008 and early 2012, River Watch resolved NOI allegations via pre-litigation settlement only, without filing complaints. There appears to have been an uptick in River Watch NOIs, complaints, and settlements since 2012. River Watch is engaged in multiple ongoing SSO enforcement actions.

San Francisco Baykeeper has shown 3 pulses of enforcement initiation activity. It filed the earliest SSO case we identified, in 1996, initiated a series of SSO -related actions from 2005 to 2010, and filed a final case in early 2015 that is ongoing. Due to its intervention in the government-initiated East Bay Municipal Utility



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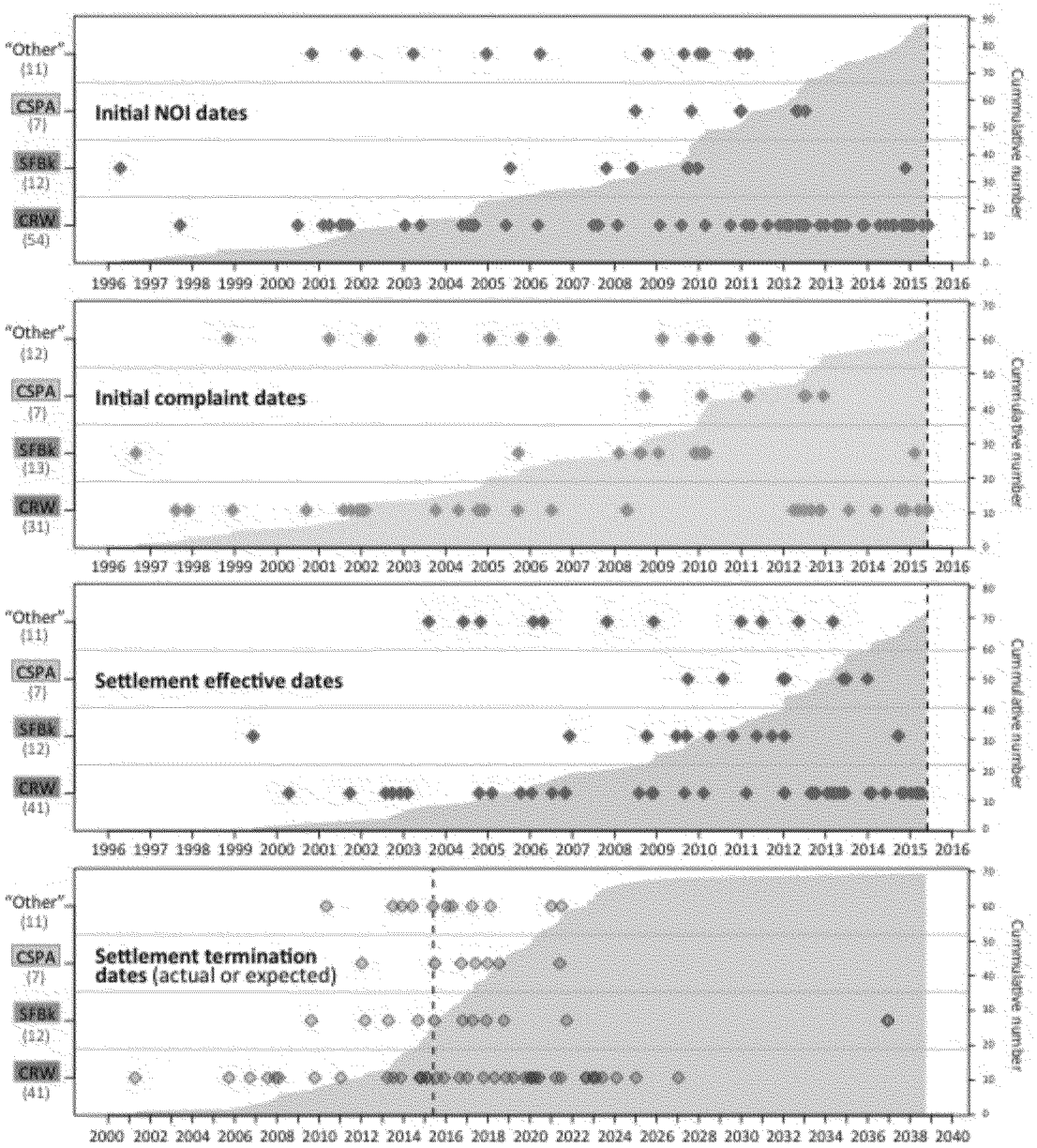
District and satellite collection systems consolidated cases, Baykeeper is party to the settlement agreement with the longest time horizon by almost 10 years.

California Sportfishing Protection Alliance's SSO enforcement activity was the most concentrated of the 3 main plaintiff groups. It filed all of its SSO-related lawsuits between 2008 and 2012 and completed the actions by 2014.

"Other" plaintiffs initiated SSO-related enforcement actions sporadically between 1998 and 2011 and completed their actions by 2013.

**Figure 9. Citizen enforcement activity trends, by plaintiff group.** Colored diamonds mark the timing of NOIs, complaints, and settlement effective and termination dates for each plaintiff or plaintiff group. Shading represents the cumulative number of each. The first 3 charts cover the same time frame, but the last covers an expanded time range to show future termination dates. The dashed line represents the same date on all 4 charts. Numbers of related actions are shown for each plaintiff or plaintiff group in parentheses. CRW = California River Watch; SFBk = San Francisco Baykeeper; CSPA = California Sportfishing Protection Alliance; "Other" = all other plaintiffs.



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## 5. Summary of citizen litigation related to SSOs

The 63 SSO-related lawsuits we identified varied, sometimes substantially, in the extent of judicial involvement in determination of the lawsuit 's outcome, complexity, and duration.

The court played a very small role in some suits but a larger role in others on a spectrum from little court involvement (the parties settled without the defendant filing a n answer to the complaint) to substantial court involvement (the court held a trial and/or decided the issue of liability, attorneys ' fees, etc.) (see **Table 11**). Defendants filed answers to the citizen's complaint in 36 of 53 completed cases and motions to dismiss in 13. One or both parties filed motions for summary judgment in 6 cases. Court decisions on liability were rare. No motion to dismiss was granted in its entirety, but the court granted partial or complete summary judgment in favor of the citizen plaintiff in 5 cases. Only one case included a trial, and that trial dealt solely with non-SSO issues.[462] In general the parties determined what attorneys' fees and costs the citizen plaintiff was entitled to via settlement.

**Table 11. Litigation summary.** Summary of actions by parties and the court in the 63 SSO-related lawsuits we identified with citizen plaintiffs or citizen plaintiff interveners.

| Action | By the parties | By the court |
|---|---|---|
| **Answer** | Filed in 36 cases | - |
| **Motion(s) to dismiss** | Filed in 13 cases | Order(s) on motion(s) to dismiss in 12 cases:<br>• 6 — Denied motion(s)<br>• 5 — Granted in part / denied in part motion(s)<br>• 1 — Accepted stipulated withdrawal of motion + stay |
| **Motion(s) for summary judgment** | Filed in 6 cases | Order(s) on motion(s) for summary judgment in 5 cases:<br>• 1 — Granted plaintiff's motion for summary judgment on the issue of liability<br>• 4 — Granted plaintiff's motion(s) for partial summary judgment on the issue of liability |
| **Determined liability** | - | Granted motion(s) for full or partial summary judgment in 5 cases ("<br>Entered judgment for plaintiff after bench trial in 1 case* |
| **Determined attorneys' fees and costs** | Wholly or partly determined via consent decree / settlement agreement in at least 48 cases | Wholly or partly determined by the court in at least 5 cases:<br>• 1 — District court and Court of Appeals each awarded reasonable fees and costs in an undetermined amount, then approved the amounts the parties ' stipulated to (in bench trial case *)<br>• 2 — Court granted fees and costs following partial summary judgment<br>• 1 — Court awarded fees and costs after entering judgment on liability in favor of the plaintiff, approving and incorporating the settlement agreement<br>• 1 — Settling parties agreed plaintiffs wer e prevailing parties for purpose of attorneys' fees and costs; 1 plaintiff submitted a fee application to court (others' fees likely determined in a separate settlement agreement) |
| **Settlement** | Reached in 53 cases[463]<br><br>*Not reached in 10 cases:*<br>• *5 active*<br>• *1 stayed*<br>• *2 voluntarily dismissed*<br>• *2 dismissed by the court* | Order on consent decree/settlement agreement in 40 cases<br><br>Possible order related to settlement agreement in 2 cases *(as suggested by dockets; documents not available to confirm)*<br><br>No order related to the settlement agreement in 11 cases[464]<br>• 9 — Cases dismissed voluntarily under Fed. R. Civ. P. 41(a)(1)(A) without court order on agreement<br>• 2 — Cases dismissed by the court after "having been advised that the parties have agreed to a settlement" |

* The bench trial addressed only non-SSO issues (SSO claims were dealt with in an earlier, partial settlement of the case).

The parties reached settlements in 53 cases (84% of lawsuits). Most lawsuits progressed from complaint to final settlement on SSO issues in less than 20 months (**Figure 10**). However, a few took more than 5 years to



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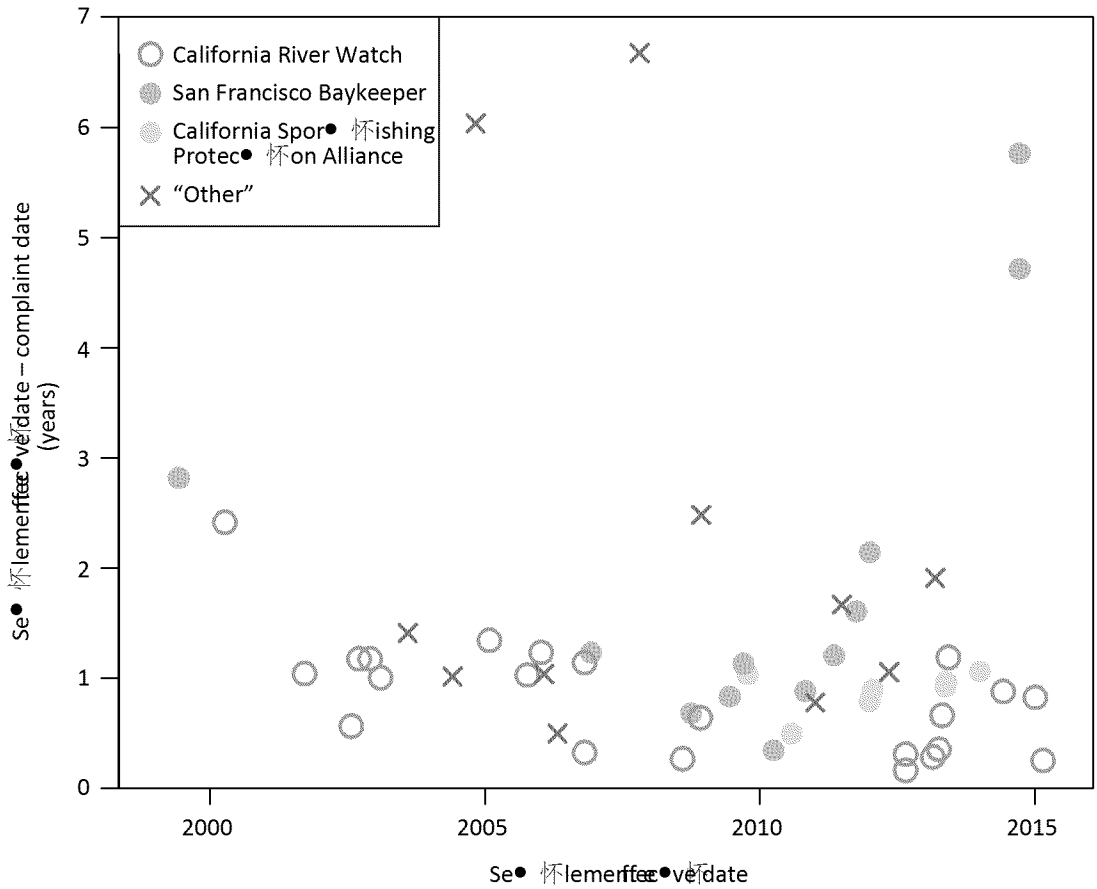
resolve. Longer and more involved lawsuits require more effort and resources on the part of all parties involved are and likely to be more expensive than shorter, simpler lawsuits.

**Figure 10. Lawsuit length** , in years). Most lawsuits proceeded from complaint to settlement in less than 2 years. A few lasted 3 to 4 times as long.




Of the 10 cases not settled by June 2015, 5 were actively ongoing, 1 was stayed,[465] 2 were voluntarily dismissed by the plaintiff, and 2 were dismissed by the court. Both voluntarily dismissed cases were followed closely by newly filed cases that appear to have corrected defects in the original filings. Similarly, both cases the court dismissed were specifically related to a third case that did proceed.

## C. An initial foray into understanding the impacts of citizen enforcement

In the coming chapters, we take a first stab at evaluating the effects of these citizen enforcement efforts on CWA and Statewide Permit compliance, collection system infrastructure and management, and water quality. We acknowledge that evaluation is challenging. We necessarily rely on proxy measures, and we recognize that there are many potentially confounding factors. Our data therefore do not support strong conclusions at this point. Nonetheless, we believe these results are interesting and potentially suggestive.

The next four chapters explore:

(1) The terms of settlement agreements (**Chapter 6**);
(2) The interaction of citizen and government enforcement (**Chapter 7**)
(3) Trends in the performance of targeted and untargeted collection systems (**Chapter 8**); and
(4) Post-enforcement changes in the performance of individual targeted collection systems (**Chapter 9**).



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**Chapter 5 summary:**

- We found evidence of 90 citizen enforcement actions related to SSOs from 1996 to June 2015.
- These actions were initiated against 88 different collection systems belonging to 83 different collection system agencies
- The actions included:
  - 61 lawsuits filed by citizen plaintiffs,
  - 2 additional lawsuits filed by regulators in which citizen plaintiffs intervened,
  - 20 pre-litigation settlement s (entered into without litigation), and
  - 7 outstanding NOIs (for which no further legal action was evident).
- Citizen enforcement activity varied from region to region, with the majority occurring in the North Coast and San Francisco Bay Regions (Regions 1 and 2) where more than a quarter of collection systems enrolled under the Statewide Permit have been targeted. From 2 to 10% of the systems in other regions have been targeted, except for the Lahontan Region (Region 6) where we found no evidence of SSO-related citizen enforcement.
- Almost three-quarters of citizen enforcement actions addressed other CWA claims in addition to SSOs.
- Out of 18 total citizen plaintiffs we identified, 3 organizations were involved in 86% of citizen enforcement actions:
  - California River Watch filed 31 lawsuits, entered into 20 pre-litigation settlement s, and sent 6 outstanding NOIs. These actions addressed 50 collection system agencies (and 53 different collection systems).
  - San Francisco Baykeeper filed 11 lawsuits as plaintiff and intervened in 2 government lawsuits (later consolidated). The lawsuits addressed 20 collection system agencies (and 20 different collection systems).
  - California Sportfishing Protection Alliance filed 7 lawsuits. The suits addressed 7 collection system agencies (and 8 different collection systems).
  - "Other" plaintiffs filed 12 lawsuits and sent 1 outstanding NOI. These actions addressed 12 collection system agencies (and 13 collection systems).
- Citizen enforcement activity has increased during the 8 years since reporting to the SSO database began in 2007.
- The court played a very small role in some of the 63 lawsuits we identified:
  - Collection system agency defendants filed motions to dismiss in 13 cases (granted, in part, in 5 cases).
  - One or both parties filed motions for summary judgment in 6 cases (all granted, in whole or in part, in favor of the plaintiff on the issue of liability).
  - No trials were held on SSO claims.
  - As of June 2015, the parties had reached settlements in 53 cases, 5 were actively ongoing, 1 was stayed, 2 were voluntarily dismissed by the plaintiff, and 2 were dismissed by the court. All the dismissed cases were related to a case that did proceed.
  - The court had a hand in determining attorneys' fees and costs in at least 5 cases, but most were dealt with in settlements.
- The next four chapters explore several potential indicators of SSO-related citizen enforcement's impacts.

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# CHAPTER 6 — Citizen settlement agreements

**Chapter 5** explained that SSO-related citizen enforcement has generally been resolved through settlement agreements—either before or after the initiation of litigation. To gain a greater understanding of whether and to what extent these settlements furthered CWA goals, we characterized these settlement agreements, sorting their terms into categories. This chapter describes the settlement terms we encountered and their prevalence.

## A. Data and methods used to characterize settlement agreements

Legal data were acquired and summarized as described in **Chapter 5.A.1**. Stakeholder interviews (described in **Chapter 5.A.2**) also informed our analysis of settlement agreements.

We identified categories of potential settlement terms relevant to collection system maintenance and management and attempted to sort actual settlement terms into these categories. The results are summarized below. Note that terms grouped into the same category often varied substantially in scope and/or detail.[461]

## B. Results

In general, the terms included in settlement agreements emphasized improved collection system maintenance, management, and performance, more effective SSO response, and projects meant to offset impacts to local or regional waters. We cannot directly link such settlement terms to changes in water quality, but they should, at least in theory, contribute to water quality improvement. The settlement terms most directly tied to water quality were requirements for water quality sampling and analysis. Terms geared toward protecting water quality included requirements to prioritize the inspection, maintenance, and rehabilitation of sewer pipe segments based in part on their proximity to surface waters. Monetary payments were directed to (1) attorneys' fees and other costs of litigation; (2) defraying the costs of monitoring compliance with settlement terms; (3) so-called supplemental environmental projects (SEPs) or mitigation payments intended to offset impacts to local waters (through restoration projects, monitoring, watershed education projects, etc.) or improve collection system knowledge or function (through system audits, "smart" manhole cover installation, etc.); (4) private sewer lateral improvements likely to help reduce inflow and infiltration into the public collection system; or (5) paying state or federal penalties.

### 1. Injunctive settlement terms

Injunctive settlement terms require the targeted agency to institute or maintain particular programs or practices, to prioritize activities based on particular criteria, or to meet specified standards. We were able to analyze settlement agreements related to 71 enforcement actions: 41 by California River Watch, 12 by San Francisco Baykeeper, 7 by California Sportfishing Protection Alliance, and 11 by "Other" plaintiffs. Some plaintiffs were more likely than others to include certain categories and subcategories of injunctive terms in their settlement agreements (summarized in **Table 12**, below).

Often, we could not tell whether settlement terms required new actions or simply confirmed existing collection system agency commitments or obligations. In interviews, collection-system-aligned interests argued that the latter offer little benefit. These interests also viewed some new requirements, like specific collection system inspection and cleaning frequencies, as overly prescriptive, demanding inefficient or ineffective practices. Citizen-aligned interests defended terms confirming existing commitments, arguing that a settlement agreement makes those commitments enforceable.

Below, we summarize how the actual settlement terms from citizen enforcement settlement agreements map onto the categories of potential settlement terms we identified as relevant to collection system maintenance and management. We discuss the categories in rough order of their frequency of inclusion in settlements. (See **Table 3** in **Chapter 1** for more information about many of the categories below.)



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The most commonly incorporated terms addressed collection system characterization; collection system cleaning; and repair, rehabilitation, and replacement of defective sewer system segments.

### System characterization

System characterization requirements fall into two main groups. The first group (Group I) includes collection system asset inventory, field inspection, and condition assessment. Requirements to inspect sewer pipe segments, and to assess their condition based on the inspection, were included in the substantial majority of agreements for each plaintiff. Inspection and assessment often occur in stages. During the first stage, a field crew collects inspection data. Later, staff review the field data, assess condition, and rank defects according to a standardized scale. The distinction between inspection and assessment is important because there is often a lag between the collection of inspection data (e.g., closed-circuit television (CCTV) footage) and the interpretation and assessment of those data. Unassessed data do little to support the identification of problems requiring near-term corrective action or the prioritization of future inspection and maintenance schedules. Many agreements prioritized inspection and assessment of infrastructure at higher risk for SSOs, including pipe segments that had not been assessed recently, that were noted to be in poor condi tion during previous assessments, or that were less than a certain diameter and therefore considered prone to blockage. California River Watch's agreements often assigned the highest priority to sewer pipe segments located within a few hundred feet of surface water bodies. Many agreements mandated particular inspection cycles and/or required a specified length of sewer pipe to be inspected each year.

The second group (Group II) includes requirements for flow monitoring or metering (e.g., via "smart manhole covers" or moveable flow meters) and hydraulic or hydrologic modeling or analysis (e.g., a collection system capacity assessment). While San Francisco Baykeeper and "Other" plaintiffs agreements frequently included Group II terms, they were much less c ommon in California River Watch and California Sportfishing Protection Alliance settlements.

### Cleaning

Collection system cleaning requirements were also very common. Most agreements included some form of prioritization and either cyclical or mile-based cleaning goals. The majority of California Sportfishing Protection Alliance's agreements contained hot-spot cleaning, root control, and cleaning quality assurance or quality control elements, in addition to general cleaning requirements. Overall, California River Watch's settlements contained fewer cleaning requirements (and far fewer specific cleaning requirements) than any other plaintiff's settlements. However, since mid-2012, 80% (16 of 20) of California River Watch's settlements have included cleaning requirements.

### Repair, rehabilitation, and replacement

All plaintiffs included provisions related to collection system repair, rehabilitation, and replacement in the majority of their settlement agreements, generally as part of an asset management program. Again, these often included prioritization requirements, usually based on condition (with those segments with the poorest ratings receiving the earliest attention), sometimes coupled with other criteria (e.g., proximity to surface waters, inability to inspect due to structural issues or blockages). A minority of settlement agreements for San Francisco Baykeeper, California Sportfishing Protection Alliance, and "Other" plaintiffs identified specific repair, rehabilitation, and replacement projects but none of California River Watch's settlements did so.

### Capital improvements

The majority of settlements involving San Francisco Baykeeper or "Other" plaintiffs specified capital improvement planning or project requirements. These were less common in California Sportfishing Protection Alliance and California River Watch settlements.



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### Spill rate used as a performance metric

Most of California Sportfishing Protection Alliance's agreements (86%) set progressively more stringent annual spill rate (defined as the number of SSOs per 100 miles of collection system per year;see **Chapter 8** for more) performance requirements. These were also present in the majority of San Francisco Baykeeper's (67%) and "Other" plaintiffs' (64%) settlements. In general, these settlements included a requirement for the agency to develop a corrective action plan in the event it failed to meet annual spill rate requirements. California River Watch settlements did not use spill rate to measure performance.

### Fats, Oils, and Grease (FOG) program

The majority of settlement agreements involving San Francisco Baykeeper, California Sportfishing Protection Alliance, or "Other" plaintiffs included one or more FOG program requirements, but such requirements were uncommon in California River Watch settlements. The most frequent terms in this category were residential or commercial education and outreach requirements and requirements for FOG program evaluation and updating. Requirements to implement existing FOG-related ordinances (e.g., requiring food service establishments to install and maintain grease traps) by increasing inspections and enforcement were also fairly common. In some cases, settlements required the creation of a new ordinance or FOG program.

### SSO response

California River Watch settlements were most likely to include various SSO response-related requirements. Two-thirds of River Watch settlements required development or updating of an SSO response protocol. This frequently included heightened information collection and reporting requirements.[467] In 41% of its agreements, River Watch required some kind of water quality sampling or testing related to SSO events. None of San Francisco Baykeeper's settlements addressed water quality sampling. River Watch included SSO event impact evaluation requirements in 22% of its settlements, and "Other" plaintiffs' settlements included such requirements on one occasion. Finally, 43% of California Sportfishing Protection Alliance's agreements, and a limited number of Baykeeper's and "Other" plaintiffs' agreements, included specific inspection requirements following SSOs.

### Private sewer lateral program

Although collection system agencies are not legally responsible for problems that originate within private sewer lateral lines, private laterals can be a major source of inflow and infiltration into public collection systems. Most California River Watch and San Francisco Baykeeper settlements included programs that addressed private sewer laterals in some way. Requirements for private sewer lateral ordinances were common in Baykeeper (67%) and River Watch (46%) settlements and least common for "Other" plaintiffs. These provisions generally required adoption (or proposal to the appropriate legislative body) of an ordinance requiring inspection or replacement of private laterals under certain conditions (e.g., when property changes hands or is developed further, when agency inspection or maintenance activities suggest a problem, etc.). Private sewer lateral grant or loan programs were included in 32% of River Watch and 27% of "Other" plaintiffs' settlements, but rare in Baykeeper's settlements and absent from California Sportfishing Protection Alliance's. These asked agencies to set aside a specified amount of funds for improvement of certain private laterals. One-third of Baykeeper's settlements and 18% of "Other" plaintiffs' settlements included requirements for agencies to respond to SSOs from private laterals or to perform private lateral maintenance under some circumstances. Occasionally, settlements required agencies to educate the public about their responsibility to maintain private laterals or included another private lateral related requirements.



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**Table 12. Prevalence of injunctive settlement terms, by plaintiff.** The percentage of each plaintiff's actions for which a settlement included each subcategory of term is shown at right. Where a settlement agreement addressed more than one case, the terms applicable to each case are counted separately. Especially common subcategories are shaded in gray. Key to shading in plaintiff columns: 0 to 25% | >25 to 50% | >50 to 75% | >75%

| Category | Subcategory | CRW (%) n=41 | SFBk (%) n=12 | CSPA (%) n=7 | "Other" (%) n=11 |
|---|---|---|---|---|---|
| DATA MANAGEMENT | Computerized maintenance management system (CMMS) | 5 | 33 | 14 | 45 |
| | Geographic information systems (GIS) | 15 | 33 | - | 45 |
| SYSTEM CHARACTERIZATION (GROUP I) | System inventory | 15 | 33 | - | 27 |
| | Field inspection | 83 | 83 | 86 | 73 |
| | Condition rating / assessment | 76 | 75 | 57 | 73 |
| SYSTEM CHARACTERIZATION (GROUP II) | Flow monitoring / metering | 17 | 67 | - | 36 |
| | Hydraulic and hydrologic modeling / analysis | 20 | 92 | 14 | 64 |
| CLEANING | Collection system cleaning | 54 | 83 | 86 | 73 |
| | Enhanced / hot-spot cleaning | 5 | 75 | 86 | 55 |
| | Root control program | 2 | 42 | 71 | 36 |
| | Cleaning quality assurance / quality control | - | 33 | 57 | 9 |
| REPAIR, REHABILITATION, AND REPLACEMENT | As part of an asset management program | 66 | 75 | 57 | 73 |
| | Specific projects identified in agreement | - | 17 | 29 | 36 |
| CAPITAL IMPROVEMENT | Projects and/or planning | 34 | 75 | 43 | 73 |
| PERSONNEL | Staffing | 2 | 8 | 14 | 45 |
| | Training | 2 | 8 | 71 | 36 |
| SPILL RATE PERFORMANCE METRIC | Performance levels set | - | 67 | 86 | 64 |
| | Corrective action plan (if performance levels not met) | - | 67 | 86 | 45 |
| FOG PROGRAM | New ordinance or program | 10 | 25 | - | 9 |
| | Education and outreach | 2 | 67 | 43 | 36 |
| | Inspections | 2 | 25 | 43 | 55 |
| | Ordinance enforcement | 2 | 33 | 43 | 36 |
| | Program evaluation / updating | - | 42 | 57 | 27 |
| INFLOW REDUCTION | Identification / removal of inappropriate connections | 5 | 17 | - | 9 |
| SSO RESPONSE | SSO response protocol development / updating | 66 | 17 | 29 | 36 |
| | Enhanced SSO event recording / reporting | 59 | 25 | 29 | 27 |
| | SSO event volume estimation improvements | 59 | - | - | 27 |
| | SSO event-related water quality sampling / testing | 41 | - | 14 | 9 |
| | SSO cleanup / remediation | 56 | 8 | 14 | 27 |
| | Inspection after SSOs | - | 8 | 43 | 18 |
| | SSO event impact evaluation | 22 | - | - | 9 |
| WATER QUALITY STUDY | Related to SSOs | 32 | - | - | 27 |
| PRIVATE SEWER LATERAL PROGRAM | Private sewer lateral grant/ loan program | 32 | 17 | - | 27 |
| | Private sewer lateral inspection / replacement ordinance | 46 | 67 | 29 | 18 |
| | Private sewer lateral public education | 5 | 17 | - | 9 |
| | Private lateral SSO response and/or maintenance | - | 33 | - | 18 |
| | Other program | 15 | 8 | - | 18 |
| ODOR PROVISIONS | Odor control program | 5 | - | - | 9 |
| WATER CONSERVATION | Water conservation program | 5 | - | - | - |
| OTHER | Provisions related to non-SSO claims | 44 | 25 | 29 | 36 |

CRW California River Watch *(formerly Northern CRW)*
CSPA California Sportfishing ProtectionAlliance
SFBk San Francisco Baykeeper
"Other" Other plaintiffs



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### Personnel

California Sportfishing Protection Alliance settlement agreements frequently (71%) included requirements for staff training, for example, in carrying out inspections, assessments, or maintenance tasks or responding appropriately to and reporting SSOs. Many settlements involving "Other" plaintiffs also included staffing and/or training requirements. California River Watch and San Francisco Baykeeper rarely included such terms in their settlements.

### Data management

Data management involves storing processing, and integrating systems data to track progress, identify deficiencies, assess needs, and enable timely and effective decision making. Data management requirements included computerized maintenance management systems (CMMS), Geographic information systems (GIS), or integrated CMMS and GIS. These types of terms were most common in "Other" plaintiffs' settlements (45%) and settlements involving San Francisco Baykeeper (33%). California Sportfishing Protection Alliance and California River Watch settlements only rarely included data management requirements.

### Water quality study

Almost one-third of the settlements involving California River Watch, and 27% of those involving "Other" plaintiffs included requirements to study and/or monitor water quality in the vicinity of the collection system. San Francisco Baykeeper and California Sportfishing Protection Alliance settlements did not include water quality study provisions. Many of River Watch's requirements specified human marker studies, which track microbial or other indicators of sewage, in waters adjacent to the collection system. Some of these mes required the agency to cooperate with a study by the plaintiff or a third party; others required the agency was required to plan and implement the study itself (often with the involvement of or oversight by the plaintiff). Some settlements required agencies to sample a limited number of SSOs that reached surface waters or the MS4 or to perform an exfiltration study. One collection system agency agreed to evaluate receiving water water-quality data in the prioritization of high-risk pipes for condition assessment and repair, rehabilitation, and replacement.

### Other SSO-related terms

Settlements occasionally included other requirements, such as:

- Inflow reduction: A few settlements included requirements to find or address inappropriate connections to or from sewer lines (e.g., gutter pipe connections, cross-connections with the MS4).
- Odor provisions: On a few occasions, settlements by California River Watch and "Other" plaintiffs contained odor-related provisions.
- Water conservation: In 2 cases, California River Watch settlements included water conservation program requirements. These called for agencies to fund existing programs or to require large developers to pay for measures to reduce water use (and, hence, wastewater volume).

### Requirements not related to SSOs

Finally, many of the settlements involving each plaintiff group (varying from 25 to 44%) contained requirements that were not directly related to SSOs (see **Table 12**). These were most prevalent in California River Watch settlements and included requirements for, for example, treatment facility upgrades or audits, development of standard operating procedures for the use of reclaimed water, pollution source control, installation of groundwater monitoring wells in the vicinity of percolation ponds, compliance with receiving water temperature limitations, and a creek restoration study.

In summary, settlement terms varied between the groups of plaintiffs. California Sportfishing Protection Alliance settlements often included inspection and condition assessment measures; multiple cleaning requirements; collection system repair, rehabilitation, and replacement requirements; spill rate performance metrics; training requirements; and FOG program requirements. California River Watch settlements were



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likely to include inspection and condition assessment; cleaning and repair, rehabilitation, and replacement prioritized based on proximity to surface water; a variety of SSO response requirements; and private sewer lateral program requirements. San Francisco Baykeeper's and "Other" plaintiffs' settlements were most likely to include a broad array of settlement terms.

### 2. Monetary payment terms in settlement agreements and court orders

The direct costs to collection system agencies recorded in settlement agreements or court orders varied in total amount as well as cost breakdown (**Table 13**, **Figures 11–14**). The payment mandates in the 70 settlement agreements (or related court documents) we were able to analyze fell into 5 major categories:

1. Attorneys' fees and other costs of litigation;
2. Payments to support settlement compliance monitoring;
3. Payments, often identified as SEPs or "mitigation payments," intended to offset impacts to local waters (through restoration projects, monitoring, watershed education projects, etc.) or improve collection system knowledge or function (through system audits, "smart" manhole cover installation, etc.);
4. Funding for private sewer lateral replacement grant or loan programs, likely to help reduce inflow and infiltration into the public collection system (although these are often framed as SEPs, we differentiate them here); and
5. Civil penalties paid to the state or federal government.

We identified attorneys' fees and costs related to all but one settlement for which we had information. They ranged from $660 to almost $2.1 million with a median of $50,000 (see **Table 13**). Based on the frequency of round-numbered amounts, settlement payments for attorneys' fees and costs are often not based on a detailed accounting of the actual time and money plaintiffs expended but, rather, represent an amount that the parties found mutually acceptable. This was corroborated by interviews with stakeholders. We identified payments to support settlement compliance monitoring by the plaintiff related to 29% of settlements for which we had information, ranging from $6,000 to $100,000. We identified SEP-like payments related to 61% of settlements for which we had information, ranging from $1,500 to $8.5 million, and private sewer lateral replacement grant or loan programs related to 29% of settlements, ranging from $25,000 to $3.5 million. Finally, we identified civil penalties related to three settlements, of $20,000, $201,600, and $800,000.

**Table 13. Summary statistics for payments mandated by settlement agreements and court orders.** The number of settlements that included payments in each of the five categories is noted in the second column.

| Cost category | n = | Mean value | Median value | Lowest non-zero value | Highest value |
|---|---|---|---|---|---|
| Attorneys' fees and costs | 69 | $168,875 | $50,000 | $660 | $2,096,745 |
| Settlement compliance monitoring | 20 | $12,429 | $0 | $6,000 | $100,000 |
| SEP payments | 43 | $193,915 | $15,000 | $1,500 | $8,500,000 |
| Private sewer lateral grant or loan program | 20 | $96,923 | $0 | $25,000 | $3,500,000 |
| Civil penalties | 3 | $14,806 | $0 | $20,000 | $800,000 |
| **Total settlement amount** | **69** | **$493,790** | **$110,000** | **$2,160** | **$11,396,745** |



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### Relationship of monetary terms to potential water quality benefits

SEPs aimed at improving collection system knowledge or function and private sewer lateral improvements are most directly related to reducing future SSO impacts. Other SEPs are also conceptually consistent with achieving water quality benefits, although these benefits may not be directly linked to SSOs, and the actual benefits achieved will depend on the details of the specific project. Many of the potential benefits are indirect and difficult to quantify. Civil penalties paid to the state, which are placed in a Cleanup and Abatement Account that funds waste cleanup or abatement of the effects of waste on waters of the state (see **Chapter 3.B**), are more likely to benefit water quality than federal penalties, which generally go to U.S. Treasury and are not earmarked for water quality purposes (see **Chapters 3.A and 4.B.2**).

**BOX 3.** Costs unaccounted for in our analysis

It is important to highlight the many costs not reflected in the data available to us. These include the defendant agencies' costs of managing their responses to citizen enforcement actions —including record production, legal defense and negotiation, data analysis, program development, and their own compliance monitoring and reporting.

We also do not analyze the costs associated with the administrative, maintenance, or capital programs mandated by a settlement. In some cases, settlements explicitly included financial commitments in the form of specified minimum or maximum annual expenditures for capital improvements, maintenance, or other costs. However, we found these difficult to track and compare in a consistent way due to wide variation in the type and wording of commitments and to the fact that compliance with (the majority of) agreements, which lacked specific dollar amounts, could nonetheless result in similar levels of expenditures.

Citizen's full costs, too, are not known. The attorneys' fees and costs negotiated in a settlement may or may not cover the actual amount expended on investigating and prosecuting a particular enforcement action.

A more thorough accounting of the costs to parties in SSO-related citizen enforcement actions is beyond the scope of this report.

Although monetary payments associated with settlements varied within plaintiff groups, each group's payment profile has distinctive features, summarized below.

### California River Watch

We found payment requirement information related to 42 enforcement actions (addressed by 41 settlement agreements[468]) by California River Watch. As **Figure 11** shows, River Watch's earlier settlements involved mainly attorneys' fees and SEP payments, although commitments for private sewer lateral grant or loan programs were sometimes included. SEPs in River Watch's settlements have often paid for water quality studies (including creek-sewer line studies, human marker studies, and studies directed at evaluating the human-health and biological impacts of exfiltration and/or evaluating whether leakage is entering the storm drain system). They have also supported environmental remediation and education projects and installation of "monitoring manhole covers." Other payments mandated in River Watch's settlements (not specifically identified as SEPs, but fitting the mold) included funding for compliance audits, analysis of the use of pre-chlorination for odor control and solids thickening, training, and smart manhole installation and location assistance. Monetary payments in River Watch's more recent settlements have included attorneys' fees and costs, usually accompanied by commitments to fund private sewer lateral replacement grant or loan programs or, occasionally, small SEPs.



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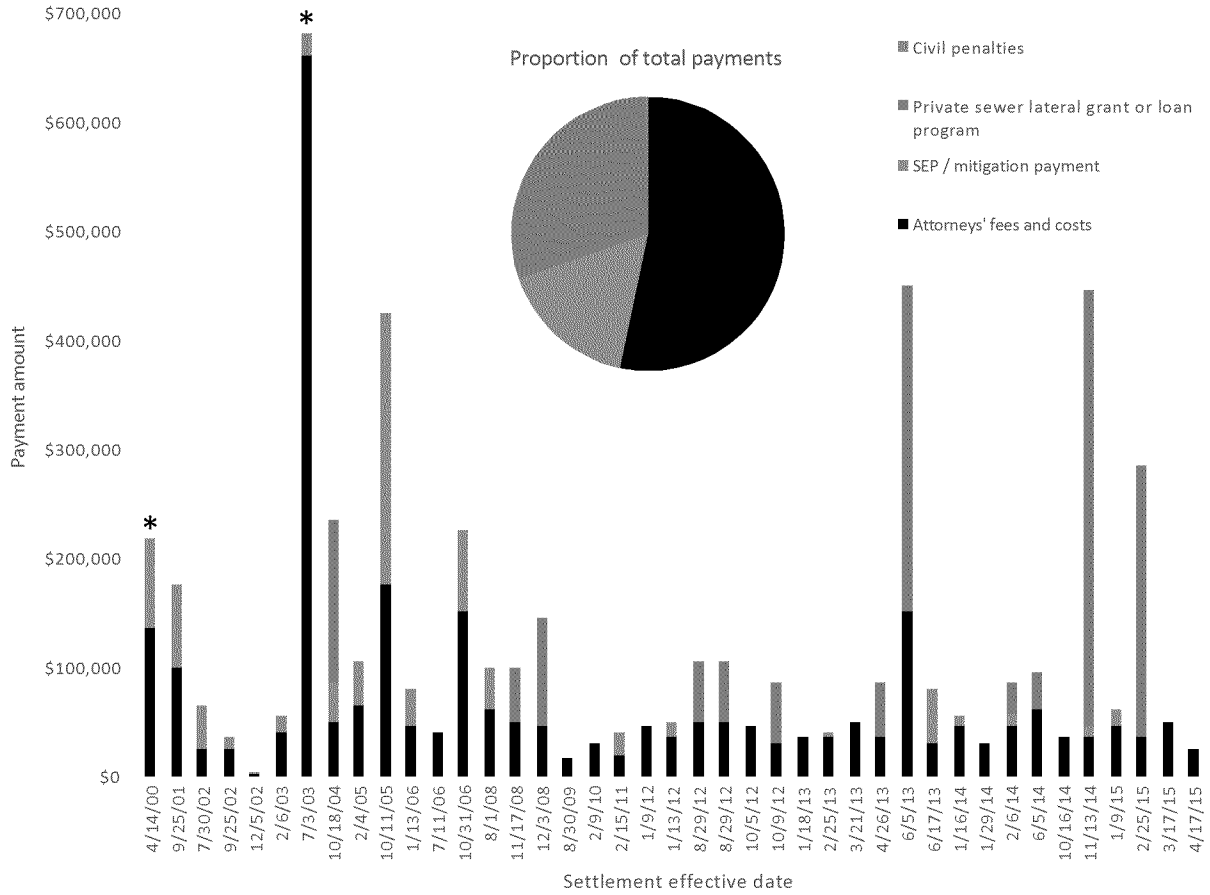
**Figure 11. Monetary payment requirements associated with SSO-related citizen enforcement actions by California River Watch.** Each bar represents a settlement, shown in chronological order by effective date, for which we identified payment requirements. In two instances, attorneys' fees and costs were awarded by a federal district court (*), but in most cases they were determined through settlement. The pie chart shows the proportion of overall costs allocated to each category.




The highest total amount shown ($680,000) is for an unusual case—for California River Watch, but also for citizen enforcement cases involving SSOs more broadly. The attorneys' fees award for this action covered litigation that extended well beyond SSO claims (which were settled early, in a settlement we were unab le to find, and whose costs are, therefore, not reflected here). For more information about this case, see **Chapter 9.C.4** and **Figure 57**).

None of River Watch's settlements have included provisions for stipulated payments related to late reports or other settlement violations.



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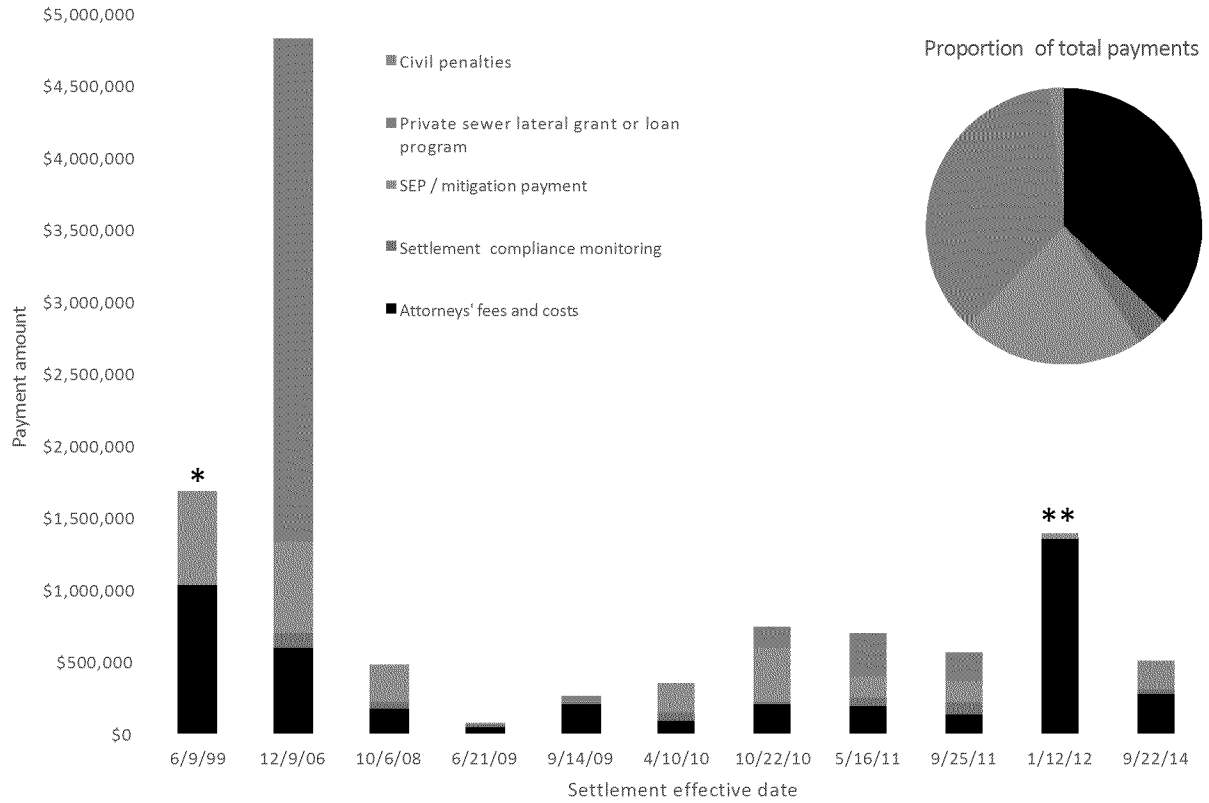
San Francisco Baykeeper

We found payment requirement information related to the resolution of all 12 completed lawsuits (represented by 11 final settlement agreements) San Francisco Baykeeper has been involved in. As **Figure 12** shows, the group's settlements have generally included much higher attorney's fees and costs than have California River Watch's. SEPs and/or commitments to fund private sewer lateral replacement grant or loan programs were common. Baykeeper's SEPs were often directed to a third-party nongovernmental organization with the precise use to be determined later, but they have also gone directly towards a variety of specified projects, including a sewer-rate-increase assistance program, habitat restoration and related property purchase, desalination equipment, low impact development projects, projects for the Marine Mammal Center, and a public awareness program to prevent SSOs in private sewer laterals.

**Figure 12. Monetary payment requirements associated with SSO-related citizen enforcement actions by San Francisco Baykeeper.** Each bar represents a settlement, shown in chronological order by effective date, for which we identified payment requirements. In two instances, attorneys' fees and costs were awarded in all (*) or in part (**) by a federal district court, but in most cases they were determined through settlement. The pie chart shows the proportion of overall costs allocated to each category.




The final column in the figure represents a settlement agreement reached by the parties to a pair of consolidated government-initiated lawsuits in which San Francisco Baykeeper and Our Children's Earth Foundation intervened. The actions targeted East Bay Municipal Utility District andthe six cities and one district whose satellite collection systems feed into its collection and treatment system. (See **Chapter 9.C.2** and **Figure 51** for more on this unusual situation). The resulting settlement includedonly attorneys' fees, settlement compliance monitoring support, and civil penalties.

Most of Baykeeper's settlements have included provisions for stipulated payments to be directed toa third-party nongovernmental organization, the U.S. Department of Justice, or the Regional Board in the event the defendant missed report (or other) deadlines, or had SSOs in excess of spill performance goals. Because



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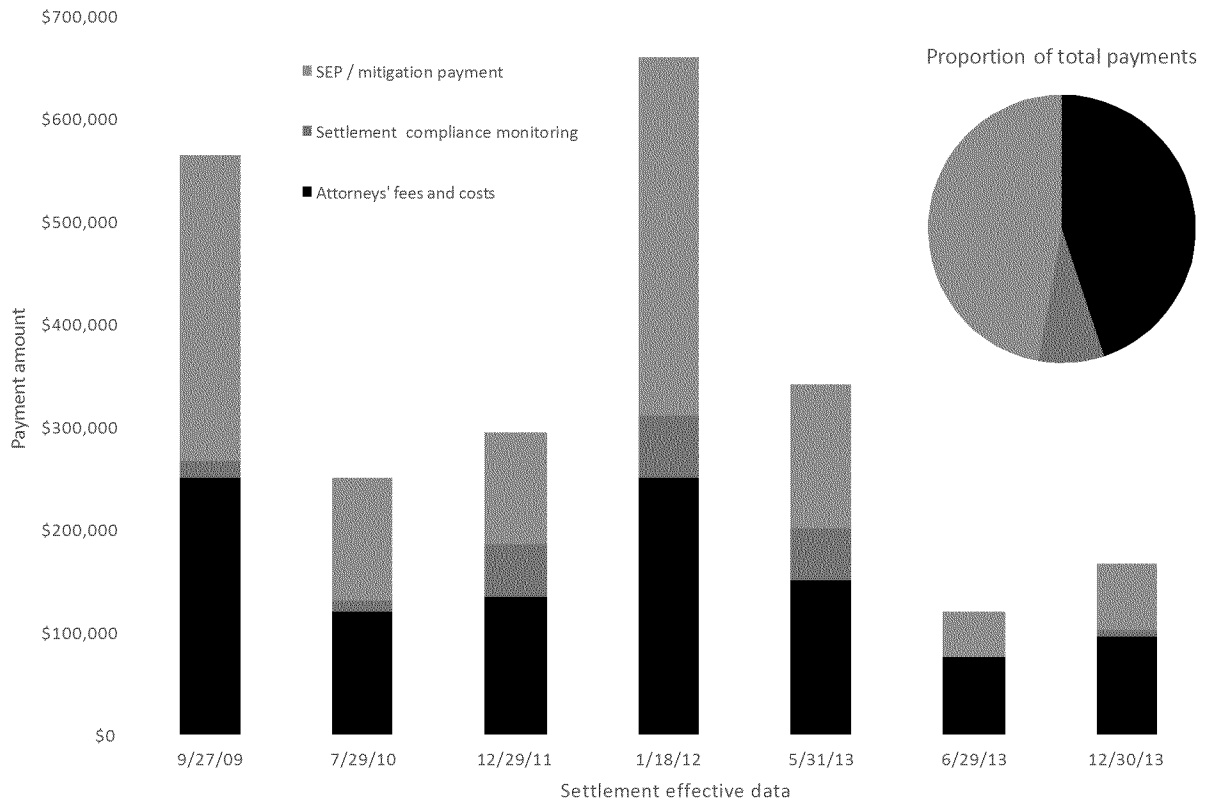
these costs were contingent on the defendant violating the settlement terms, they are not included in the total settlement amount or in **Figure 12**.

### California Sportfishing Protection Alliance

We found payment requirement information related to the resolution of each of California Sportfishing Protection Alliance's 7 SSO-related lawsuits. As **Figure 13** shows, the group's settlements have generally included higher attorney's fees and costs than have California River Watch's. California Sportfishing Protection Alliance's settlements included only 3 types of payment requirements: attorneys' fees and costs, funds for settlement compliance monitoring, and "mitigation payments." All mitigation payments were directed to a third-party nongovernmental organization for distribution to support activities described as beneficial to local watersheds, usually with the precise use to be determined later. In one case, these funds were earmarked for a particular purpose (land acquisition for a preserve).

**Figure 13. Monetary payment requirements associated with SSO-related citizen enforcement actions by California Sportfishing Protection Alliance.** Each bar represents a settlement, shown in chronological order by effective date, for which we identified payment requirements. The pie chart shows the proportion of overall costs allocated to each category.




In 4 of its 7 settlements, California Sportfishing Protection Alliance included provisions for stipulated payments to be directed to a third-party nongovernmental organization if the agency submitted late or incomplete reports. Again, because these costs were contingent on the defendant violating the settlement terms, they are not included in the total settlement amount or in **Figure 13**.



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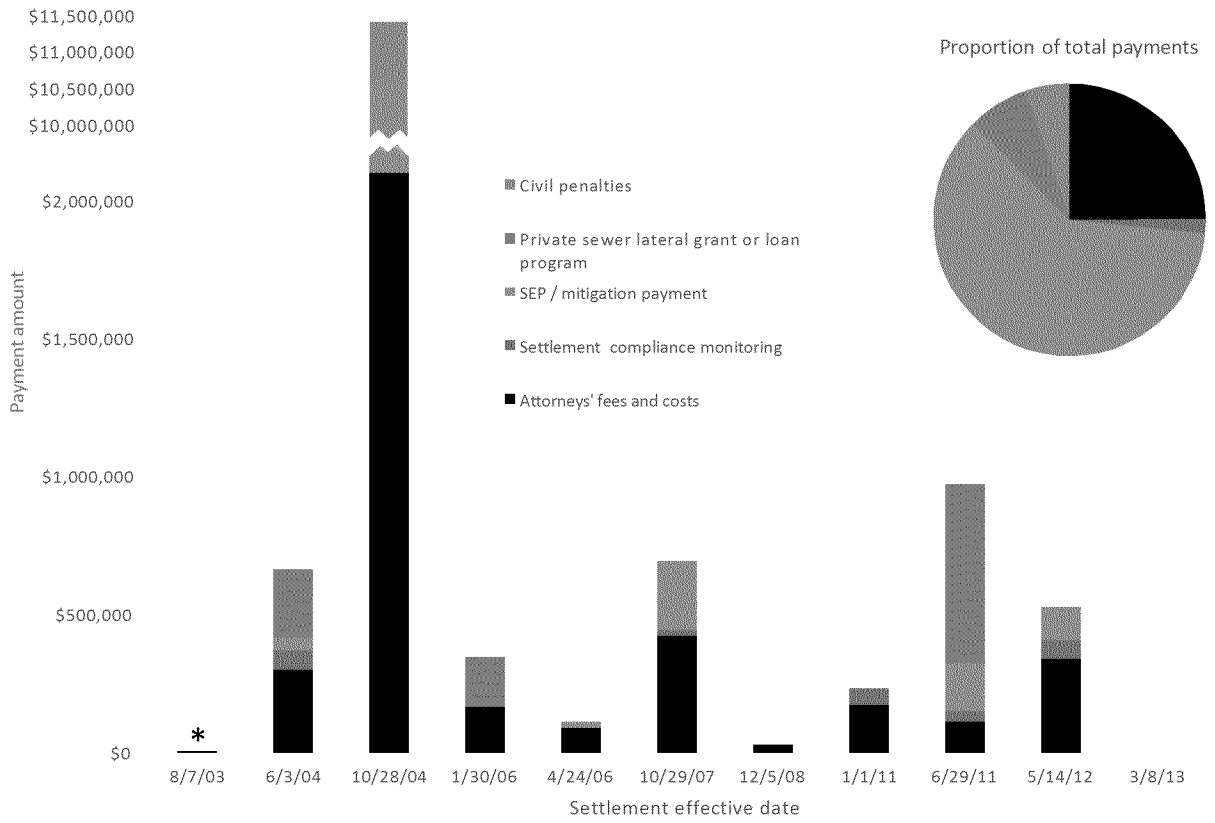
"Other" plaintiffs

We found payment requirement information related to the resolution of11enforcement actions involving other citizen plaintiffs. As **Figure 14** shows, this catch-all group is a mixed bag.

This group includes the largest SSO -related settlement our research uncovered. In October 2004, Santa Monica Baykeeper (now LA Waterkeeper), state and federal regulators, and the City of Los Angeles signed an agreement that included a number of specific SEP projects aimed at creek and wetlands restoration and stormwater diversion and treatment. It included $800,000 in civil penalties payable to the U.S. treasury and $800,000 to the Regional Board. Santa Monica Baykeeper, which had initiated litigation against the City, received the majority ($1.6 million) of the attorneys' fees and costs, with lesser amounts going to intervening homeowners' associations and the Los Angeles Regional Board.

**Figure 14. Monetary payment requirements associated with SSO-related citizen enforcement actions by "Other" plaintiffs.** Each bar represents a settlement, shown in chronological order by effective date, for which we identified payment requirements . In one instance, attorneys' fees and costs were awarded by a federal district court (*), but in most cases they were determined through settlement. The pie chart shows the proportion of total payments allocated to each category.




Note that the first and last columns in **Figure 14** are likely underestimate s. In both cases, San Diego Baykeeper sued the U.S Department of Defense regarding SSOs at Camp Pendleton. Neither settlement agreement included any monetary payments, instead "reasonable attorneys' fees and costs" appear to have been determined via separate settlement agreements that we were unable to find. that we were unable to find. The $6,372 shown for the first settlement was awarded to a secondary plaintiff that submitted a fee application to the court after entry of the SSO settlement agreement (and, presumably, after the primary plaintiff came to an agreement with the defendant regarding its own attorneys' fees and costs).[469]



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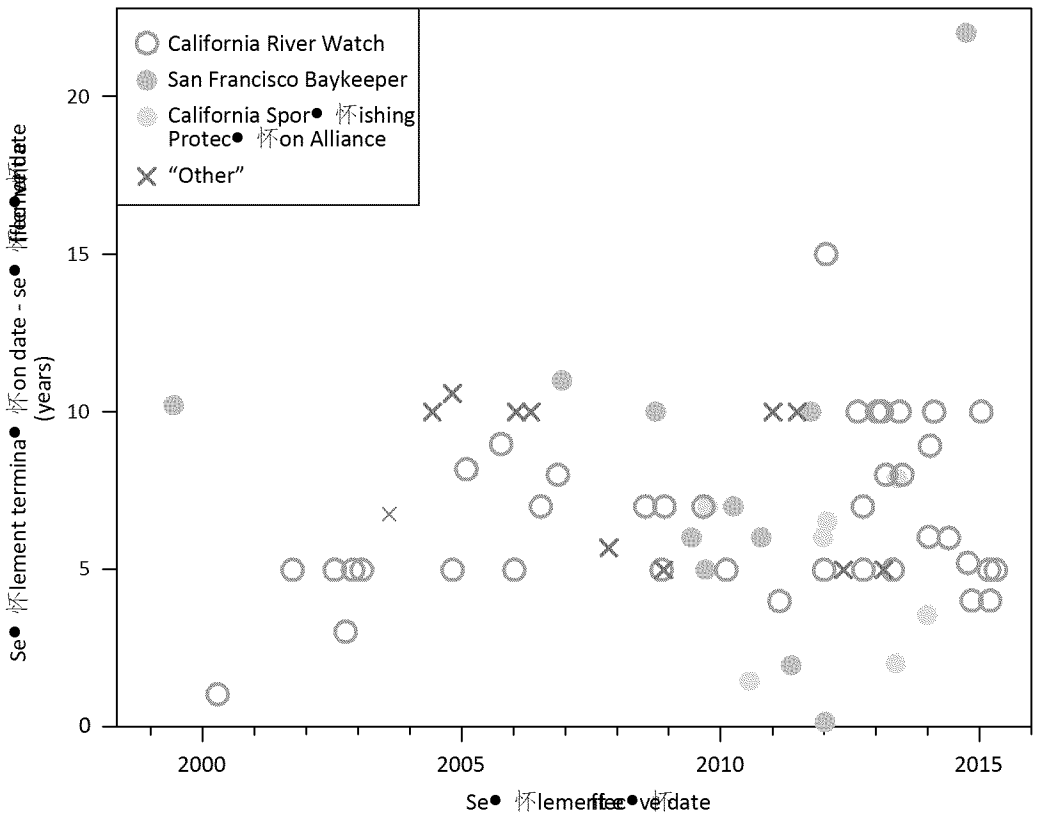
### 3. Settlement duration

Most settlement agreements have lasted (or are expected to last) between 5 and 10 years, although a number have been shorter, and a few longer (see **Figure 15**).

The shorter-duration agreements include several cases in which the collection system agency successfully triggered an early termination clause (which allowed the agreement to end before the planned termination date if the collection system agency met certain criteria earlier than required).

More than half of the settlement agreements for each plaintiff or plaintiff group remained in effect as of mid-2015.

**Figure 15. Settlement agreement duration.** The actual or expected settlement duration is shown for each settlement (Y-axis) plotted against the settlement effective date (X-axis).



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**Chapter 6 summary:**

- "Other" plaintiffs' settlements and San Francisco Baykeeper's settlements were most likely to include a broad array of injunctive settlement terms.
- California Sportfishing Protection Alliance settlements were likely to include inspection and condition assessment; multiple cleaning requirements (including root control and quality assurance / quality control); Repair, rehabilitation, and replacement; spill rate performance metrics; training requirements; and FOG program requirements.
- California River Watch settlements were likely to include inspection and condition assessment; cleaning and repair, rehabilitation, and replacement prioritized based on proximity to surface water; a variety of SSO response requirements; and private sewer lateral program requirements.
- Monetary terms associated with the 70 settlement agreements (or related court documents) we were able to analyze included the following:
    - Attorneys' fees and costs related to all but one settlement, ranging from $660 to $2.1 million (median = $50,000; mean = $168,875) ;
    - Payments to support settlement compliance monitoring by the plaintiff related to 29% of settlements, ranging from $6,000 to $100,000 (median = $0; mean = $12,429);
    - Supplemental environmental project (SEP) payments related to 61% of settlements, ranging from $1,500 to $8.5 million (median = $15,000; mean = $193,915);
    - Private sewer lateral replacement grant or loan programs related to 29% of settlements, ranging from $25,000 to $3.5 million (median = $0; mean = $96,923 ).
    - Three settlements included civil penaltie s (of $20,000, $201,600, and $800,000).
- The monetary terms in plaintiffs' settlements varied significantly, with each of the three main groups emphasizing different things.
- Many costs to the parties, such as collection system agencies' costs of managing their responses to citizen enforcement actions, are not reflected in our analysis because they were not contained within settlements and other court documents.
- Most settlements agreements were intended to last for between 5 and 10 years.



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# CHAPTER 7 — The interaction of citizen and government enforcement

To understand the interaction of citizen and government SSO enforcement, we researched federal and state enforcement actions. Due to data limitations, we decided to focus our efforts on identifying government enforcement actions against the same collection systems targeted for citizen enforcement. This Chapter briefly summarizes government enforcement actions against California collection system agencies and describes the extent to which collection systems targeted for citizen enforcement also received enforcement attention from regulators. It examines the degree of overlap between the violations addressed by and remedies sought in similarly timed citizen and government enforcement actions.

## A. Data and methods used to characterize the interaction between citizen and government enforcement

The State Board's California Integrated Water Quality System (CIWQS)[470] manager exported enforcement actions (extending back to 1998) from the CIWQS database on February 13, 2015, to produce a data flat file[471] for our use. The export was limited to records that contained the acronym "SSO." Additional information was gleaned from summaries provided in legal documents (see description in **Chapter 5.A.1**), on EPA's website,[472] and documents and information provided on the State and Regional Boards' websites, including:

- Annual Compliance Reports for the State Board's SSO Reduction Program[473]
- CIWQS enforcement public reports[474]
- Webpages and documents summarizing enforcement activities[475]
- Webpages linking to enforcement orders[476]

We summarize government enforcement actions in **Part B.1**, below.

We had hoped to be able to compare government enforcement against targeted and untargeted collection systems, but we were unable to reconcile the CIWQS export data, the summary information presented in the annual compliance reports, and the orders and information available from the State and Regional Boards' websites. Due to differences in categorization, accounting, and availability, each source appeared to provide different, incomplete, and inconsistent coverage. Therefore, we narrowed our focus to finding government enforcement information related to specific targeted collection systems only.

To gauge the interaction and degree of overlap of government and citizen enforcement, we attempted to identify all SSO-related administrative civil liability (ACL) complaints and orders, cease and desist orders (CDOs), cleanup and abatement orders (CAOs), and EPA administrative orders (AOs) for targeted collection systems to compare their dates, the violations they addressed, and the remedies they sought with similarly timed citizen enforcement actions. We found the available documents and information to be variable from one region to another and from one enforcement action to another.[477] Because we recognize that regulators may put substantial work into enforcement actions before they go public, for the purposes of this report, we define a government enforcement action with an effective date within 2 years of the date citizen enforcement action was initiated as occurring within a similar time frame. We further highlight government enforcement actions within 1 year of citizen enforcement actions.



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## B. Results

### 1. Government enforcement actions against California collection system agencies

#### *a. EPA enforcement actions since 2007*

According the EPA Region 9 website, since 2007 EPA has issued three administrative orders to nine California collection system agencies and entered into two consent decrees with nine others.[478] One administrative order addressed multiple collection system agencies in Marin County in 2008, including two agencies that also experienced separate SSO-related citizen enforcement; the other order addressed one of the latter two agencies in 2007.[479] State regulators and citizen plaintiffs or citizen interveners were also parties to the consent decrees, which involved (1) the City of San Diego and (2) East Bay Municipal Utility District and its 7 satellite collection system agencies.[480] EPA was also involved in earlier SSO enforcement actions in California, but we did not find a complete record of that activity.

#### *b. State and Regional Board enforcement actions*

As of February 2015, a search of the State Board's CIWQS enforcement action database revealed almost 1,800 formal or informal State or Regional Board enforcement actions related at least in part to SSOs since 1998. According to the database, the Boards' formal enforcement actions have been geared more toward imposing penalties (155 ACLs) than toward injunctive relief (33 CAOs and 18 CDOs). These numbers likely include some duplicates (e.g., where an ACL complaint and order were entered separately, for CDOs and amended CDOs, etc.) and are not directly comparable with the more specific citizen enforcement data we analyzed for **Part B.2** of this chapter, described above in **Part A**.

The pattern of greater reliance on penalty actions is also borne out by the State Board's annual compliance reports for the statewide SSO Reduction Program. The reports summarize Statewide-Permit-related enforcement actions taken by the Regional Boards from mid-2008 to mid-2014 (**Table 14**). During this 6-year time period, enforcement actions involving penalties (at least 53 ACLs) were much more common than actions requiring injunctive relief (at least 6 CDOs and 2 CAOs). Some of the ACLs were settled to suspend a portion of the liability pending completion of an SEP or enhanced compliance project (see **Chapter 3.C.3**). Judicial enforcement actions have been rare.

**Table 14. Numbers of enforcement actions by the Regional Boards related, in whole or in part, to the Statewide Permit**, as summarized in annual compl iance reports for the SSO Reduction Program.[481] Informal actions are shown in gray text. The first two reports listed the total dollar amount of assessed liability, provided here.

| Period | # of actions | Detail |
|---|---|---|
| **FY 2008–2009** | 6 formal | $2,000,000+ total assessed liability (no Regional breakdown provided) |
| **FY 2009–2010** | ACL: 14<br>CDO: 1<br>Informal: 7 | $5,767,000 total assessed liability<br>Region 1: 4 ACL<br>Region 2: 5 ACL, 1 CDO<br>Region 5: 1 ACL<br>Region 8: 1 ACL<br>Region 9: 2 ACL, 7 NOV |
| **FY 2010–2011 through February 2011** | ACL: 1<br>CAO: 2<br>§13267: 5<br>Informal: 42 | Region 1: 1 ACL<br>Region 3: 2 NOV, 3 OC<br>Region 4: 2 CAO, 2 §13267, 1 NOV<br>Region 5: 4 NOV, 1 SEL<br>Region 6: 3 NOV, 1 SEL<br>Region 7: 2 §13267<br>Region 8: 1 SEL<br>Region 9: 1 §13267, 6 NOV, 20 SEL |



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| | | |
|---|---|---|
| **March 2011 through FY 2011–2012** | ACL: 20<br>CDO: 2<br>§13267: 12<br>SCO: 1<br>Informal: 179 | Region 1: 3 ACL<br>Region 2: 6 ACL, 2 CDO, 4 NOV<br>Region 3: 7 ACLs, 1 §13267<br>Region 4: 1 SCO, 5 §13267, 2 NOV<br>Region 5: 1 ACL, 3 §13267, 90 NOV<br>Region 6: 1 ACL, 3 NOV, 2 SEL<br>Region 7: 1 §13267<br>Region 8: 3 SEL<br>Region 9: 2 ACL, 2 §13267, 75 SEL |
| **FY 2012–2013** | ACL: 10<br>CDO: 3<br>§13267: 7<br>Informal: 117 | Region 1: 1 ACL, 2 §13267<br>Region 2: 1 ACL, 2 CDO, 4 NOV<br>Region 3: 1 ACL, 2 NOV<br>Region 4: 1 ACL, 3 §13267, 10 NOV<br>Region 5: 1 §13267, 83 NOV<br>Region 6: 1 ACL, 1 CDO, 2 NOV, 2 SEL, 1 OC<br>Region 7: 1 ACL<br>Region 8: 1 ACL, 1 SEL<br>Region 9: 3 ACL, 1 §13267, 12 SEL |
| **FY 2013–2014** | ACL: 9<br>Informal: 90 | Region 1: 1 ACL<br>Region 2: 4 NOV, 1 SEL<br>Region 3: 1 ACL<br>Region 4: 1 ACL, 5 §13267<br>Region 5: 1 ACL, 61 NOV<br>Region 7: 2 ACL<br>Region 8: 1 ACL<br>Region 9: 2 ACL, 24 SEL |

| | | | | | |
|---|---|---|---|---|---|
| ACL | Administrative civil liability | FY | Fiscal year | SCO | Settlement court order |
| CAO | Cleanup and abatement order | NOV | Notice of violation | SEL | Staff enforcement letter |
| CDO | Cease and desist order | OC | Oral communication | §13267 | Water Code § 13267 letter |

### 2. Government enforcement actions against targeted collection systems

Due to challenges associated with reconciling different sources of data (see **Part A**, above), we focused our search for specific government enforcement data on targeted collection systems.

We found that some collection systems received enforcement attention from both citizens and regulators (see **Figure 16.A**). Our analysis suggests that 51% of targeted collection systems (45 of 88 systems) experienced formal government enforcement related to SSOs at some point during the past two decades, while 49% (43 systems) appear to have experienced only citizen enforcement.

#### Extent of similarly timed government enforcement attention

In some instances, government actions took place during a similar time frame to citizen action (see **Figure 16.B, C**).

"Joint" actions: For 11% of targeted systems (10 systems), citizen and government enforcement occurred only in close connection with one another. We describe these as "joint" actions (see **Figure 16**), and they include both situations in which citizen plaintiffs intervened in a government lawsuit and situations in which a later-filed government lawsuit was consolidated with an earlier-filed citizen suit. Seven of the 10 jointly addressed systems were defendants in the subsequently consolidated government enforcement cases against East Bay Municipal Utility District and its satellite collection systems in which citizen plaintiffs intervened.[482] The final 3 jointly addressed systems were the City of Los Angeles's Hyperion Collection System and LA City Bureau of Sanitation Collection System and the City of San Diego's collection system. Each city was sued by

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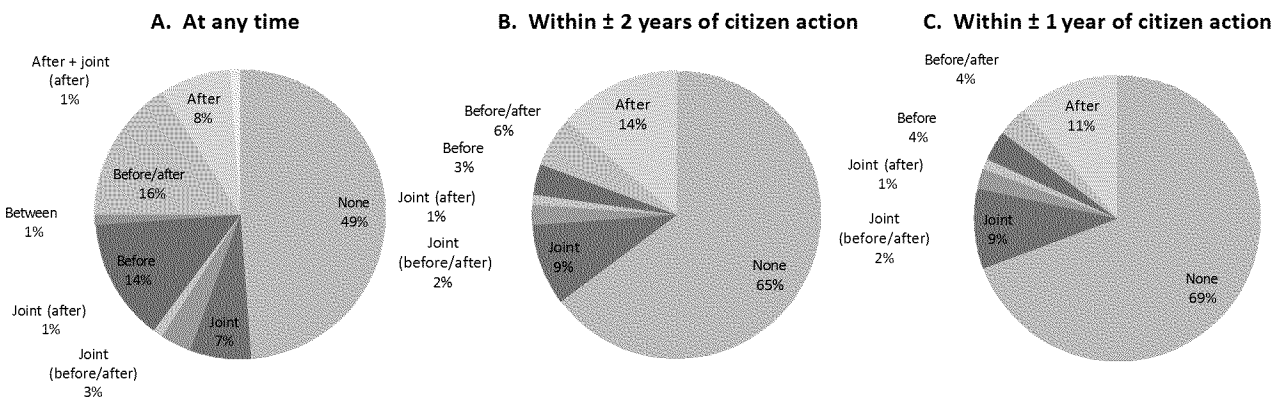
a citizen plaintiff before government lawsuits were filed, and, in each case, the later-filed government suit was eventually consolidated with the citizen suit. Also in each case, the applicable Regional Board had settled an ACL action regarding one or two large SSOs within the year prior to the date of the citizen was initiated and additional government enforcement action occurred following the joint action.[483]

Other actions: Overall, 40% of targeted collection systems (35 systems) received non-joint SSO-related government and citizen enforcement attention. Because government enforcement can take time to progress to formal public action (the dates used here), we focus on government within a range of 2 years before-or-after and within a range of 1 year before-or-after initiation of non-joint citizen enforcement action as similarly timed. Similarly timed actions within 2 years affected ~23% (n=20) of targeted collection systems, while similarly timed actions within 1 year affected 18% (n=16). One of the targeted collection systems experienced two rounds of citizen enforcement with similarly timed government enforcement.

**Figure 16. Timing of SSO-related government enforcement action against targeted collection systems, relative to the time citizen enforcement action was initiated.** The included table explains the relative timing terms used in the pie charts below which show the fraction of targeted collection systems (n = 88) that our research suggests received government enforcement attention for SSOs **(A)** at any time in the past 2 decades , **(B)** within 2 years before or after citizen action was initiated, and **(C)** within 1 year before or after citizen action was initiated.

| Relative timing | Description |
|---|---|
| **None** | No government enforcement actions occurred. |
| **Joint** | A citizen plaintiff(s) intervened in a government lawsuit or a later-filed government lawsuit was consolidated with a citizen suit against the same defendant |
| **Joint (before/after)** | Same as "Joint," but additional government action took place both before and after initiation of the joint action. |
| **Joint (after)** | Same as "Joint," but additional government action took place after initiation of the joint action. |
| **Before** | Government enforcement action(s) occurred before initiation of citizen action. |
| **Between** | Government enforcement action occurred between initiation of one citizen action and another. |
| **Before/after** | Government enforcement actions occurred both before and after initiation of citizen action(s). |
| **After** | Government enforcement action(s) occurred after initiation of citizen action(s). |
| **After + joint (after)** | Government enforcement actions occurred after initiation of a citizen action. Citizen and government plaintiffs addressed the collection system jointly in another action, and additional government action took place after initiation of the joint action. |




A citizen action initiated in a similar time frame to a government action might be expected to be more likely to overlap with, or be duplicative of, the government action than a citizen action initiated at a more remote time. For each of the 21 non-joint citizen enforcement actions with similarly timed formal government enforcement action(s), we estimated the degree of overlap at the time the citizen action was initiated (the



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initial NOI date) and for the whole 4 -year time period (overall). The results are summarized below and in **Table 15**.

### Extent of overlap in violations addressed

We distinguished different degrees of overlap between the specific violations alleged or the time period of the allegations addressed by a citizen enforcement action and similarly timed government enforcement action(s). We assigned a "low" degree of overlap where the government action(s) addressed a fraction of the SSOs the citizen action alleged and/or covered a fraction of the time period at issue in the citizen allegations. We assigned a "high" degree of overlap where the government action(s) addressed most or all of the SSOs alleged or the time period at issue in the citizen allegations. A "medium" degree of overlap fell somewhere in the middle.

As of the initial NOI date: Twelve (57%) of the citizen enforcement actions analyzed were initiated before similarly timed government enforcement action(s), so there was no overlap in the violations addressed at the time these citizen actions were initiated. Six (29%) of the citizen enforcement actions were initiated at a time when there was a low degree of overlap with the violations addressed by prior government enforcement action(s). Finally, three (14%) of the citizen enforcement action s were initiated at a time when there was a medium degree of overlap with the violations addressed by prior government enforcement.

Overall: Considering all government enforcement actions with 2 years before or after initiation of citizen enforcement, eight (38%) of the citizen enforcement actions had a low degree of overall overlap with the violations addressed by similarly timed government enforcement action(s). Four (19%) of the citizen enforcement actions had a medium degree of overall overlap, and nine (43%) had a high degree of overall overlap.

### Extent of overlap in remedies sought

We also distinguished different degrees of overlap between the types of remedies sought by a citizen enforcement action and similarly timed government enforcement action(s). All of the citizen action sought injunctive relief related to collection system infrastructure and/or management improvements. We assigned a "low" degree of overlap where the government action(s) sought penalties only (ACL actions). We note that ACLs were sometimes settled to included SEPs or enhanced compliance projects relevant to the collection system, identified with by "♦" in **Table 15**. We assigned a "high" degree of overlap where one or more government action(s) sought injunctive relief through an EPA Administrative Order (AO), a cease and desist order (CDO), or a cleanup and abatement order (CAO).

As of the initial NOI date: Again, twelve (57%) of citizen enforcement actions were initiated before similarly timed government enforcement action(s), so there was no overlap in the remedies sought at the time these citizen actions were initiated. Seven (33%) of the citizen enforcement actions were initiated at a time when there was a low degree of overlap with the remedies sought by prior government enforcement action(s). Finally, 2 (10%) of the citizen enforcement actions were initiated at a time when there was a high degree of overlap with the remedies sought by prior government enforcement.

Overall: Considering all government enforcement actions with 2 years before or after initiation of citizen enforcement, thirteen (62%) of the citizen enforcement actions had a low degree of overall overlap with the remedies sought by similarly timed government enforcement action(s). Eight (38%) had a high degree of overall overlap.



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**Table 15. Degree of overlap between government enforcement actions and separate citizen enforcement actions with similar timing**. Where a collection system agency manages more than one collection system, the system addressed is identified in an endnote. Dates of actions, violations addressed , and remedies sought are shown in brown text for citizen actions and blue text for government actions. The shading used in the "Date of action" column is the same used in **Figure 16**. For government enforcement actions, the "Date of action" is the effective date. Where the degree of overlap in violations or remedies was different at the time the citizen action was initiated, both are shown.

| | Collection system agency | Date of action | Violations addressed (years) | Violation overlap | Remedies sought | Remedy overlap |
|---|---|---|---|---|---|---|
| 1 | City of Arcata | 6/12/2008<br>8/3/2009 NOI<br>5/19/2010 | - SSOs (2004–07)<br>- SSOs (2004–09)<br>- SSOs (2007–09) | **MEDIUM**<br>HIGH | - ACL Order♦ (*)<br>- Injunctive relief, etc.<br>- ACL Complaint | LOW |
| 2 | Coachella Valley Water District | 12/26/2013<br>6/26/2014<br>11/4/2014 NOI | - 1 SSO (2010)<br>- Same as complaint<br>- SSOs (2009–14) | LOW | - ACL Complaint<br>- ACL Order♦ (" ")<br>- Injunctive relief, etc. | LOW |
| 3 | Eastern Municipal Water District[484] | 1/28/2015 NOI<br>4/25/2015<br>6/3/2015 | - SSOs (2010–15)<br>- 1 SSO (2012–13)<br>- Same as above | **NONE**<br>LOW | - Injunctive relief, etc.<br>- ACL Order, stipulated<br>- ACL Order, adopted | **NONE**<br>LOW |
| 4 | City of Eureka | 5/24/2013<br>6/28/2013 NOI<br>4/22/2014 | - 1 SSO (2012)<br>- SSOs (2009–13)<br>- Same as complaint | LOW | - ACL Complaint<br>- Injunctive relief, etc.<br>- ACL Order (" ") | LOW |
| 5 | City of Grass Valley | 7/6/2012<br>12/4/2012<br>11/14/2013 NOI<br>1/20/2015<br>2/27/2015 | - SSOs (2011–12)<br>- Same as complaint<br>- SSOs (2008–13)<br>- SSOs (2009–14)<br>- Same as above | **MEDIUM**<br>HIGH | - ACL Complaint<br>- ACL Order♦ (" ")<br>- Injunctive relief, etc.<br>- ACL Order♦,stipulated<br>- ACL Order, adopted | LOW |
| 6 | Town of Hillsborough | 6/5/2008 NOI<br>9/16/2008<br>3/11/2009<br>3/11/2009 | - SSOs (2003–08)<br>- SSOs (2004–08)<br>- SSOs (2003–09)<br>- SSOs (2003–09) | **NONE**<br>HIGH | - Injunctive relief, etc.<br>- ACL Complaint<br>- ACL Order♦ (" ")<br>- CDO | **NONE**<br>HIGH |
| 7 | Lake County Sanitation District (Southeast)[485] | 5/30/2003 NOI<br>6/7/2004<br>2/8/2005<br>2/8/2005 | - SSOs (1998–03)<br>- SSOs (2002–04)<br>- Same as complaint<br>- SSOs (2002–04) | **NONE**<br>MEDIUM | - Injunctive relief, etc.<br>- ACL Complaint<br>- ACL Settlement (" ")<br>- CAO | **NONE**<br>HIGH |
| 8 | Lake County Sanitation District (Northwest)[486] | 4/10/2002<br>8/7/2002<br>3/14/2003<br>5/30/2003 NOI | - 1 SSO (2002)<br>- Same as complaint<br>- SSOs (2002)<br>- SSOs (1998–03) | LOW | - ACL Complaint<br>- ACL Settlement (" ")<br>- CDO<br>- Injunctive relief, etc. | HIGH |
| 9 | City of Pacifica | 8/24/2009 NOI<br>10/23/2009<br>4/25/2011<br>5/12/2011 | - SSOs (2004–09)<br>- SSOs (2004–09)<br>- Same as complaint<br>- SSOs (2004–09) | **NONE**<br>HIGH | - Injunctive relief, etc.<br>- ACL Complaint<br>- ACL Order♦ (" ")<br>- CDO | **NONE**<br>HIGH |
| 10 | City of Redding | 5/7/2012 NOI<br>8/7/2012<br>12/6/2012 | - SSOs (2007–12)<br>- SSOs (2007–12)<br>- Same as above | **NONE**<br>HIGH | - Injunctive relief, etc.<br>- ACL Order♦,stipulated<br>- ACL Order, adopted | **NONE**<br>LOW |
| 11 | Russian River County Sanitation District | 3/10/2006 NOI<br>11/14/2007 | - SSOs (2001–06)<br>- SSOs (2004–07) | **NONE**<br>MEDIUM | - Injunctive relief, etc.<br>- ACL Complaint | **NONE**<br>LOW |
| 12 | Salton Community Services District[487] | 11/3/2014<br>11/4/2014 NOI<br>3/12/2015 | - 1 SSO (2011)<br>- SSOs (2009–14)<br>- Same as complaint | LOW | - ACL Complaint<br>- Injunctive relief, etc.<br>- ACL Order♦ (" ") | LOW |
| 13 | City of San Bruno | 12/19/2009 NOI<br>2/16/2010<br>7/1/2011 | - SSOs (2004–09)<br>- SSOs (2004–09)<br>- Same as complaint | **NONE**<br>HIGH | - Injunctive relief, etc.<br>- ACL Complaint<br>- ACL Order♦ (" ") | **NONE**<br>HIGH |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 7/13/2011 | - SSOs | | - CDO | |
| 14 | Sanitary District #1 of Marin County | 12/20/2004 NOI<br>7/14/2006 | - SSOs (2000–04)<br>- 1 SSO (2005) | **NONE**<br>LOW | - Injunctive relief, etc.<br>- ACL Complaint♦ | **NONE**<br>LOW |
| 15 | City of Santa Rosa | 7/15/2004 NOI<br>9/13/2004 | - SSOs (2002–04)<br>- SSOs (2001–04) | **NONE**<br>HIGH | - Injunctive relief, etc.<br>- ACL Complaint | **NONE**<br>LOW |
| 16 | City of Sausalito | 8/16/2007 NOI<br>4/10/2008 | - SSOs (2004–07)<br>- SSOs (2004–08) | **NONE**<br>HIGH | - Injunctive relief, etc.<br>- EPA AO | **NONE**<br>HIGH |
| 17 | Sausalito-Marin City Sanitary District | 5/31/2007<br>7/5/2007 NOI<br>4/10/2008<br>2/23/2009<br>6/11/2009 | - SSOs (2004–06)<br>- SSOs (2002–07)<br>- SSOs (2004–08)<br>- 1 SSO (2009)<br>- 1 SSO (2008) | MEDIUM | - EPA AO<br>- Injunctive relief, etc.<br>- EPA AO<br>- CAO<br>- ACL Complaint | HIGH |
| 18 | City of Sebastopol | 3/6/2008<br>2/25/2010 NOI<br>9/9/2010 | - 2 SSOs (2006, 07)<br>- SSOs (2005–10)<br>- 1 SSO (2010) | LOW | - ACL Order♦ (*)<br>- Outstanding NOI<br>- ACL Complaint | LOW |
| 19 | Sonoma Valley County Sanitation District | 9/16/1997 NOI<br>11/14/1997<br>2/6/1998 | - SSOs (1992–97)<br>- SSOs (1994–97)<br>- Same as complaint | **NONE**<br>MEDIUM | - Injunctive relief, etc.<br>- ACL Complaint<br>- ACL Order (" ") | **NONE**<br>LOW |
| | | 1/13/2015 NOI<br>3/13/2015<br>3/15/2015<br>6/4/2015<br>6/15/2015 | - SSOs (2009–14)<br>- SSOs (2010–15)<br>- Same as above<br>- Same as above<br>- Same as above | **NONE**<br>HIGH | - Injunctive relief, etc.<br>- ACL Order♦,stipulated<br>- Tentative CDO<br>- ACL Order, adopted<br>- CDO | **NONE**<br>HIGH |
| 20 | City of Yreka | 3/25/2010<br>2/23/2012 NOI | - SSOs (2008–09)<br>- SSOs (2006–12) | LOW | - ACL Order♦ (*)<br>- Injunctive relief, etc. | LOW |

ACL Order♦ indicates that the settlement included a SEP or enhanced compliance project that addressed some aspect of collection system management or infrastructure (e.g., a private sewer lateral repair grant or loan program , particular sewer rehabilitation projects,etc.).

ACL Order (*) indicates that the order settled a complaint issued more than 2 years before the initiation of citizen action.

ACL Order (" ") indicates that the order settled a complaint mentioned above in the same cell.

ACL Order, stipulated indicates that no ACL complaint was issued regarding the SSO violations settled in the order.

ACL Order, adopted indicates a stipulated order that has gone through the public comment period and been adopted.

**Chapter 7 summary:**

- There are no publicly available sources of clear, consistent, long-term information about government enforcement related to SSOs, and assembling such data was beyond the scope of this project. Therefore, we were unable to compare government enforcement activity for targeted and untargeted collection systems.
- Since 2007, EPA issued 3 administrative orders (AOs) to 9 California collection system agencies, and EPA, state regulators, and citizen plaintiffs or interveners entered into consent decrees with (1) the City of San Diego and (2) East Bay Municipal Utility District and its 7 satellite collection system agencies.
- Formal state enforcement actions sought penalties much more frequently than injunctive relief:
  - From 1998 to February 2015, the State and Regional Boards issued about 155 administrative civil liability orders (ACLs), 33 cleanup and abatement orders (CAOs), and 18 cease and desist orders (CDOs) related at least in part to SSOs. These numbers likely include some level of redundancy.
  - From mid-2008 to mid-2014, enforcement actions involving penalties (at least 53 ACLs) were much more common than actions requiring injunctive relief (at least 6 CDOs and 2 CAOs). Again, these numbers may include some redundancy.
  - Judicial enforcement actions regarding SS Os by state regulators have been rare.
- 49% of targeted collection systems experienced no formal government SSO enforcement over the past two decades.
- 11% of targeted collection systems experienced joint citizen-government action without further citizen action. This was the case where the sole citizen enforcement action was intervention in a government lawsuit or a citizen suit with which a later-filed government lawsuit was consolidated.
- Overall, 40% of targeted collection systems received non-joint SSO-related government and citizen enforcement attention.
- 23% of targeted systems experienced government action within 2 years before or after initiation of non-joint citizen enforcement action, corresponding to 21 different citizen enforcement actions.
- Of these 21 citizen enforcement actions:
  - 57% were initiated before similarly timed government enforcement action.
  - Degree of overlap in violations addressed:
    - 29% were initiated at a time when there was a low degree of overlap in violations addressed by citizen and government action, while 14% were initiated when there was a medium degree of overlap in violations addressed.
    - Considering all government enforcement actions with 2 years before or after initiation of citizen enforcement, 38% had a low degree of overlap in violations addressed, 19% had a medium degree of overlap, and 43% had a high degree of overlap.
  - Degree of overlap in remedies sought:
    - 33% were initiated at a time when there was a low degree of overlap in the remedies sought, and 10% were initiated when there was a high degree of overlap in the remedies sought.
    - Considering all government enforcement actions with 2 years before or after initiation of citizen enforcement, 62% had a low degree of overlap in remedies sought, and 38% had a high degree of overlap.

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# CHAPTER 8 — Trends and variation in performance metrics for targeted and untargeted collection systems

We analyzed the relative performance of collection systems that were and were not the targets of citizen enforcement actions using a series of performance metrics for the time period from the beginning of reporting in 2007 through October 2015: number of SSOs, volume of SSOs, spill rate, and spill volume rate. Although only about 8 years of SSO reporting data have accumulated for Statewide Permit enrollees, we were able to identify some statewide and regional performance trends. This chapter summarizes those trends, building on the general statewide and regional trends described in **Chapter 1.B**.

## A. Acquisition of SSO and collection system data

SSO data reported by Statewide Permit enrollees, current as of December 18, 2015, were downloaded from the State Board's website as a tab-delimited text file (SSO Data Flat File: *SSO.txt*).[488] For each collection system, we analyzed data for SSOs reported as starting on or after[489] the date when the system was required to begin reporting under the Statewide Permit (see "Years of Observations," below) through October 31, 2015 (see **Part B.2** of this chapter, regarding reporting lag, below). The flat file contains basic information about each SSO event, such as its location, start and end dates, total volume, volume recovered, volume reaching surface water, category (see **Chapter 2.B.1.c**), and destination point. Fields for spill cause, response activity, and corrective action provide additional information about the SSO. We included only SSO reports identified as "certified" or "amended" in the "step" field in our analyses.

Collection system information for active Statewide Permit enrollees (n = 1,093) was downloaded from the State Board's website as a tab-delimited text file (SSO Data Flat File *Questionnaire.txt*), on June 8, 2015.[490] The file includes collection system length, amount of lateral responsibility, population served , and other information derived from the most recent responses to the Collection System Questionnaire.

## B. Methods used to characterize collection system performance

### 1. Equations for performance metrics

#### Spill rate (overall)

Spill rate is defined as the number of SSOs per 100 miles of sewer per year. We calculated the overall spill rate for the period of record for each collection system using the following equation:

$$\frac{!"!\#\$\&'()*+",--./}{!"!\#\$(0\$*/",/*1*+((\#0\&/3\$\#!*+\#\$/)} \square\ 100/\text{ years of observations}$$

Total number of SSOs: The total number of SSOs reported for each collection system was derived from the *SSO.txt* flat file.

Total miles of sewer: The total number of miles of sewer for each collection system were derived from the *Questionnaire.txt* flat file, last accessed on June 8, 2015. This includes all sewer mains and any portions of the sewer laterals for which the sanitation agency is responsible.

Years of Observations: The Statewide Permit required enrollees to begin reporting in phases. Enrollees in Regions 4, 8, and 9 were required to begin reporting on January 2, 2007; enrollees in Regions 1, 2, and 3 were required to begin reporting on May 2, 2007; and enrollees in Regions 5, 6, and 7 were required to begin reporting on September 2, 2007.[491] Therefore, we calculated the number of days from the date each enrollee was required to begin reporting through October 31, 2015. This number was divided by 365.25 days to



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convert the units to years, resulting in 8.830 years of observations for enrollees in Regions 4, 8, and 9; 8.501 years of observations for enrollees in Regions 1, 2, and 3; and 8.164 years of observations for enrollees in Regions 5, 6, and 7.

### Spill rate (monthly)

We also calculated spill rate on a monthly scale for individual collection systems and groups of collection systems (e.g., targeted and untargeted systems) in order to show changes over time using the following formula:

$$\frac{\&'\ (\ )*+\ ",\ --./\ 8\ '+0\&9\ (\ "\&!:;}{!"!\#\$\ (\ 0\$*/",\ /*1*+\ ((\ \#0\&/3\$\#!*+\#\$/)} \square\ 100 \square \frac{<=>\ 8\#?/}{\&'\ (\ )*+\ ",\ 8\#?/\ 0\&\ (\ "\&!:;}$$

Number of SSOs during month: The number of SSOs reported for each collection system each month was derived from the *SSO.txt* flat file.

Total miles of sewer: See description given for "spill rate (overall)," above.

Number of days in month: The number of days in a year divided by the number of days in the month serves to convert the monthly spill rate (number of SSOs per 100 miles of sewer per month) to units denominated in years (number of SSOs per 100 miles of sewer per year). The value of this fraction is very close to, but not equal to, 12 for all months. For example, it is slightly larger than 12 in February, and slightly smaller than 12 in months with 31 days, like January. The number of days in the first month of observations (January, May, or September of 2007) was adjusted to account for the fact that SSO Database reporting deadlines were the second day of that month (see "Years of observations," above).

### Spill volume rate (overall)

Spill volume rate is defined as the total volume of SSOs per 1,000 people served per year. We calculated the overall spill volume rate for the period of record for each collection system using the following equation:

$$\frac{!"!\#\$@"\$'\ (*\ ",\ --./}{\&'\ (\ )*+\ ",\ A*"A\$*\ \square\ \square@*8} \square\ 1000/\ \text{years of observations}$$

Total volume of SSOs: The total volume of SSOs reported for each collection system was derived from the *SSO.txt* flat file.

Number of people served: The number of people served for each collection system was derived from the *Questionnaire.txt* flat file, last accessed on June 8, 2015.

Years of observations: See description given for "spill rate (overall)," above.

### Spill volume rate (monthly)

We also calculated spill volume rate on a monthly scale for individual collection systems and groups of collection systems (e.g., targeted and untargeted systems) in order to show changes over time using the following formula:

$$\frac{@"\$'\ (*\ ",\ --./\ 8\ '+0\&9\ (\ "\&!:;}{\&'\ (\ )*+\ ",\ A*"A\$*\ /*+@*8} \square\ 1000* \frac{<=>\ 8\#?/}{\&'\ (\ )*+\ ",\ 8\#?/\ 0\&\ (\ "\&!:;}$$

Volume of SSOs during month: The volume of SSOs reported for each collection system each month was derived from the *SSO.txt* flat file.

Number of people served: See description given for "spill volume rate (overall)," above.

Number of days in month: See description given for "spill rate (monthly)," above.



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## 2. Notes on data limitations

### Early reported SSOs

Some collection systems reported SSOs that occurred before the Statewide Permit required them to begin reporting. Because we could not determine whether a system was fully or partially reporting prior to the official deadline, we did not include early reported SSOs in calculations of overall spill rate or spill volume rate.

### Reporting lag

Collection systems are not required to submit reports of SSOs immediately, so there is likely to be a lag between the date an SSO occurs and the date it appears in the database. Although enrollees must submit a draft report within 3 business days and a certified report within 15 days of becoming aware of a Category 1 or 2 SSO, they have 30 days after the end of the month in which a Category 3 SSO occurred to submit a certified report (no draft report is necessary).[492] For this reason, assuming full compliance with reporting deadlines, all Category 3 SSOs that occurred during a particular month may not be reflectedin the SSO database until the end of the following month. While some collection systems maycomplete their reporting for a particular month earlier, others may not finish reporting before the applicable deadline. Therefore, we eliminated data for November and December 2015 from our analysis of the SSO Data Flat File dated December 18, 2015

### Changes in collection system mileage and population served

We derived the total number of collection system miles and the population served from the June 8, 2015, *Questionnaire.txt* flat file. It is likely that mileage and population served have changed over the observation period for some collection systems.

### Problems differentiating SSOs that originated from laterals and mains

To analyze to what degree lateral responsibility affects spill rate, we had hoped to compare spill rates for SSOs caused by problems in sewer mains with spill rates for SSOs caused by problems in laterals. The SSO database does include a field for enrollees to indicate where the point of failure was in their system. However, for almost a quarter of the SSOs in the database, this field was left blank.[493] Additionally, where enrollees chose to enter "other" (~4% of SSOs in the database) and provide a further description, another category was frequently mentioned.

## 3. Notes on testing for potential explanatory variables

We attempted to test for statistically significant relationships betweencollection system performance metrics and other variables that might be able to explain some of the observed differences. Collection system information came from the *Questionnaire.txt* flat file. We tested the following variables:

- Operating budget per mile
- Capital expenditure budget per mile
- Percent of laterals in the system
- Age distribution of sewer mains
- Difference between peak wet weather and average dry weather flow
- Percent of system reported to be inaccessible
- Percent of system reported as cleaned or inspected
- Number of water crossings per mile of system

However, basic linear models showed little correlation between the variables tested and the number of SSOs, volume of SSOs, spill rate, or spill volume rate calculated over several different time periods. The only potentially strong correlation we found was between spill rate and the agedistribution of sewer mains (calculated as a weighted index). However, this correlation appeared to explain very little of the variation in spill rate across agencies.



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While qualitative descriptions of SSOs in the database provided reason to believe that pump station age might be highly correlated with spill volume rate, data quality issues prevented us from examining that variable.[494]

Other variables that might explain some of the variation in performance metrics between collection systems, like the proportions of different sewer pipe materials used in each collection system, were not captured in the Questionnaire data[495]

### The role of laterals

Given the incomplete state of the data and the difficulty in interpreting it (see **Part B.2** of this chapter, above), we were not able to provide separate spill metrics for SSOs caused by problems within laterals and mains. Instead, we attempted to gauge the role of laterals more indirectly. Based on anecdotal evidence from stakeholder interviews and basic engineering principles, we expected to find a positive correlation between the proportion of laterals maintained as part of a collection system and that system's overall spill rate. In other words, all other things being equal, for two systems of the same total (publicly owned) sewer mileage, we would expect the one with a higher proportion of laterals to have a higher spill rate because laterals are smaller diameter, more blockage- and damage-prone, pipes.

We separated collection systems into 5 system-size classes (<= 10 miles, 11 to 50 miles, 51 to 200 miles, 201 to 500 miles, and > 500 miles) and 4 percentage-lateral-ownership classes (<= 10%, 11 to 20%, 21 to 35%, and > 35%). We assigned the latter based on the distribution of collection systems that report responsibility for some mileage of laterals in their systems in the annual Statewide Permit Questionnaire. The majority of Statewide Permit enrollees (57%) reported no lateral responsibility, 26% reported responsibility for lower laterals, and 16% reported responsibility for upper and lower laterals. Systems with less than 10% laterals accounted for the substantial majority of SSOs.

We did not find a clear relationship between lateral responsibility and spill rate for the majority of class comparisons. The interquartile range and outlier spill rate values tended to be larger for smaller collection systems. By and large, median spill rate changed very little between collection system size classes or percentage-lateral-ownership classes. The exception was the 201-to-500-mile size class, within which the median spill rate for systems that include more than 20% laterals was greater than the 3rd quartile value for systems that include 20% or fewer laterals.

**Parts C.3** (**Figure 32**), **C.4** (**Figure 38**), and **C.5** (**Table 16**) of this chapter include further information related to laterals.



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**BOX 4.** A note on comparative performance metrics

Given large differences in collection system size and population served, both the number and the volume of SSOs can be difficult to compare across collection systems. Therefore, we also examined two metrics sometimes used to compare relative system performance—spill rate and spill volume rate. Arguably, neither metric is as tightly coupled with direct water quality impacts as spill volume. Nonetheless, because they take infrastructure scale and service responsibility at least partially into account, they allow potentially more useful comparisons of SSO management success. We emphasize spill rate as better able to resolve trends in system performance, since it is less susceptible to large month-to-month swings in magnitude driven by large-volume SSOs.

When comparing collection system performance, it is important to recognize that apples-to-apples comparisons can be difficult to make because many variables may influence collection system performance. These include collection system size[496] and population served, but also variables like collection system layout and geography; connectivity with other collection systems; sewer pipe age, diameter, and composition; and precipitation or other aspects of climate. Therefore, in addition to statewide trends, we analyze spill rate and spill volume rate by region and by collection system size, which generally correlates with the size of the population served.

The type of sewer is also important: laterals are smaller diameter pipes that are more prone to SSOs, so collection systems with more laterals may experience higher spill rates. We had hoped to calculate separate performance metrics by separating SSOs originating in laterals from those originating in mains, but data limitations prevented us from doing so (see description above in **Parts B.2 and B.3** of this chapter). Although we were unable to address them fully, **Parts C.3** (**Figure 32**), **C.4** (**Figure 38**), and **C.5** (**Table 16**) of this chapter include information related to laterals.

Other performance metrics and ranking methods may be useful. For example, for the most recent (2013–14) SSO Reduction Program Annual Compliance Report, State Board staff used a composite "spill ranking tool" to identify the top 20 collection systems "most in need of compliance and enforcement attention."[497] The index incorporates weighted percentage factors based on spill rate, spill volume rate, number of SSOs > than 50,000 gallons, number of Category 1 SSOs, and percent SSO volume that reached surface waters.[498] Unfortunately, the Report provided no detail about how weighting was accomplished or the equation for the final ranking score, so we were unable to recreate the analysis for all collection systems.

## C. Results

### 1. Number of SSOs and spill rate

#### Statewide — All SSOs

As a group, the 88 targeted collection systems reported more SSOs overall during the period of record, September 2007 to October 2015, than the 1,005 untargeted systems combined (**Figure 17A**). Targeted systems reported 60% of all SSOs during this time period. When one outlier (a very large collection system with a high proportion of lateral ownership and a low percentage of SSOs reported as reaching surface water) was excluded, the remaining 87 targeted systems reported 32% of all SSOs during the time period. The figures below plot targeted systems in two ways: including (n = 88) and excluding (n = 87) the outlier system.

Targeted systems (n = 88 and n = 87) experienced higher spill rates (numbers of SSOs per 100 miles of collection system per year) than untargeted systems over the period of record (**Figure 18A**).

Numbers of SSOs reported and spill rate decreased for both targeted (n = 88 and n = 87) and untargeted systems over the period of record, but decreased more for targeted systems (n = 88 and n = 87) than for untargeted systems (**Figures 17A and 18A**). From 2008 to 2012, both targeted and untargeted systems showed overall trends of decreasing SSO numbers and spill rate, but the rate of decrease was higher for



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targeted systems. From 2012 to 2015, the overall trend for untargeted systems was fairly flat, while targeted systems appear to have demonstrated continued, but less rapid, reductions. Over the past 4 years, minimum dry-season SSO numbers and spill rates have generally continued to decrease for targeted systems, appear to have actually increased slightly for untargeted systems through 2014 before decreasing again in 2015.

Both the numbers of SSOs reported and the spill rate for targeted (n = 88 and n = 87) and untargeted collection systems show a strong seasonal cycle (**Figures 17A and 18A**), likely due to increased inflow and infiltration during the wetter winter season. Unusually dry conditions over the past 4 years may have driven some reductions in SSOs due to reduced inflow and infiltration. For both targeted and untargeted systems, peak wet-season spill rates have been lower during this period.

### Statewide — SSOs reported as reaching surface water

Targeted systems (n = 88) reported a substantial portion of the SSOs reaching surface water between September 2007 and October 2015 (**Figure 17B**). Targeted systems reported 42% of these SSOs , and untargeted systems reported 58%. When the outlier collection system mentioned above was excluded, targeted systems (n = 87) still reported 40% of the SSOs reaching surface water.

Targeted systems (n = 88 and n = 87) experienced higher spill rates for SSOs reported as reaching surface water than untargeted systems over the period of record (**Figure 18B**).

Again, a seasonal pattern is present, with more SSOs reaching surface water reported and higher related spill rates during the wetter winter season and fewer SSOs reaching surface water reported and lower related spill rates during the drier summer season (**Figures 17B and 18B**). Targeted and untargeted systems reported similar numbers of SSOs reaching surface water during some winter months, but targeted systems reported fewer SSOs reaching surface water during most summer months.



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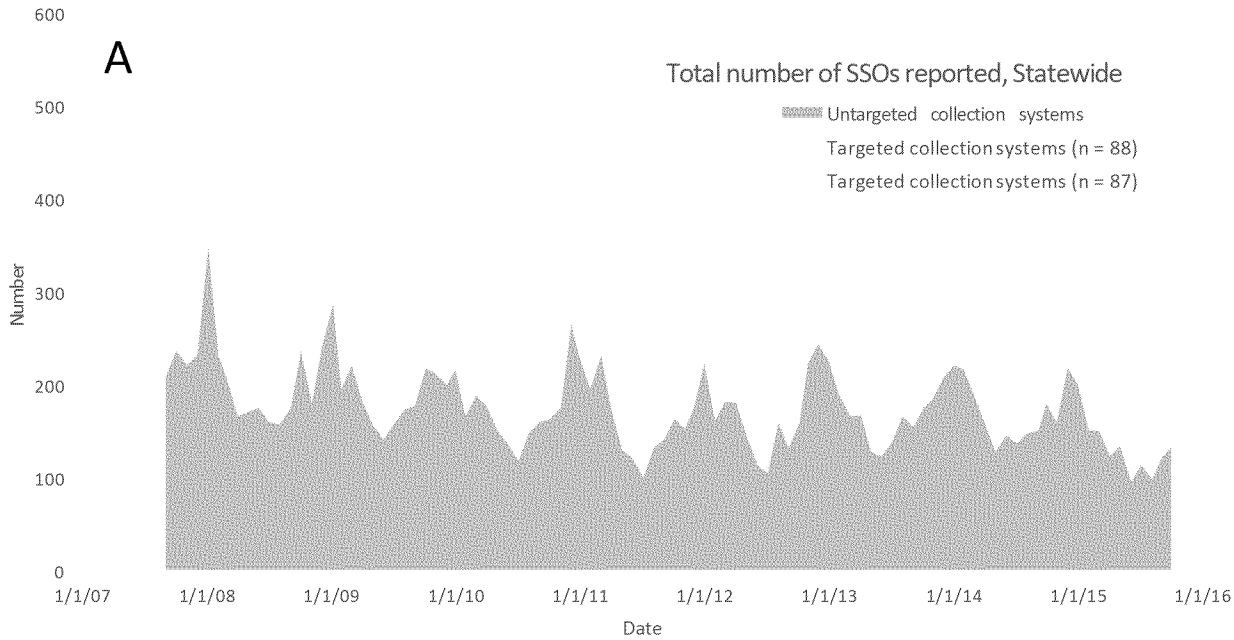
**Figure 17. Trends in the number of SSOs reported for targeted and untargeted systems, statewide.** Charts plot (**A**) the total number of SSOs reported and (**B**) the total number of SSOs reported as reaching surface water during each month between September 2007 and October 2015. Targeted systems are shown both including (n = 88) and excluding (n = 87) one outlier collection system (described, above). (**A**) Despite comprising just 8% of collection systems, targeted systems (n = 88) reported more SSOs than untargeted systems. Even with the very large outlier system removed, targeted systems (n = 87) reported as many SSOs as untargeted systems at the beginning of the period of record and lower, but still substantial, numbers toward the end of the period. Over the period of record, there was an overall downward trend in the number of SSOs for each group, with targeted systems (n = 88 and n = 87) showing greater reductions than untargeted systems. (**B**) Targeted systems and untargeted systems reported similar numbers of SSOs reaching surface water during some winter months, but targeted systems reported fewer SSOs reaching surface water during most summer months.



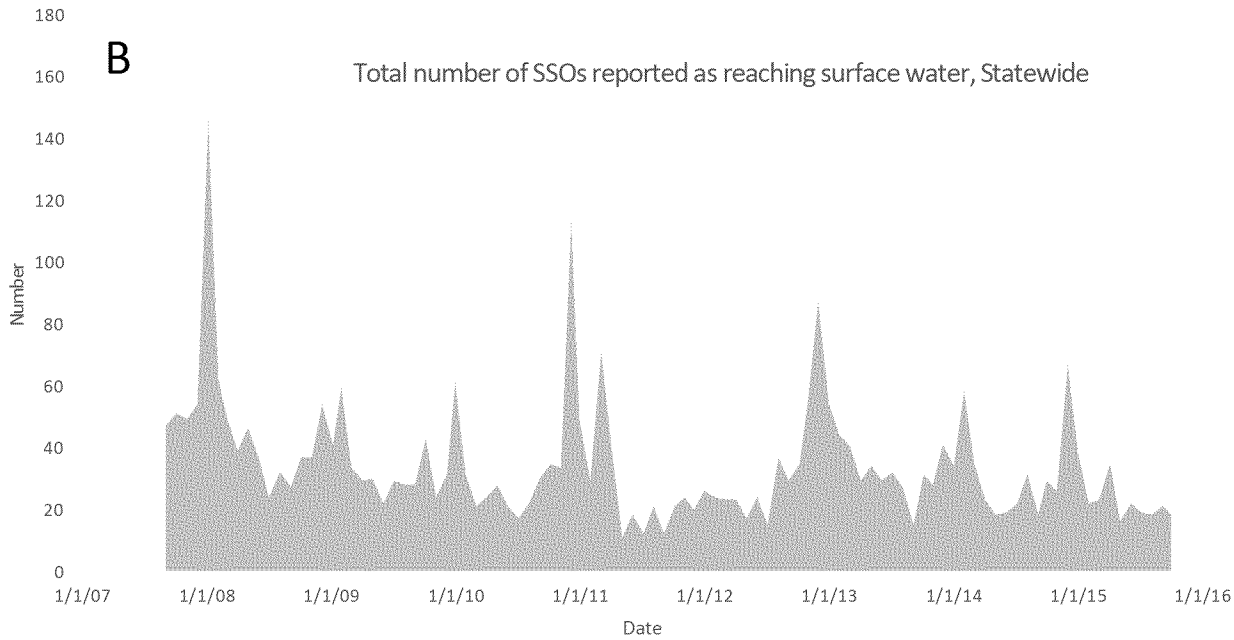



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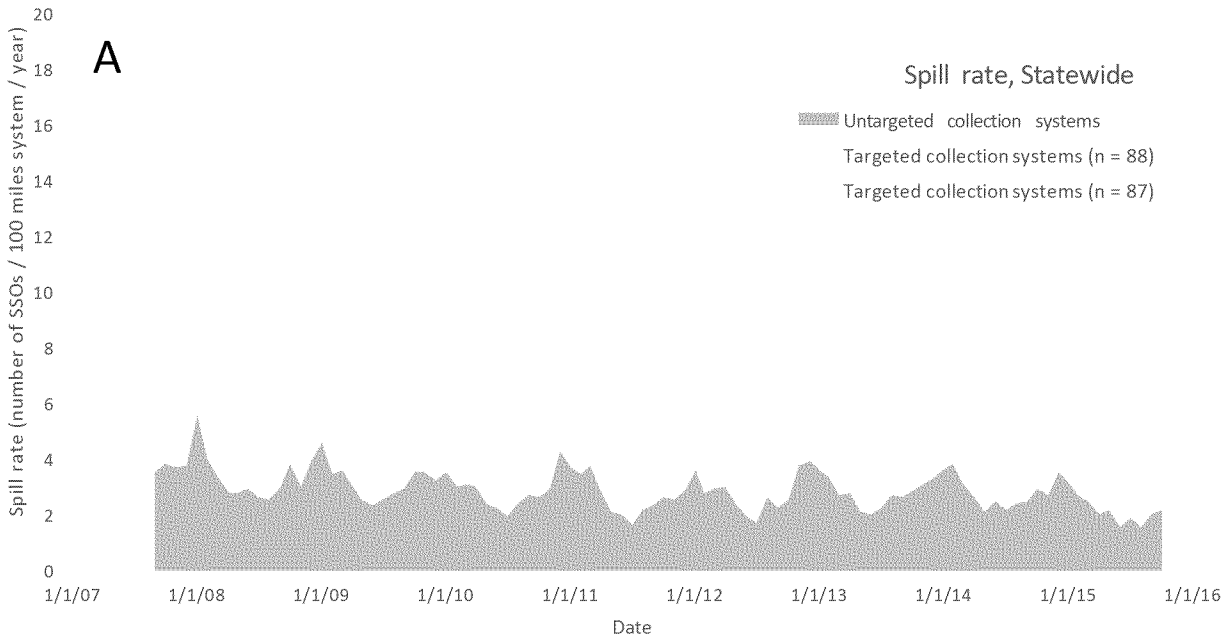
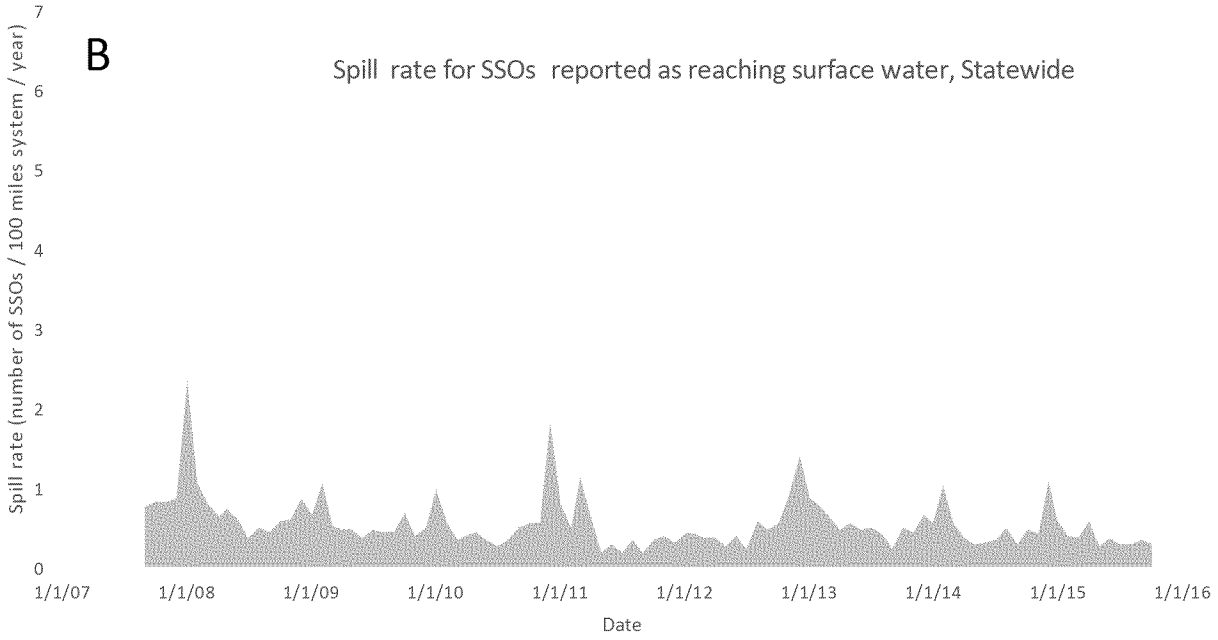
**Figure 18. Trends in the spill rate calculated for targeted and untargeted systems, statewide.** Charts plot (**A**) spill rate and (**B**) spill rate for SSOs reported as reaching surface water during each month between September 2007 and October 2015. Targeted systems are shown both including (n = 88) and excluding (n = 87) one outlier collection system (described above). (**A**) Targeted systems (n = 88 and n = 87) had higher overall spill rates than untargeted systems. Over the period of record, there was an overall downward trend in spill rate for each group, with targeted systems (n = 88 and n = 87) showing greater reductions than untargeted systems. (**B**) Targeted systems generally had higher spill rates for SSOs reaching surface water than untargeted systems.



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Whether the relationships we identify here represent correlation alone, causation, or a mixture of the two is not clear based on the data we analyzed for this report (see discussion, **Box 5**, and **Chapter 10**).

**BOX 5.** Correlation vs. causation: A tough nut to crack

The differences between targeted and untargeted system trends suggest that citizen enforcement action may have been a contributing factor in the observed performance changes, but this correlation could be explained in other ways. For example, collection systems experiencing higher numbers of SSOs and higher spill rates at the beginning of the period (which were more likely to be targeted), when the Statewide Permit was introduced, may have had more room to improve by complying with the Permit than other systems (which were also less likely to be target ed). Many other factors may have contributed SSO and spill rate changes, including changes in collection system flows due to weather or water use changes and changes in collection system management practices made on a voluntary basis, in response to the Statewide Permit, or as a result of informal or formal government enforcement pressures (see **Chapter 10** for more).

Because this method of analysis looks at average performance across subgroups of collection systems, it does not easily lend itself to comparison with the dates of particular citizen enforcement actions. See **Chapter 9** for an analysis of changes in collection system performance after the initiation of citizen enforcement.

### Regional trends — All SSOs

Regional trends in the number of SSOs and spill rate were more complex (**Figures 19 and 21**).

Factors that make interpreting regional data more challenging include the low numbers and small percentages of collection systems targeted in most regions, as well as the early timing of some enforcement actions (prior to the window of record here).

Targeted collection systems were responsible for more SSOs and demonstrated more rapid decreases in total numbers of SSOs compared with untargeted systems in Regions 1, 2, and 5, the most heavily targeted regions (**Figure 19**). Region 9 showed a similar trend.

Statewide spill rate trends were echoed in Regions 2, 3, 5, and 9, representing 64% of targeted collection systems (**Figure 21**). Four regions, representing 36% of targeted collection systems departed from the overall trend in various ways. In most regions, targeted systems generally had higher spill rates than untargeted systems.

### Regional trends — SSOs reported as reaching surface water

As a group, targeted systems generally reported more SSOs reaching surface water than untargeted systems in Regions 1, 2, and 9 (**Figure 20**). In Regions 5 and 7, targeted systems sometimes reported more and sometimes reported less than untargeted systems. In Regions 3 and 8, targeted systems consistently reported fewer SSOs reaching surface water than untargeted systems.

Targeted systems generally had higher spill rates for SSOs reported as reaching surface water than untargeted systems in Regions 1, 2, 3, 5, 8, and 9 (**Figure 22**).



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**Figure 19. Trends in the number of SSOs reported for targeted and untargeted collection systems, by region.**

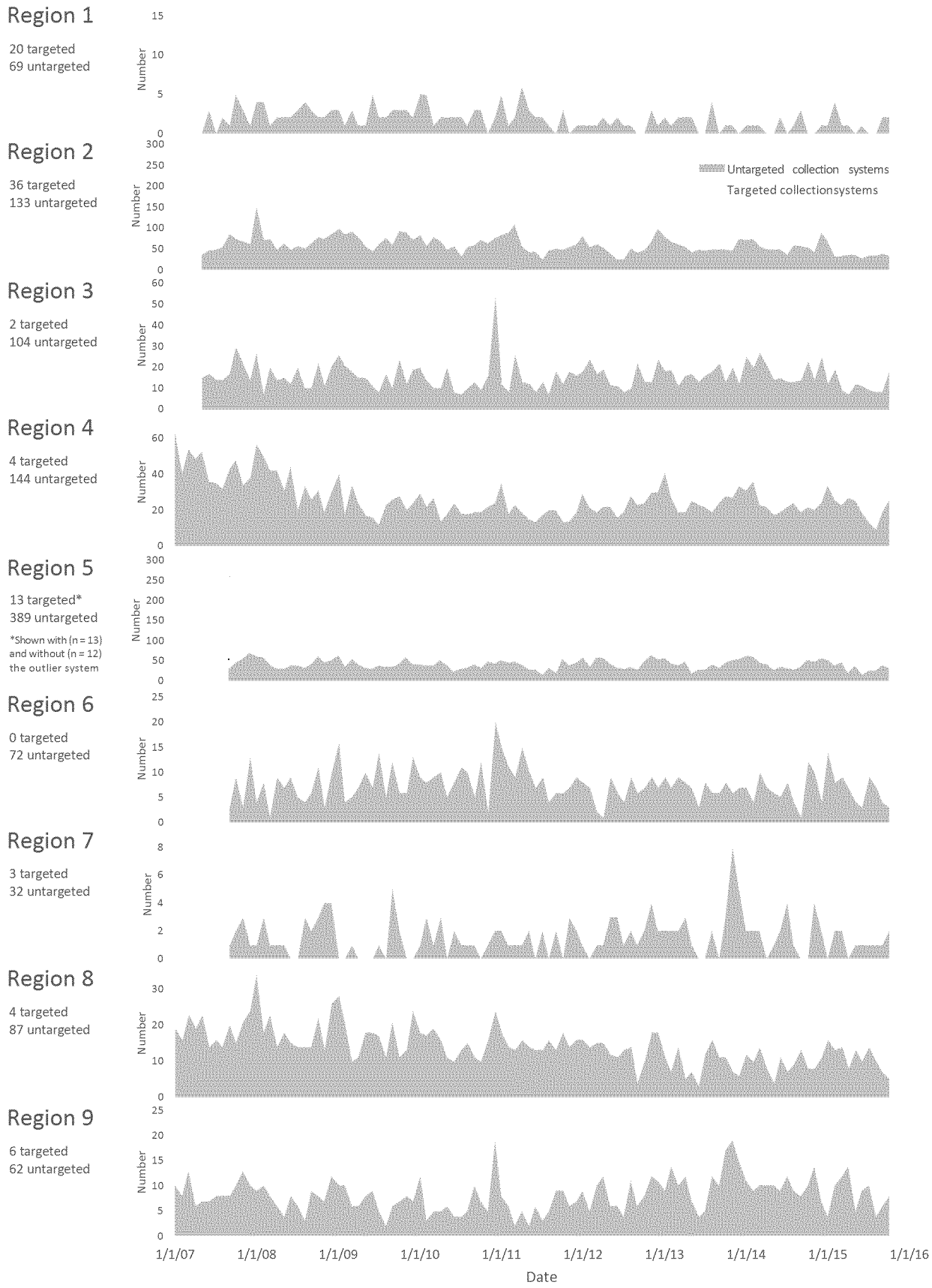




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**Figure 20. Trends in the number of SSOs reported as reaching surface water for targeted and untargeted collection systems, by region.**

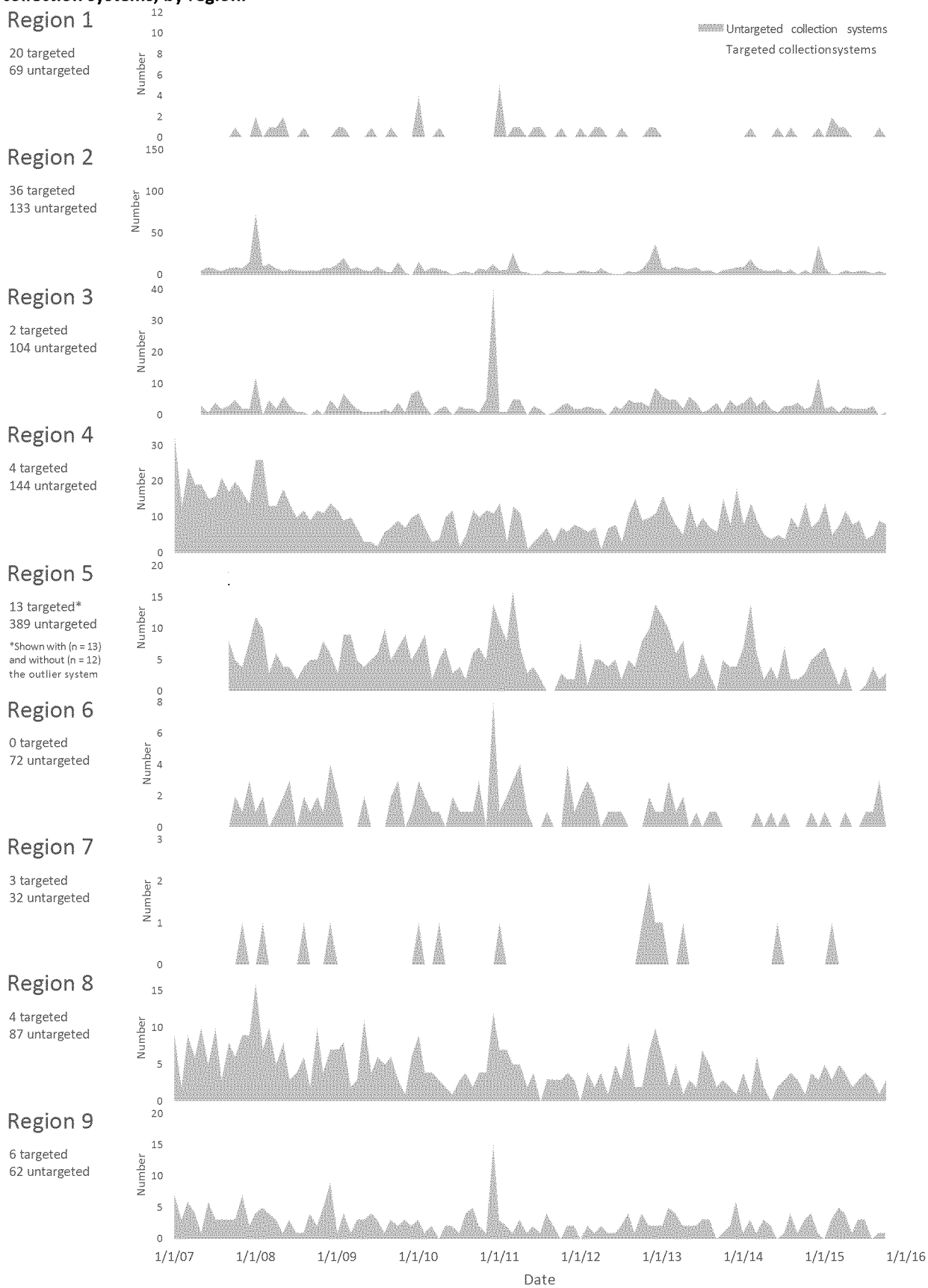




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**Figure 21. Trends in the spill rate calculated for targeted and untargeted collection systems, by region.**

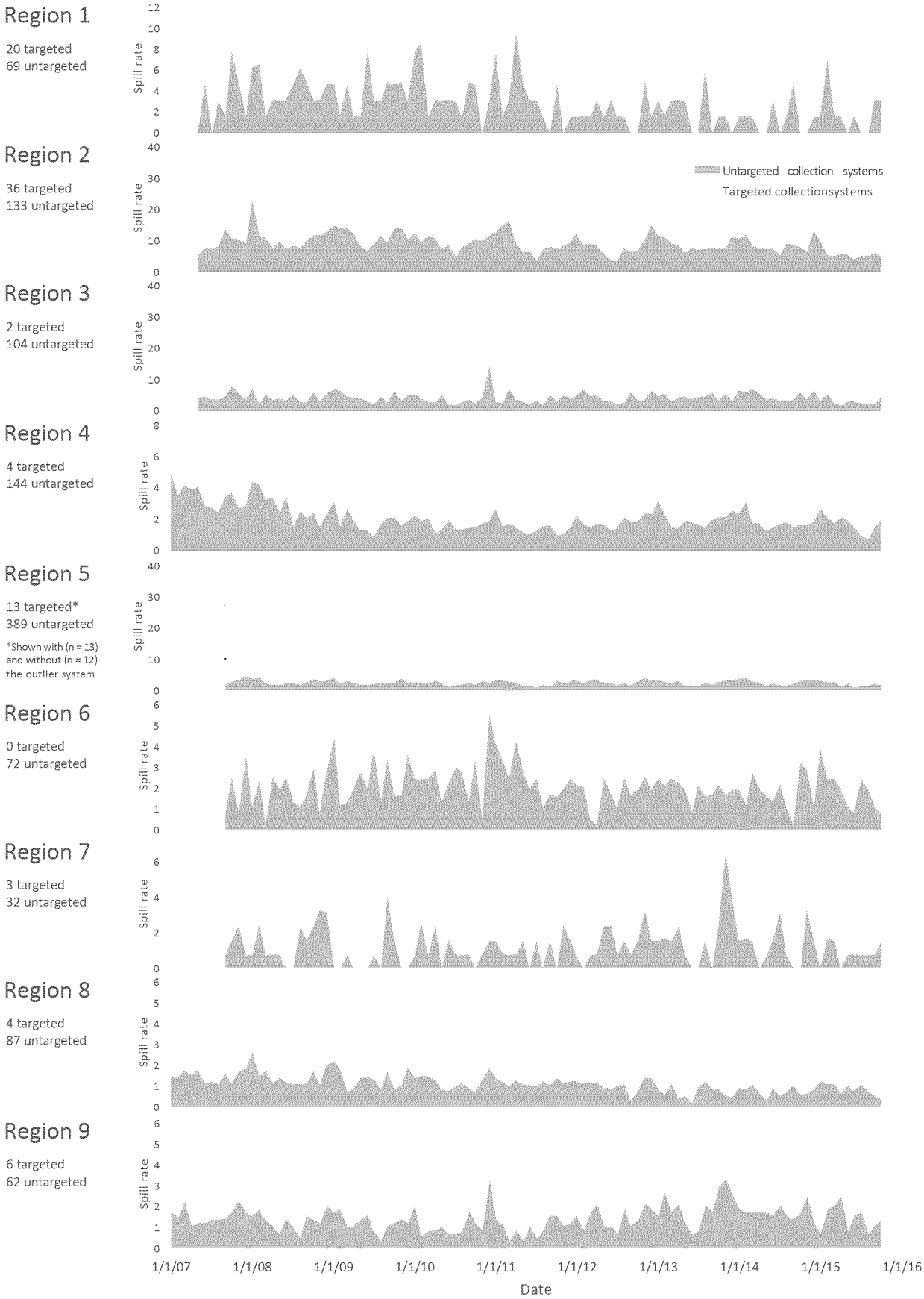




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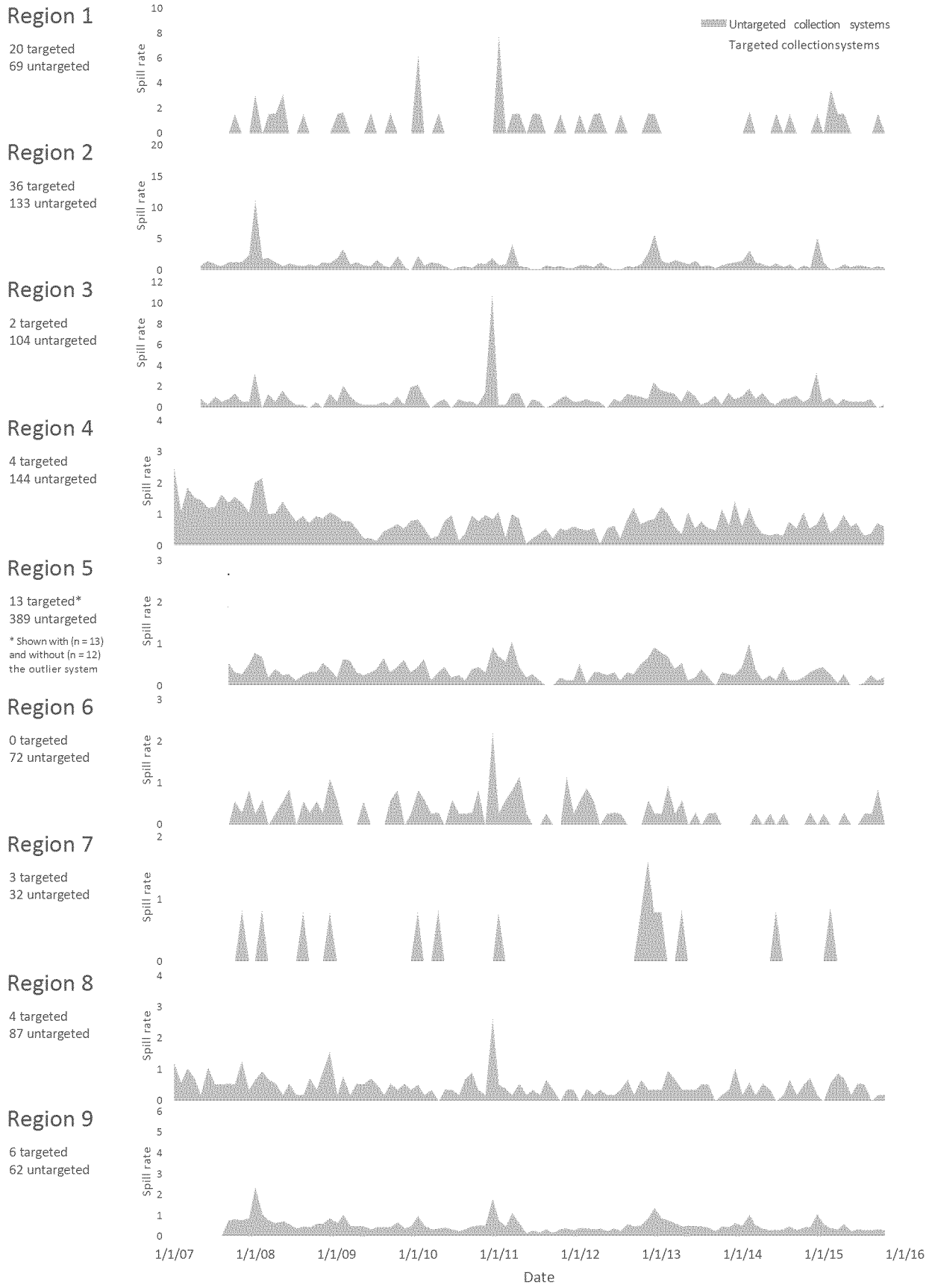
**Figure 22. Trends in the spill rate calculated for SSOs reaching surface water for targeted and untargeted collection systems, by region.**



**BOX 6.** Non-reporting, underreporting, and other reporting data problems

There are undoubtedly some inaccuracies in the SSO reporting required by the Statewide Permit. Regulators have stated that enrollees sometimes fail to report SSOs or to characterize them accurately, for example, by underestimating their volume.[499] Many citizen enforcement actions include allegations (which may or may not be correct) that collection systems have failed to report all SSOs, have underestimated SSO duration or volume, or have underestimated the number and volume of SSOs that reach state and federal waters. The extent of reporting problems is not well understood. In 2010, the State Board stated that "[c]ompliance rate information for collection systems is not reliable at this point."[500] Changes in reporting requirements (see **Chapter 2.B.1.c**), database entry forms, and database management also play a roll in data inconsistencies.

Submission of spill/no spill reports

From mid-2007 to mid-2014, the average annual proportion of Statewide Permit enrollees submitting monthly reports (either spill or no-spill reports) increased from 53% to 96%.[501]

Collection systems reporting no SSOs

More than 20% of collection systems enrolled under the Statewide Permit have never reported an SSO during the 2007 to 2015 period of record.[502] Of these, most (~70%) maintain 10 or fewer miles of collection system, but the largest maintains 217 miles of sewer. Both collection system-agency and citizen-group representatives we interviewed were skeptical of these "zero spill" claims. During fiscal year 2013–2014, less than half (45%) of all enrollees reported one or more SSOs; of the remaining 55% that did not report an SSO, 9% (54 enrollees) were identified as missing some (4%) or all (5%) monthly reporting requirements or having reporting errors (<1%, 1 enrollee).[503] While inspections/audits could help identify reporting omissions and other inaccuracies, the inspection rate is relatively low —18 collection systems were inspected overall during 2013–14.[504]

SSO volume estimates

Spill volume is rarely known with complete confidence. Although in some cases volume can be measured or estimated directly, it is generally estimated by multiplying estimated flow rate by the duration of the flow.[505] There are many complicating factors: when an SSO began may be difficult to determine since SSOs aren't always noticed immediately; particular volume estimation methods don 't work well in all circumstances; and flow rate can vary over the course of an SSO.[506] More than one-third of the certified reports in the SSO Database use the time the agency was notified as the SSO start time. Volume and/or flow rate can be estimated in various ways, including by visual estimation of the spill amount present on an impermeable surface, by multiplying the number of connections upstream of the blockage point by the estimated average per-connection flow during the SSO, by comparison with a manhole overflow picture chart, by flow metering, or by measuring the amount recovered.[507] Response personnel need training to ensure that they can stop and clean up an SSO while also collecting data that allow it to be properly characterized, reported, and understood.

SSO Database quality control issues

In working with the SSO Database, we noticed a number of quality control issues. These included incorrectly entered SSO start, agency notification, operator arrival, and SSO end dates and times. For example, out of 44,900 certified or amended SSO reports in the database as of December 18, 2015:

- **16,511** reports appear to show that the SSO started at the same moment the agency was notified about it, and **706** appear to show that the SSO started after the agency was notified about it;
- **6,555** reports appear to show that the responder arrived at the same moment the SSO ended;
- **1,778** reports appear to show that the responder arrived at the same moment the SSO started, and **497** appear to show that the responder arrived before the SSO started;
- **757** reports appear to show that the responder arrived before the agency was notified of the SSO, and **39** appear to show that the responder arrived more than a week after notification occurred;

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- **505** reports appear to show the SSO ending before it started, and **708** appear to show the SSO ending at the same moment it started.

Presumably most of these errors were made during database record entry and were not incorporated into SSO duration and volume calculations (made prior to entry). State Board staff told us they have adjusted their data entry system to reduce the likelihood of these sorts of errors occurring. Nonetheless, it is important to keep in mind that the database is imperfect in evaluating what conclusions can be drawn from it.

SSOs reaching surface waters or MS4s

Enrollees may differ in how they estimate amounts spilled directly to surface waters or spilled to storm sewers. For example, where an SSO enters an MS4 and is not fully recovered but does not appear to exit (or the agency estimates that the quantity was too small to flow all the way to surface water), some agencies might report the SSO as Category 1 while others might not. In fact, in some cases, an agency's call out reports or internal spreadsheets, obtained through Public Records Act requests, may appear to contradict their public SSO reports.[508]

## 2. Volume of SSOs and spill volume rate

Because large SSOs strongly influence spill volume and spill volume rate (volume of SSOs per1,000 people served by the system per year), these metrics can fluctuate significantly over time. Therefore, we plot both using a log scale to allow more useful visual comparisons.

### Statewide — All SSOs

SSOs reported by targeted collection systems accounted for a substantial portion of the total SSO volume reported during the period of record, September 2007 to October 2015 (**Figure 23A**). Targeted systems (n = 88) reported 43% of the total SSO volume during the whole time period, while untargeted systems accounted for 57%. When the outlier collection system mentioned above in **Part C.1** of this chapter was excluded, targeted systems (n = 87) still reported 42% of the SSO volume reaching surface water.

Targeted systems (n = 88 and n = 87) generally experienced higher spill volume rates (than untargeted systems over the period of record (**Figure 24A**).

As for SSO numbers and spill rate, SSO volume and spill volume rate show a strong seasonal pattern (**Figures 23A and 24A**). Dry-season minimum volumes reported by targeted collection systems increased from 2008 to 2012, then decreased in mid-2013, subsequently rising slightly in 2014 and 2015 (**Figure 23A**). Wet-season maximum volumes for targeted systems were lower in 2008–09, 2012–13, and 2013–14, probably related to reduced inflow and infiltration during these drought periods. Dry-season minimum volumes reported by untargeted collection systems were lowest from 2009 to 2012 and have since increased. Wet-season maximum volumes for untargeted systems were lower in 2008–09, 2011–12, and 2013–14. Similar trends were seen for spill volume rate (**Figure 24A**).

Spikes in statewide spill volume and spill volume rate have often been driven by a few extremely large spills. For example, the highest monthly SSO volume (58,391,335 gallons) and spill volume rate (16,390 gallons per 1,000 people served per year) during the period of record were heavily influenced by the largest single SSO recorded in the database. That SSO occurred in December 2010, when nearly 43 million gallons of wastewater discharged from a storm-damaged sewer interceptor under the Mojave River belonging to an untargeted collection system.[509]



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### Statewide — SSO volume reported as reaching surface water

Targeted systems (n = 88) reported substantial SSO volumes reaching surface water between September 2007 and October 2015 (**Figure 23B**). Targeted systems reported 47% of the total volume over this time period, while untargeted systems reported 53%. When the outlier collection system mentioned above was excluded, targeted systems (n = 87) still reported 46% of the SSOs volume reaching surface water.

Targeted systems (n = 88 and n = 87) generally experienced higher spill volume rates for SSO volumes reaching surface water than untargeted systems over the period of record (**Figure 24B**).

Again, a seasonal pattern is present, with more SSO volume reaching surface water reported and higher related spill volume rates during the wetter winter season and smaller volumes reaching surface water reported and lower related spill volume rates during the drier summer season (**Figures 23B and 24B**).



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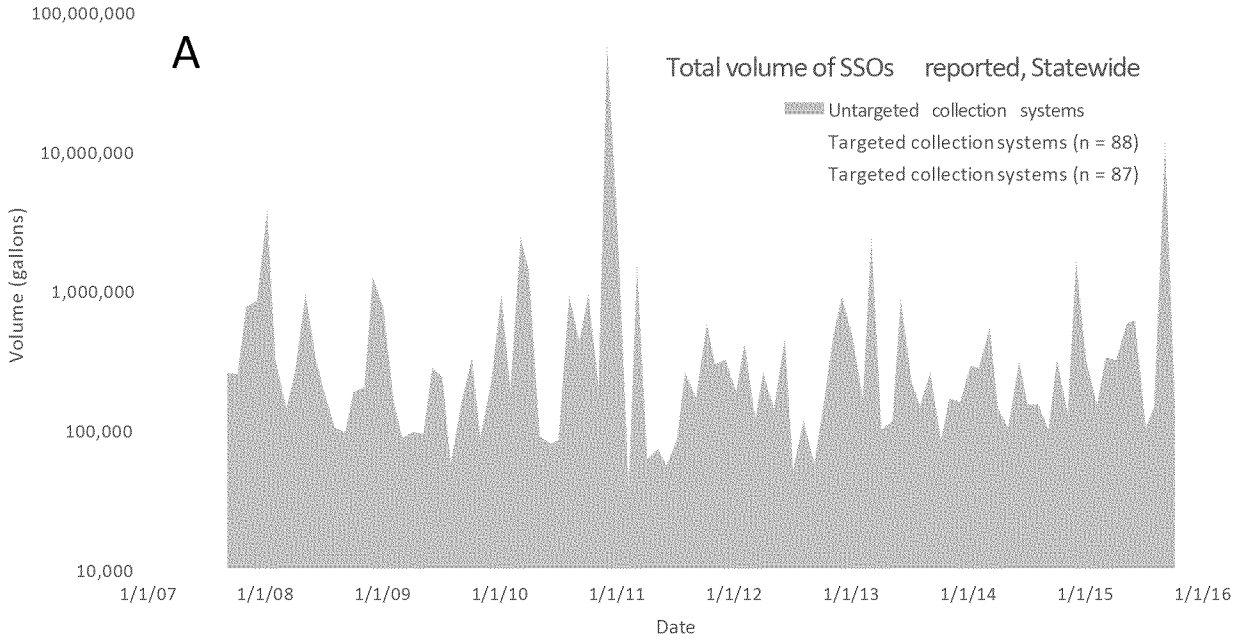
**Figure 23. Trends in the volume of SSOs reported for targeted and untargeted systems, statewide**. Charts plot (**A**) the total volume of SSOs reported and (**B**) the total SSO volume reported as reaching surface water during each month between September 2007 and October 2015. Due to the large spread of the data, a log scale is used. Targeted systems are shown both including (n = 88) and excluding (n = 87) one outlier collection system (described, above in **Part C.1** of this chapter). (**A**) Targeted systems reported larger volumes of SSOs than untargeted systems during some months and smaller volumes during others. (**B**) Targeted systems reported larger SSO volumes as reaching surface water than untargeted systems during some months and smaller volumes during others.



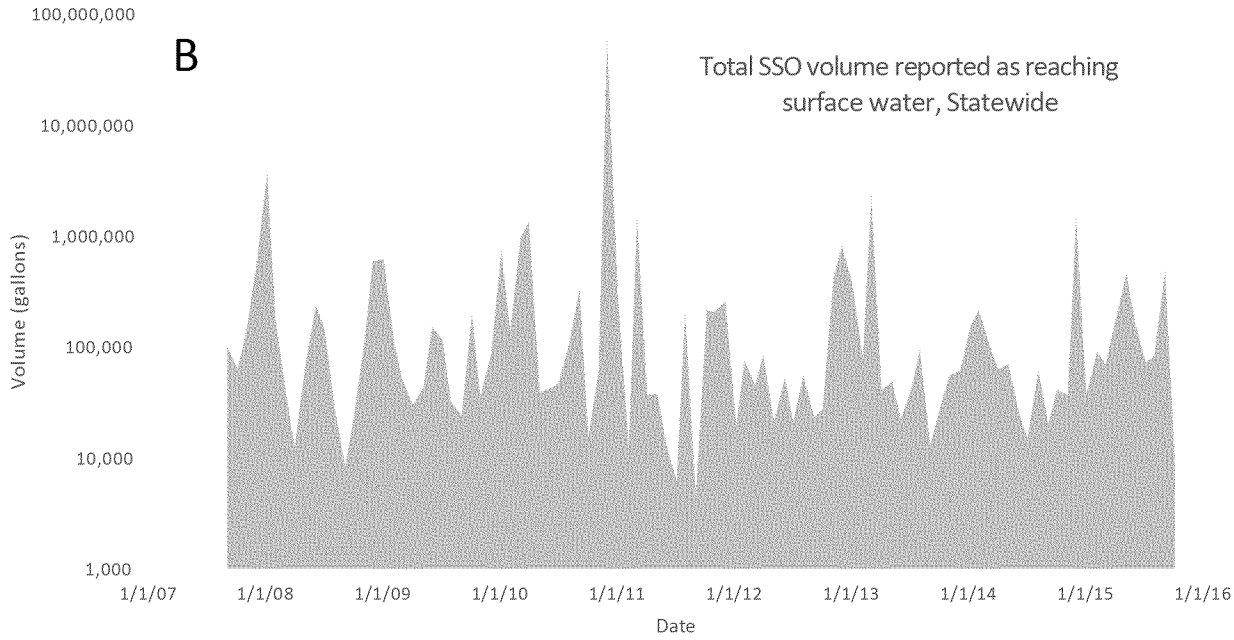






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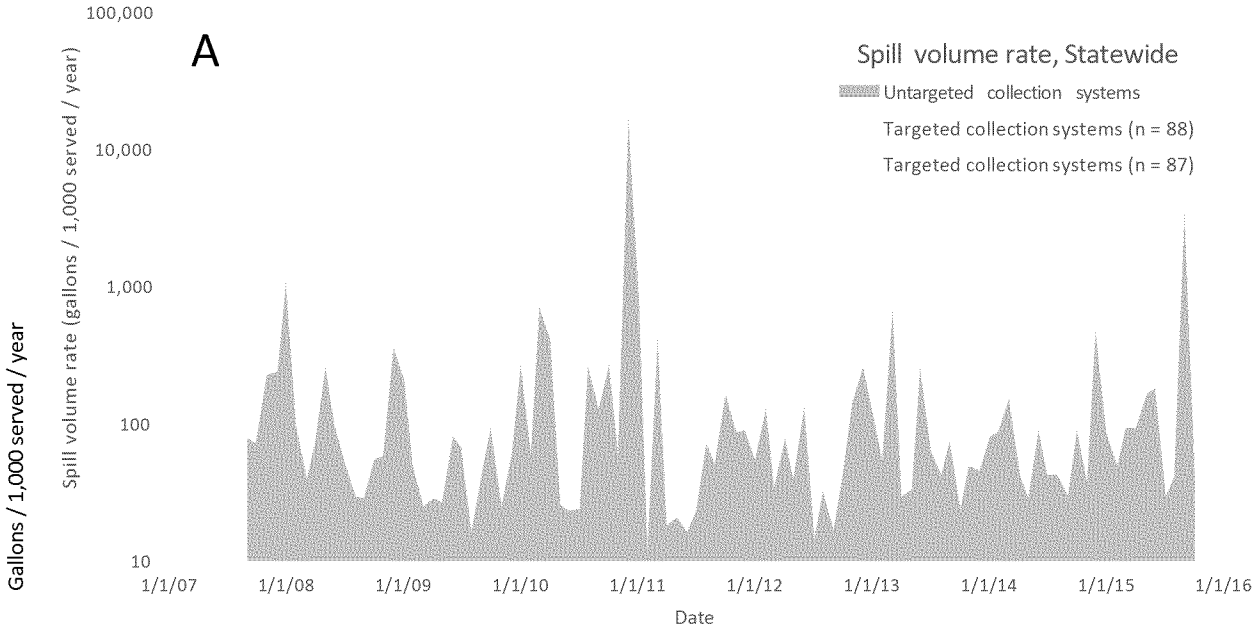
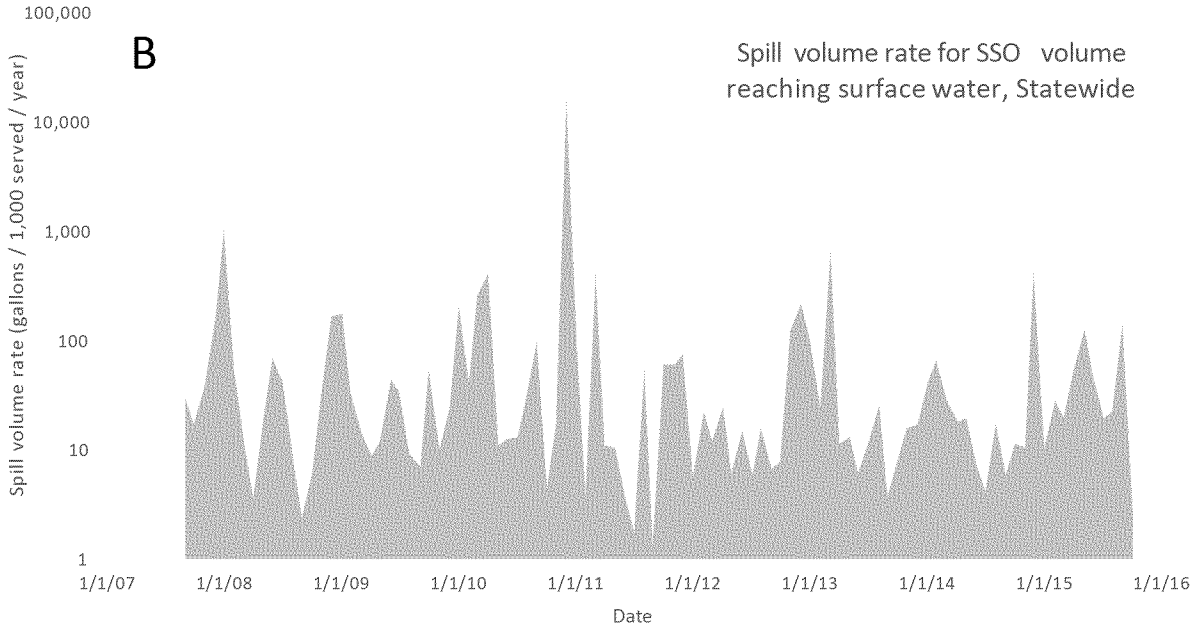
**Figure 24. Trends in spill volume rate calculated for targeted and untargeted systems, statewide**. Charts plot (**A**) spill volume rate and (**B**) spill volume rate for the SSO volume reported as reaching surface water during each month between September 2007 and October 2015. Due to the large spread of the data, a log scale is used. Targeted systems are shown both including (n = 88) and excluding (n = 87) one outlier collection system (described, above in **Part C.1** of this chapter). (**A**) Targeted systems reported higher spill volume rates than untargeted systems during most months. (**B**) Targeted systems reported higher spill volume rates for SSO volume reaching surface water than untargeted systems during most months.



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### Regional trends — All SSOs

Similar to the numbers of SSOs and spill rate, regional trends in spill volume andspill volume rate were more complex than the statewide trends (**Figures 25 and 27**).

Targeted collection systems were generally responsible for larger volumes of SSOs in Regions 1 and 2, similar volumes in Regions 5 and 9, and smaller volumes in Regions 3, 4, and 8 (**Figure 25**). In Region 7 targeted systems sometimes reported larger and sometimes reported smaller volumes than untargeted systems, but reported most of the very large SSOs.

Targeted collection systems had generally higher spill volume rates than untargeted systems in Regions 1, 2, 4, 5, 7, and 9 (**Figure 27**).

### Regional trends — SSO volume reported as reaching surface water

Targeted collection systems were generally responsible for larger SSO volumes reaching surface water in Regions 1 and 2, similar volumes in Regions 5 and 9, and smaller volumes in Regions 3, 4, and 8 (**Figure 26**). In Region 7 targeted systems sometimes reported larger and sometimes reported smaller volumes than untargeted systems. In Regions 5, 8, and 9 volumes of SSOs reaching surface water have generally been lower over the past year or two .

Targeted collection systems had generally higher spill volume rates for SSO volumes reaching surface water than untargeted systems in Regions 1, 2, 5, 7, and 9 (**Figure 28**). As for SSO volume reaching surface water, spill volume rates for SSO volumes reaching surface water have generally been lower in Regions 5, 8, and 9 over the recent past.



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**Figure 25. Trends in the volume of SSOs reported for targeted and untargeted collection systems, by region.** Plotted on a log scale.

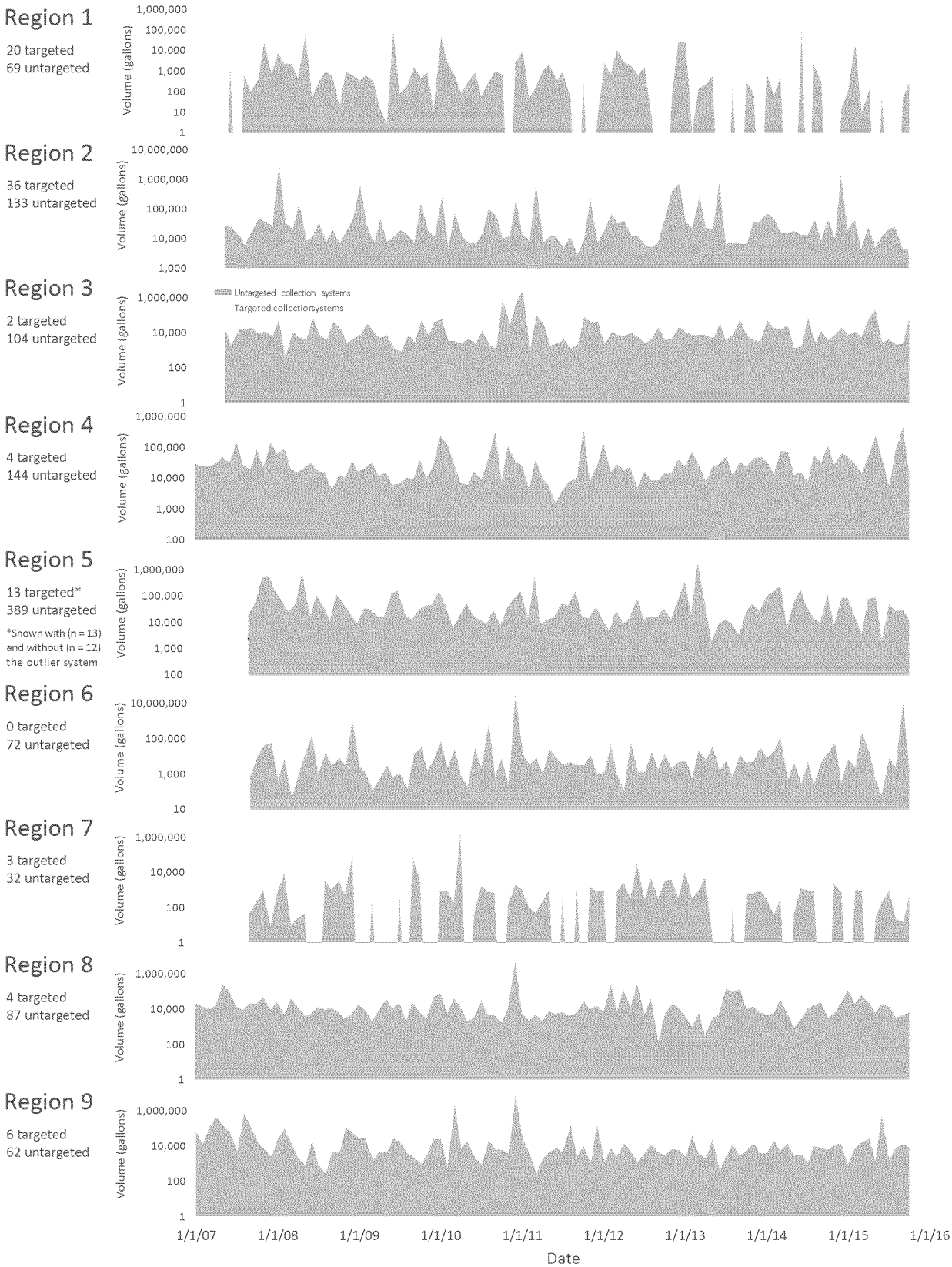




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**Figure 26. Trends in the SSO volume reported as reaching surface water for targeted and untargeted collection systems, by region.** Plotted on a log scale.

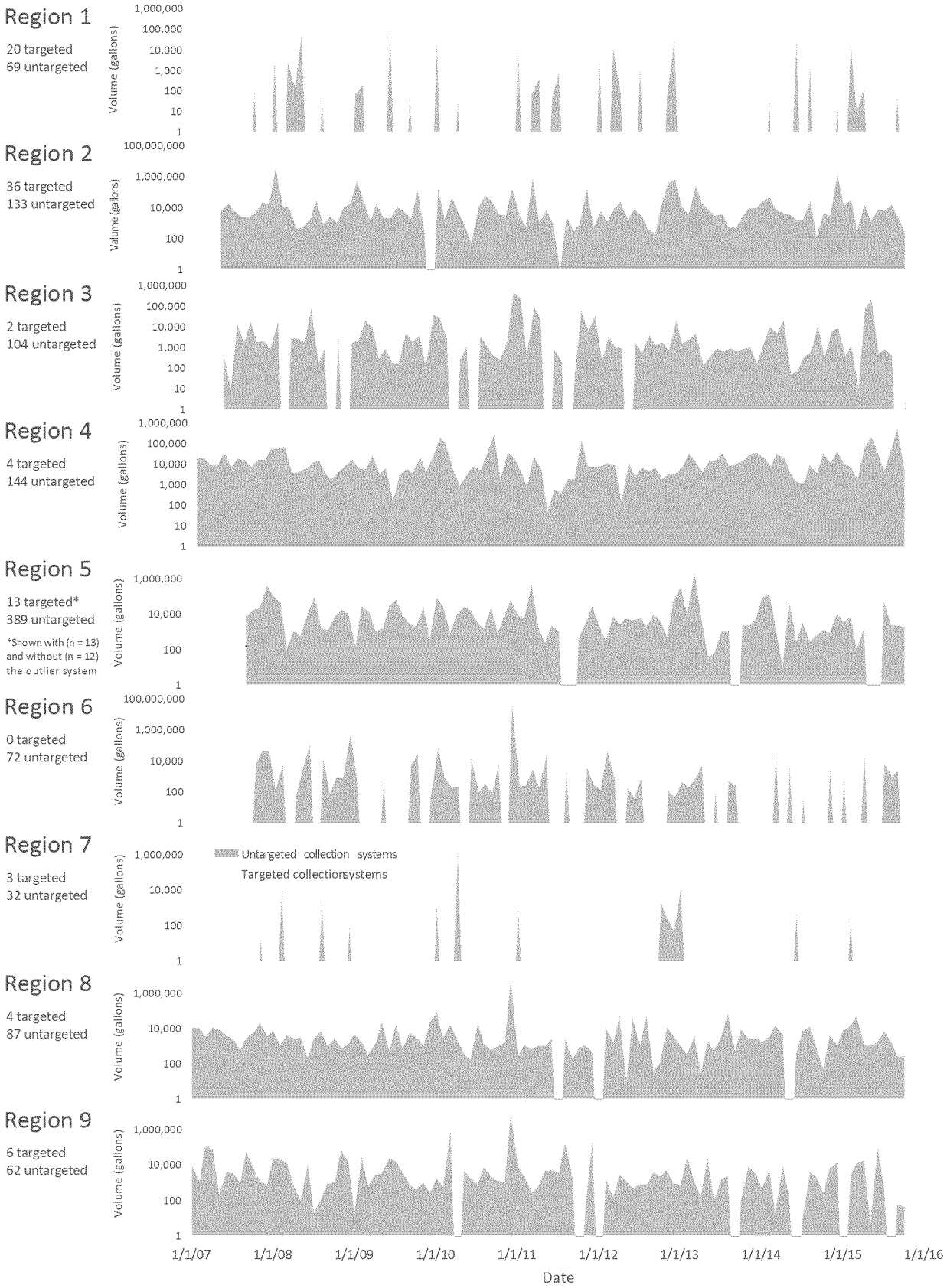




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**Figure 27. Trends in spill volume rate calculated for targeted and untargeted collection systems, by region.** Plotted on a log scale.

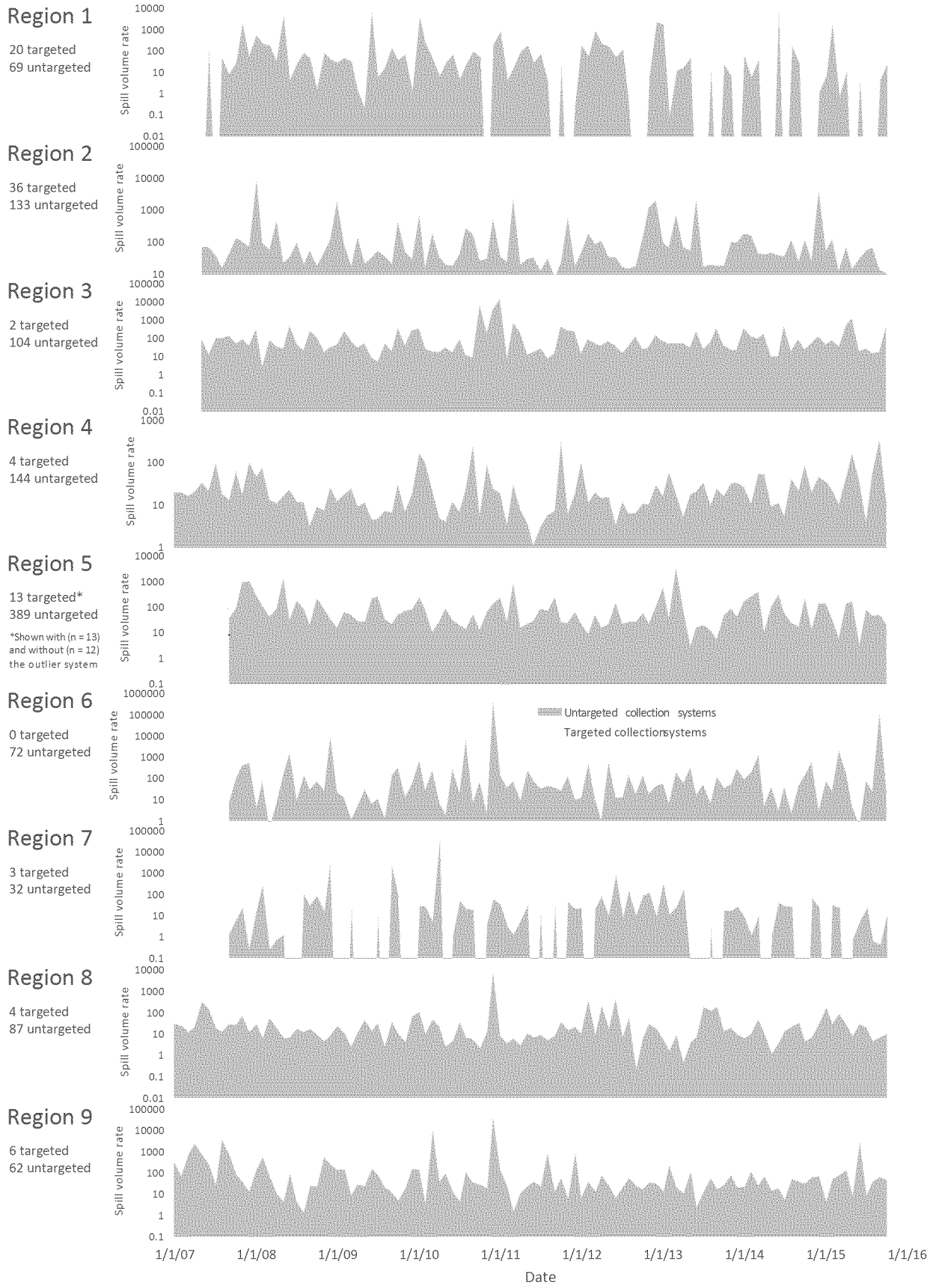

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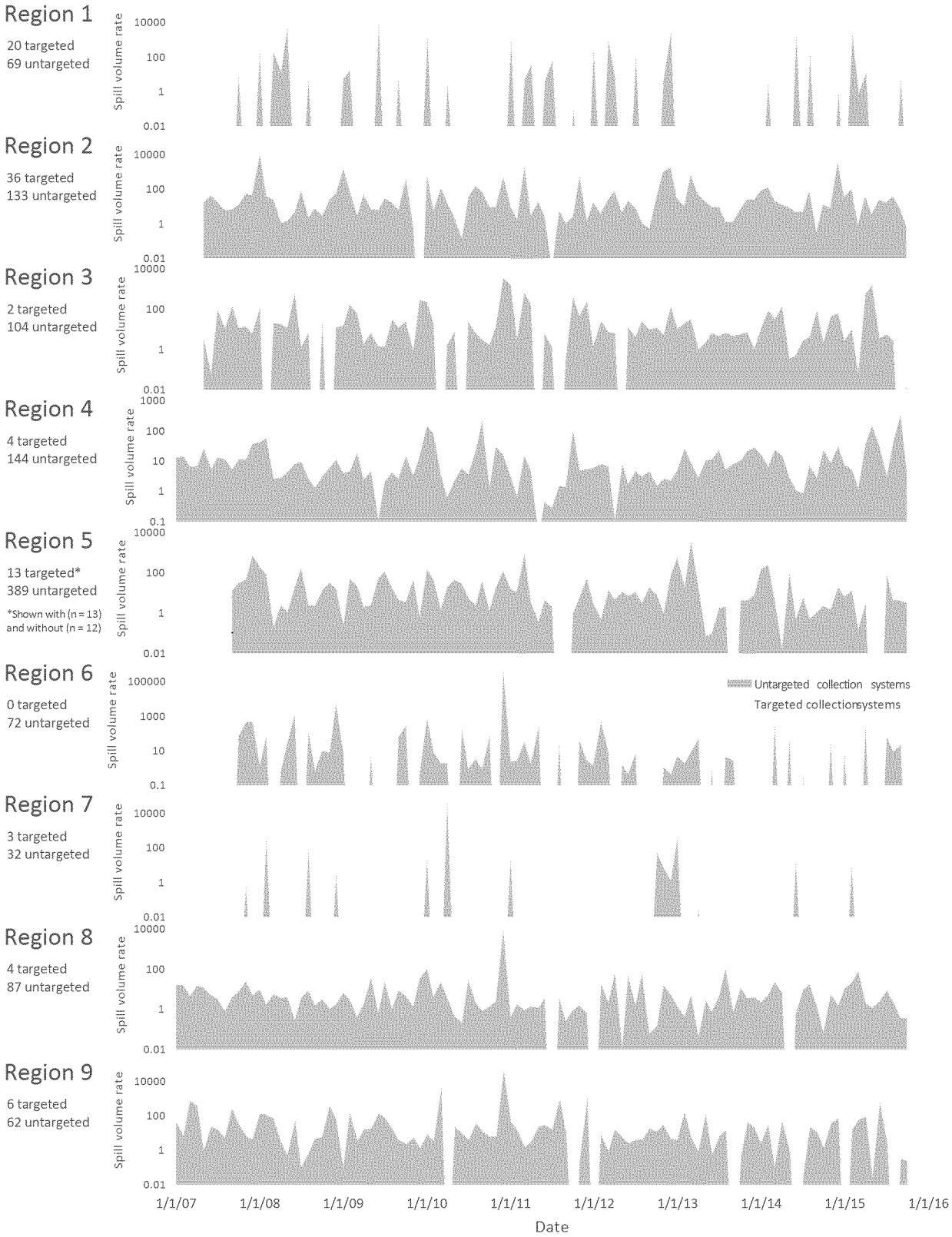
**Figure 28. Trends in spill volume rate for SSO volume reported as reaching surface water calculated for targeted and untargeted collection systems, by region.** Plotted on a log scale.



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### 3. Comparative metrics for individualtargeted and untargeted collection systems

The following figures use bubble charts to show relationships between various metrics for individual targeted and untargeted collection systems. For ease of visual inter-comparison, we use the same axes—overall spill rate vs. overall spill volume rate—for each figure (unless otherwise indicated), and vary bubble size according to the highlighted metric.

#### Number of SSOs

**Figure 29** highlights the total number of SSOs reported and the total number of SSOs reported as reaching surface water for the time period from the date in 2007 when reporting was first required for the collection system through October 2015. Most of the systems reporting larger numbers of SSOs and larger numbers of SSOs reaching surface water have been targeted. However, some collection systems reporting several hundred to greater than 1,000 SSOs have not been targeted. Some targeted systems reported a relatively small number of SSOs.

#### Volume of SSOs

**Figure 30** highlights the total volume of SSOs reported and the total SSO volume reported as reaching surface water for the time period from the date in 2007 when reporting was first required for the collection system through October 2015. Many, but not all, of the systems reporting larger volumes of SSOs and larger SSO volumes reaching surface water have been targeted. Again, some targeted systems reported relatively low volumes of SSOs.

#### Number of water crossings

**Figure 31** highlights the number of water crossings in the collection system identified in the June 8, 2015, Questionnaire data file. Many, but not all, of the systems having a large number of water crossings and higher spill rates and spill volume rates have been targeted. Some targeted systems had few water crossings.



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**Figure 29. Relationship between the total number of SSOs reported (overall and reported as reaching surface water), spill rate, and spill volume rate .** Bubble size shows the relative scale of the total number of SSOs reported (top) and the total number of SSOs reported as reaching surface water (bottom) for each targeted and untargeted system. Bubble location is plotted as a function of overall spill rate (x -axis) and overall spill volume rate (y-axis), each on a log scale.

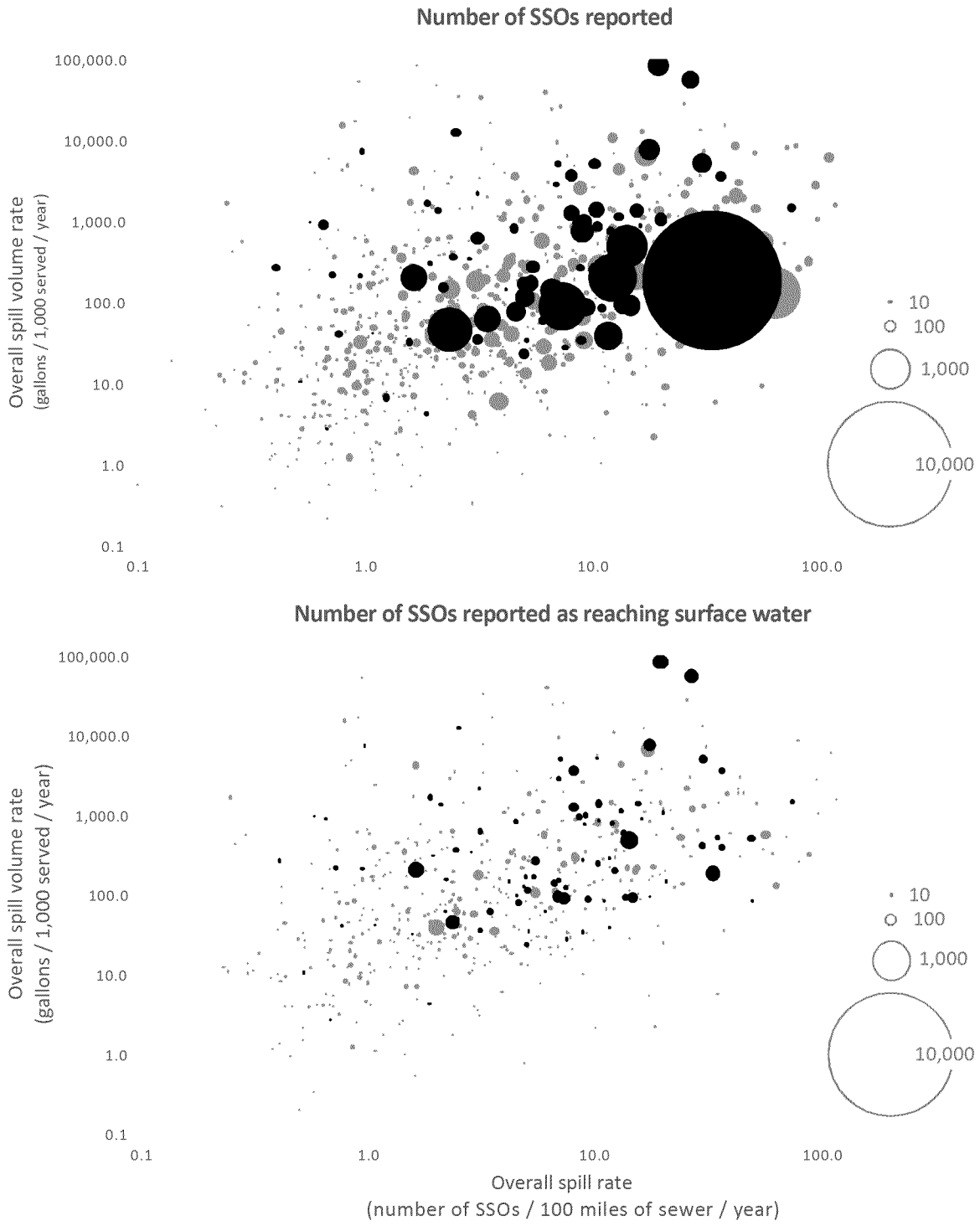

**Figure 30. Relationship between the total volume of SSOs reported (overall and reaching surface water), spill rate, and spill volume rate.** Bubble size shows the relative scale of the total volume of SSOs reported (top) and the total SSO volume reported as reaching surface water (bottom) for each targeted and untargeted system. Bubble location is plotted as a fun ction of overall spill rate (x-axis) and overall spill volume rate (y-axis), each on a log scale.

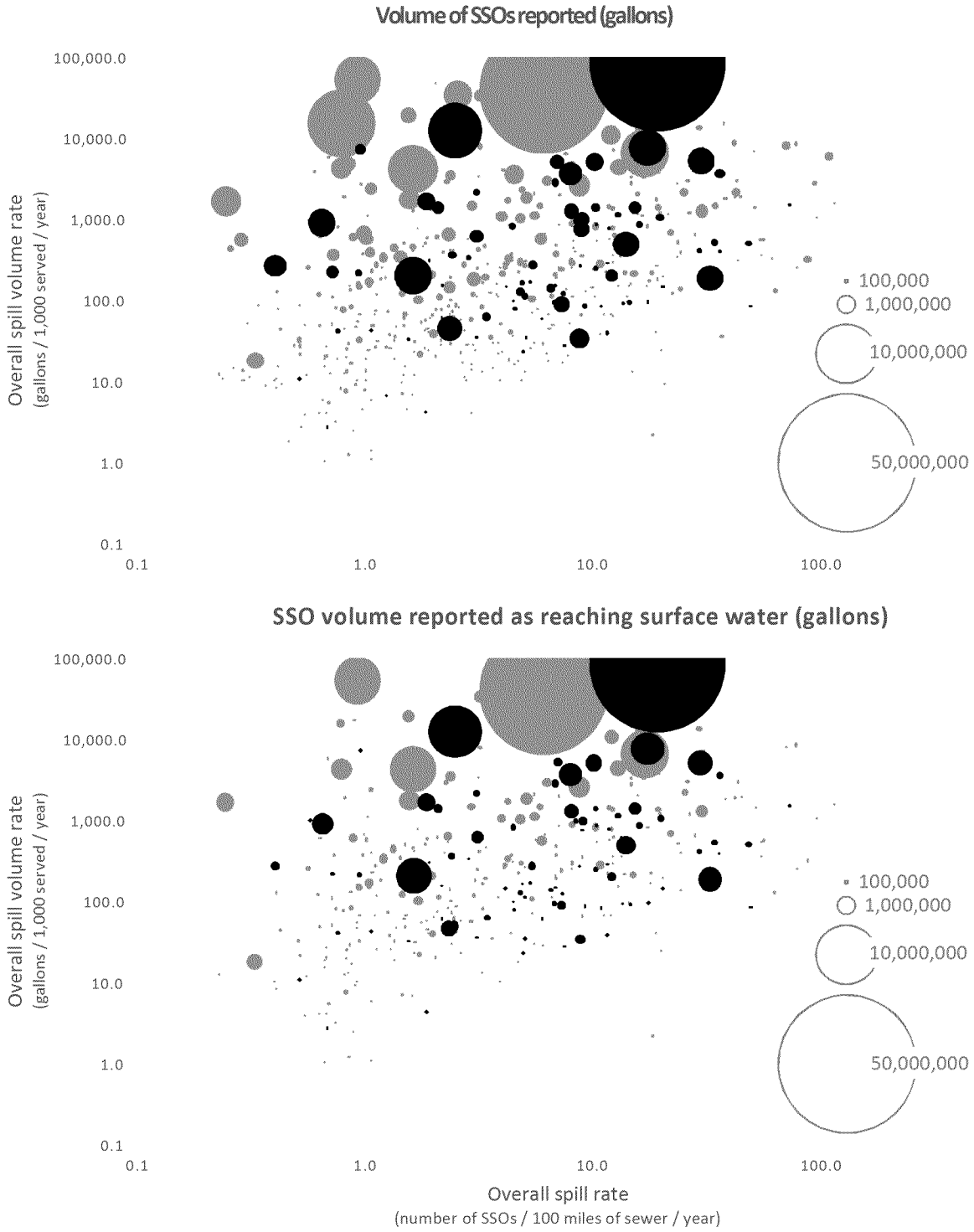

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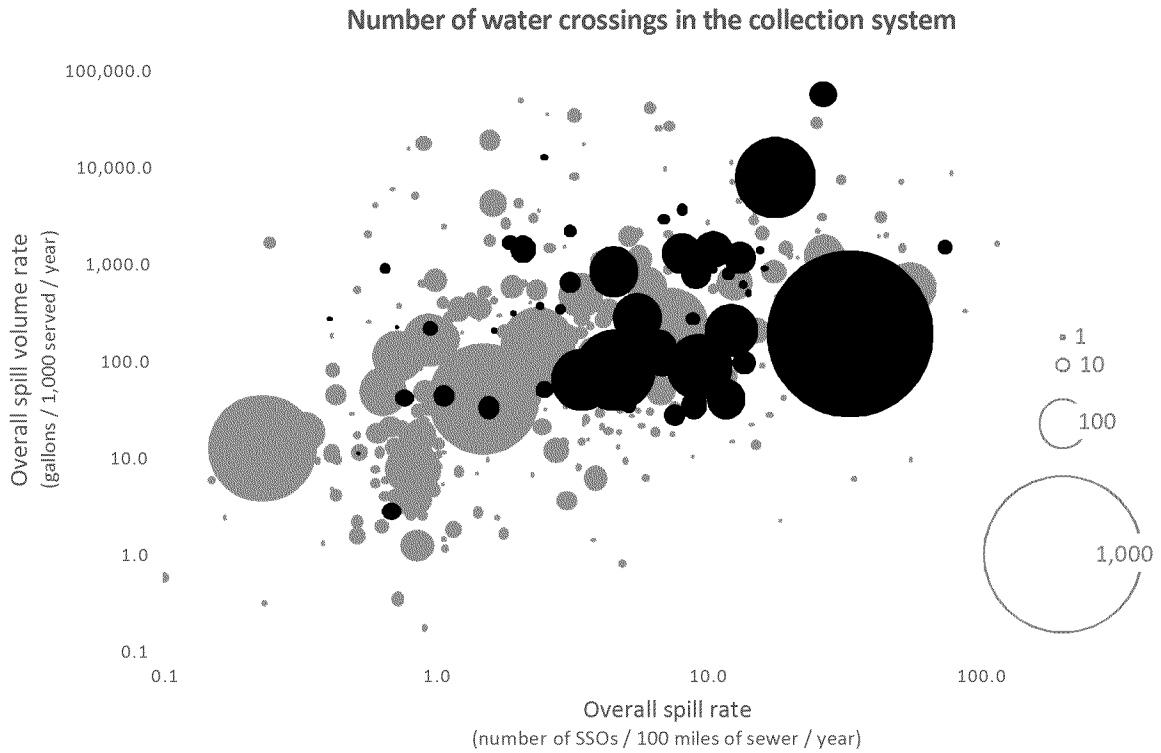
**Figure 31. Relationship between the number of water crossing in the collection system, spill rate, and spill volume rate.** Bubble size shows the relative scale of the number of water crossing for each targeted and untargeted system, as of June 2015. Bubble location is plotted as a function of overall spill rate (x -axis) and overall spill volume rate (y-axis), each on a log scale.




## Miles of collection system and miles of laterals

**Figure 32** highlights the total miles of collection system and total miles of laterals included in the collection system identified in the June 8, 2015, Questionnaire data file. Most larger collection systems have been targeted, as have most collection systems with more miles of laterals with higher spill rates and spill volume rates. Some targeted systems were relatively small or had few miles of laterals. Many of these had higher spill rates or spill volume rates.

Smaller collection systems tended to demonstrate more extreme variations in overall spill rate.[510] Although smaller systems have some of the highest spill rates and spill volume rates, relatively few have been targeted by citizen groups (see **Figure 33**, below). Instead, targeted collection systems were more likely to have relatively high spill rates and more than 50 miles of sewer. More than one-third of the collection systems in California with more than 500 miles of sewer have been targeted, including all systems larger than 2,000 miles. Given their proportionally larger effective contributions to SSO pollution (in terms of both absolute numbers of SSOs and absolute volume), larger systems may appear to offer greater opportunities for reducing SSO impacts with less expenditure of plaintiff effort. For example, in the San Francisco Bay area, a citizen group might find it easier and more effective to target 1 large collection system than 10 smaller ones. In interviews, collection-system-aligned interests suggested that another reason citizens might avoid targeting smaller collection systems is that those systems have shallower pockets.[511]

Miles of lateral responsibility do not appear to be highly predictive of spill rate or spill volume rate. The possible exception is the fairly high spill rates shown for two of the collection systems with the largest mileage of laterals. Otherwise, systems with large lateral mileage are distributed across a broad range of spill rate and spill volume rate values. While laterals likely experience higher spill rates than mains in many system (see



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**Parts B.5 and B.6** of this chapter), it is unclear whether that straightforwardly translates into higher overall spill rates (or volumes) for these systems or not. Finer-scale comparisons might help to shed light on this issue.

**Figure 32. Relationship between the miles of sewer in the collection system (total miles and miles of laterals only), spill rate, and spill volume rate.** Bubble size shows the relative scale of the total miles of sewer included in the collection system (top) and the number of miles of laterals included in the collection system (bottom) for each targeted and untargeted system, as of June 2015. Bubble location is plotted as a function of overall spill rate (x-axis) and overall spill volume rate (y-axis), each on a log scale.

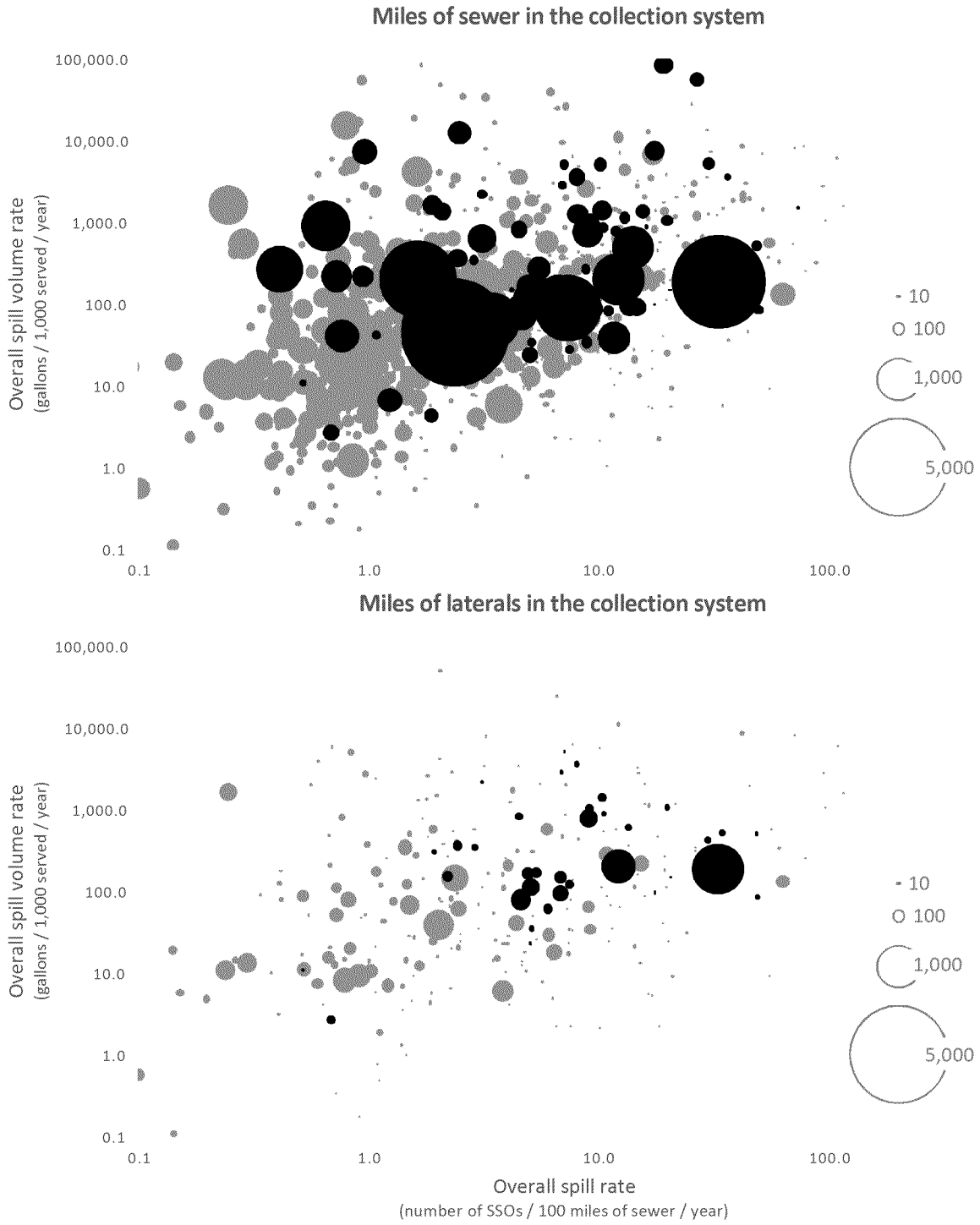

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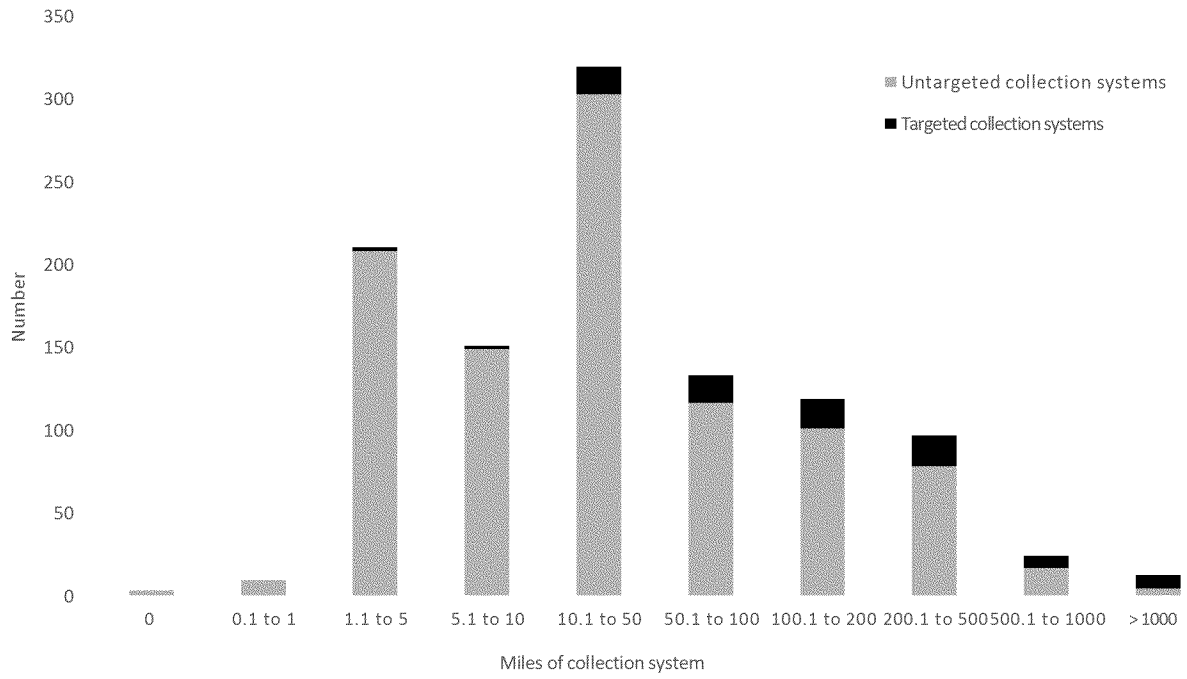
**Figure 33. Targeted systems, by collection system size.** The chart shows the number and proportion of targeted collection systems within each size class: <= 10 miles, 11 to 50 miles, 51 to 200 miles, 201 to 500 miles, and > 500 miles. The very largest collection systems, and many of the systems with > 50 miles of sewer and relatively high spill rates, have been targeted for citizen enforcement.




## Population served

**Figure 34** highlights the population served by each collection system, as listed in the June 8, 2015, Questionnaire data file. Most collection systems with higher spill rates or spill volume rates serving larger populations were targeted for citizen enforcement. Some targeted systems served relatively small populations, but many of these had higher spill rates or spill volume rates.

## Annual budget

**Figure 35** highlights the annual budget of each collection system, as listed in the June 8, 2015, Questionnaire data file. The combined annual operation and maintenance and capital expenditures budgets for collection systems were not perfectly correlated with either population served or miles of collection system (compare with **Figures 32 and 34**). Many other factors may enter into budget size, including collection system condition, community wealth, and specific legal and regulatory commitments.



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**Figure 34. Relationship between the population served by the collection system, spill rate, and spill volume rate.** Bubble size shows the relative scale of the population served by the collection system for each targeted and untargeted system, as of June 2015. Bubble location is plotted as a function of overall spill rate (x -axis) and overall spill volume rate (y-axis), each on a log scale.

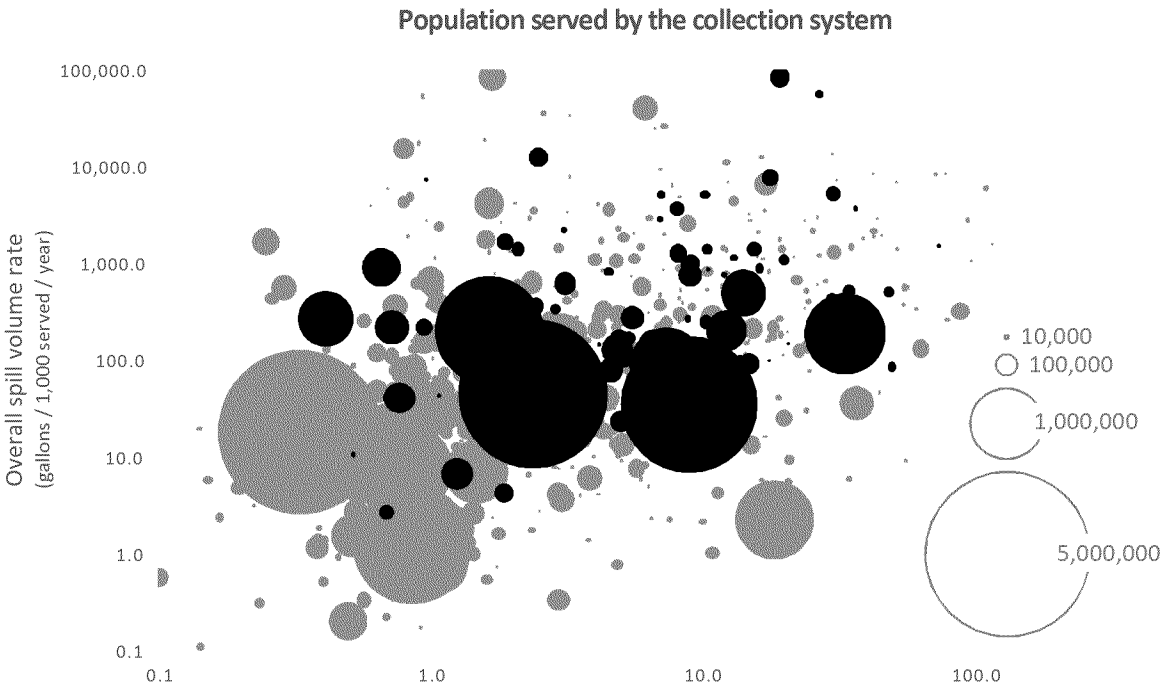
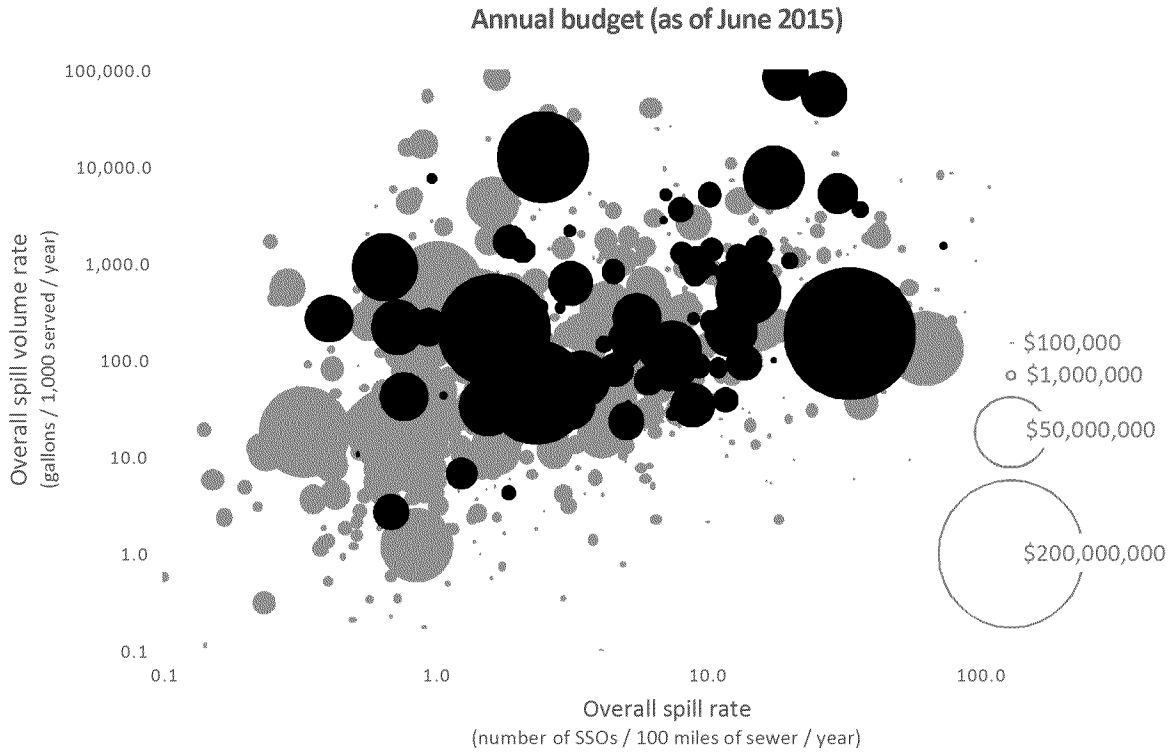



**Figure 35. Relationship between the annual budget, spill rate, and spill volume rate.** Bubble size shows the relative scale of the annual budget for each targeted and untargeted system, as of June 2015. Bubble location is plotted as a function of overall spill rate (x-axis) and overall spill volume rate (y-axis), each on a log scale.



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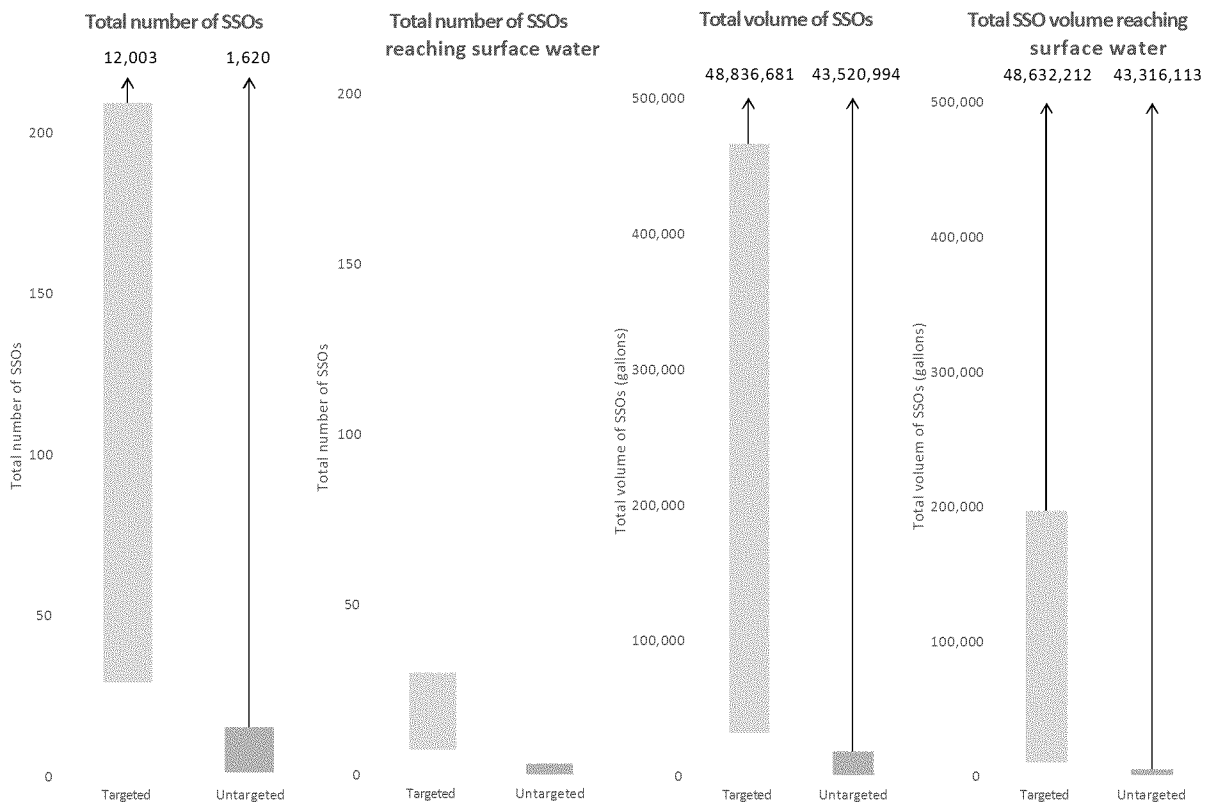
## 4. Summary statistics for targeted and untargeted collection systems

This section provides summary statistics for targeted and untargeted collection systems. For each group, we identified the interquartile range, median, minimum, and maximum for each of a suite of collection system metrics, shown in box and whisker plots, below.

The interquartile ranges of data for targeted and untargeted systems did not overlap at all for some metrics. These include the total number of SSOs, total number of SSOs reaching surface water, total volume of SSOs, and total SSO volume reaching surface water reported during the 2007 to October 2015 time period (**Figure 36**). This is also the case for the spill volume rate for the volume of SSOs reported as reaching surface water (**Figure 37**). For all four of the metrics shown in **Figure 36**, targeted systems had higher maximum values than did untargeted systems.

**Figure 36. The spread of data for SSO number and volume metrics, overall and for SSOs and SSO volume reported as reaching surface water** during the time period from the date reporting began in 2007 through October 2015, The lower boundary of each box marks the 1st quartile of the group, the line within the box marks the median value, the upper boundary of the box marks the 3rd quartile, and the whiskers extend to the highest and lowest values. For each pair, targeted collection systems are shown on the left (in gray) and untargeted collection systems are shown at right (in blue).




For other metrics, the interquartile ranges of data for targeted and untargeted collection systems were different, but overlapped. For spill rate, spill rate for SSOs reaching surface water, and spill volume rate, the 1st quartile of the data for targeted systems fell above the median but below the 3rd quartile of the data for untargeted systems (**Figure 37**). For all four of the metrics shown in **Figure 37**, targeted systems had lower maximum values than did untargeted systems.



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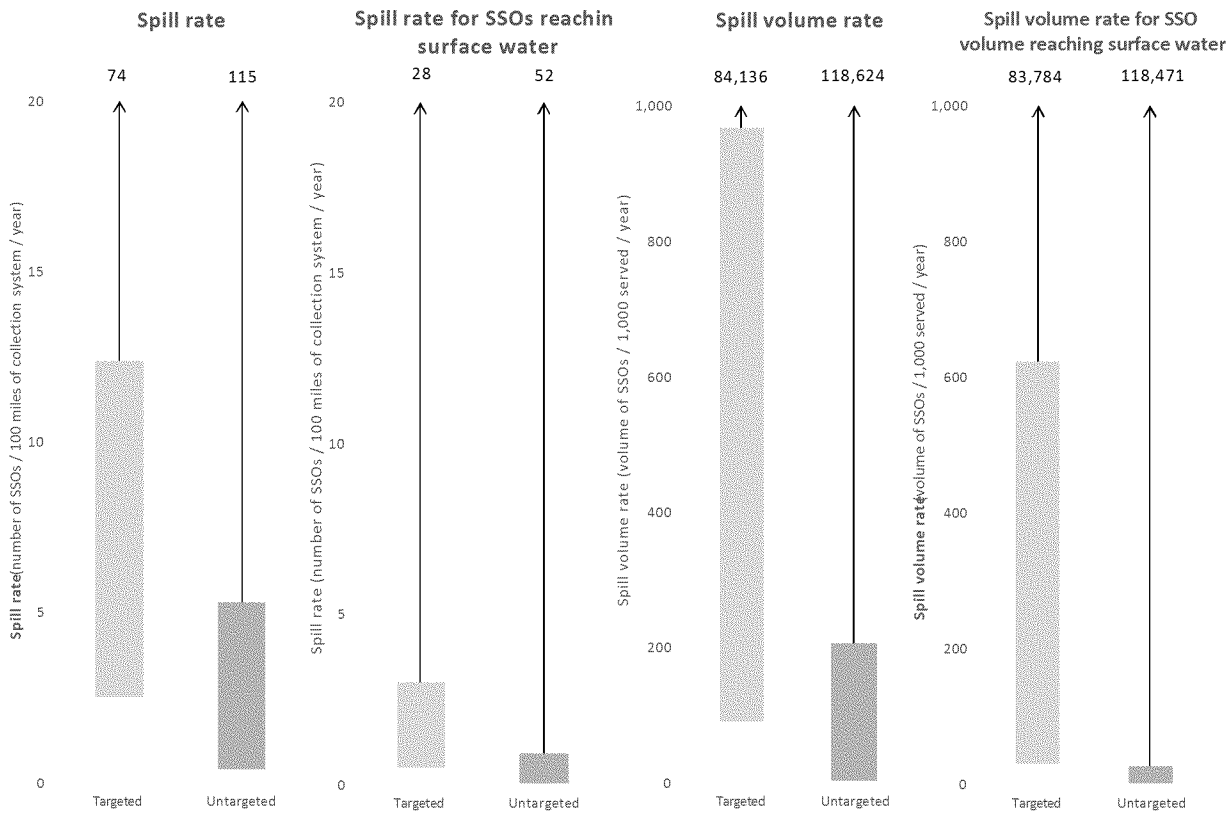
**Figure 37. The spread of data for spill rate and spill volume metrics, overall and for SSOs and SSO volume reported as reaching surface water** for the time period from the date reporting began in 2007 through October 2015. The spread of data for targeted collection systems was significantly different for the spill volume rate for the SSO volume reaching surface water. The lower boundary of each box marks the 1st quartile of the group, the line within the box marks the median value, the upper boundary of the box marks the 3rd quartile, and the whiskers extend to the highest and lowest values. For each pair, targeted collection systems are shown on the left (in gray) and untargeted collection systems are shown at right (in blue).




Other metrics for which the interquartile ranges of data for targeted and untargeted collection systems were different, but overlapped include the number of water crossings in the collection system, the total miles of collection system, the miles of laterals included in the collection system, and the percent of laterals included in the collection system (**Figure 38**). For the first three metrics, the data for targeted systems was weighted toward higher values, and the maximum values for targeted systems exceeded the maximum values for untargeted systems. For the last, percent laterals in the collection system, the data were more similar overall, except that untargeted systems had the highest percentages of laterals.



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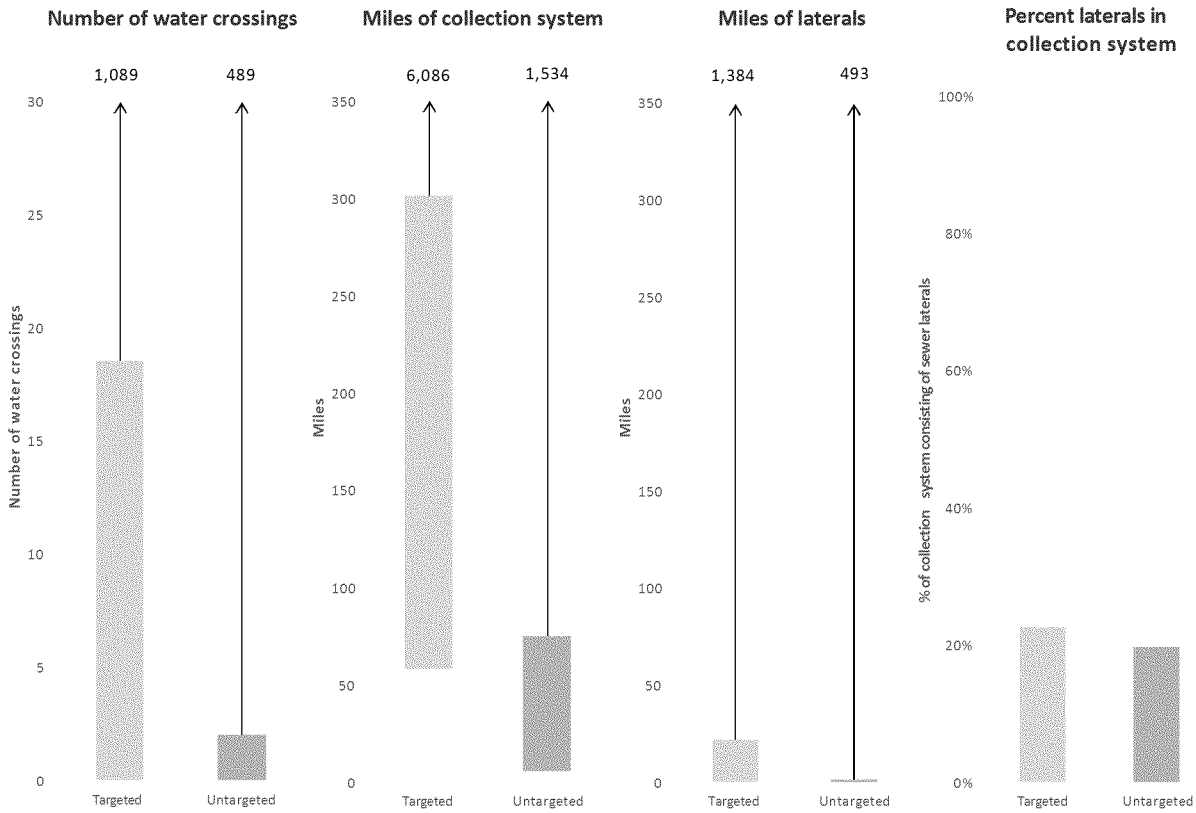
**Figure 38. The spread of data for metrics related to collection system characteristics as of June 2015.** Data were derived from the SSO Data Flat File *Questionnaire.txt* downloaded on June 8, 2015. The lower boundary of each box marks the 1st quartile of the group, the line within the box marks the median value, the upper boundary of the box marks the 3rd quartile, and the whiskers extend to the highest and lowest values. For each pair, targeted collection systems are shown on the left (in gray) and untargeted collection systems are shown at right (in blue).




Finally, the interquartile ranges for data from targeted and untargeted collection systems regarding population served and annual budget were different but overlapped (**Figure 39**). In both cases, the median for targeted collection systems fell above the 3rd quartile of the data for untargeted systems. The maximum population for untargeted collection systems exceeded the maximum population for targeted systems. However, the maximum annual budget for targeted collection systems was more than twice the maximum budget for untargeted systems. The 3 largest collection systems, all of which have been targeted for citizen enforcement, report the 3 largest annual budgets.

**Figure 39. The spread of data for the population served by collection systems and the combined annual budget for operation and maintenance and capital expenditures, as of June 2015.** Data were derived from the SSO Data Flat File *Questionnaire.txt* downloaded on June 8, 2015. The lower boundary of each box marks the 1st quartile of the group, the line within the box marks the median value, the upper boundary of the box marks the 3rd quartile, and the whiskers extend to the highest and lowest values. For each pair, targeted collection systems are shown on the left (in gray) and untargeted collection systems are shown at right (in blue).



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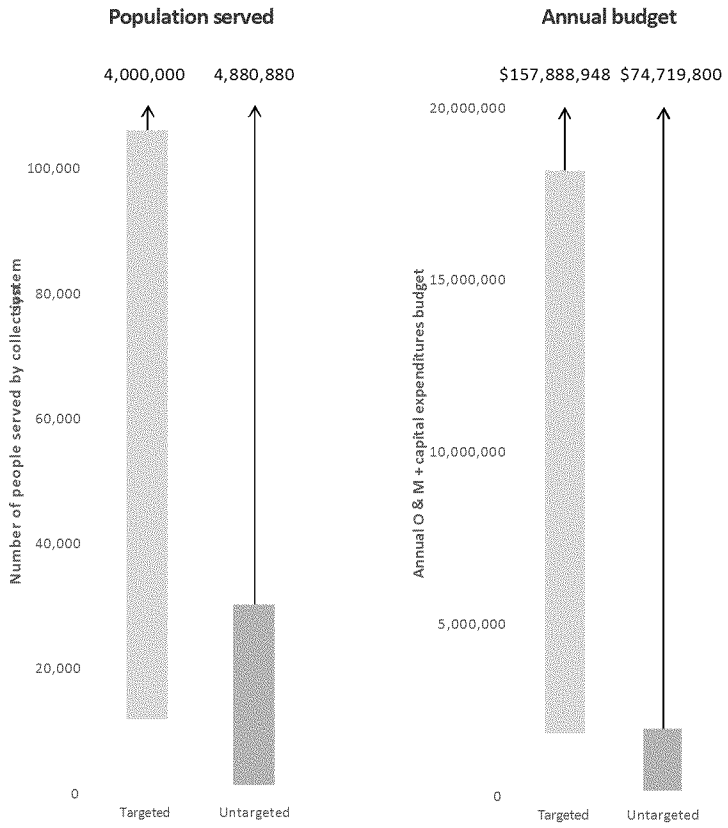


## 5. Factors correlated with collection system targeting

Our research identifiedcitizen enforcement activity associated with about 8% (88) of the 1,093 collection systems actively enrolled under the Statewide Permit as of June 2015. We compared the ratio of targeted systems in various subgroups to the appropriate overall ratio as follows for each of the subgroups identified in **Table 16**:

$$\frac{\&'\ (\ )*+\ !\#+9*!*8\ 0\&/'\ )9+"\ 'A}{!"!\#\$\&'\ (\ )*+\ 0\&/'\ )9+"\ 'A} \div \frac{DD}{!"!\#\$\&'\ (\ )*+\ "@*+\#\$\$}$$

For the purposes of our calculations, the *total number overall* varied slightly, so that the appropriate overall ratio varies from 0.0816 to 0.0827 (or about 8.2 to 8.3%). First, 14 of the 1,005 untargeted collection systems have never reported an SSO or filed a no spill report. Therefore, for the following metrics, 1,079 was used for the *total number overall*: number of SSOs, volume of SSOs, number of water crossings in the collection system, and combined annual operation and maintenance + capital expenditure budget. Next, 3 additional untargeted collection systems reported 0 miles of collection system. Therefore, spill rate and miles of sewer included in the collection system were calculated using 1,076 for the *total number overall*. Finally, 15 untargeted collection systems reported a population of 0 for the collection system. Therefore, spill volume rate and population served by the collection system were calculated using 1,064 for the *total number overall*.

Citizen enforcement was not randomly distributed across the subgroups identified in **Table 16**.



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**Table 16. Targeting does not appear to have been random.** Citizen enforcement targeted 8% of all active collection systems. Collection systems reporting more and larger SSOs (especially those reaching surface water) over the period from the time reporting was required in 2007 to October 2015, systems with more water crossings, larger collection systems, collection systems serving more people, and collection systems with larger budgets (as of mid-2015) were more likely to be targeted than would be expected if target selection were random. Systems falling within the subgroups shown in bold type were especially likely (4 to 9 times as likely) to be targeted.

| Performance metric | | Subgroup | Number of systems in subgroup | Percent of subgroup targeted | Times more likely to be targeted |
|---|---|---|---|---|---|
| Number of SSOs | All SSOs | > 25 SSOs | 224 | 30% | 3.7 |
| | | **> 50 SSOs** | **128** | **41%** | **5.1** |
| | | **> 100 SSOs** | **69** | **57%** | **6.9** |
| | SSOs reaching surface water | **> 25 SSOs** | **56** | **55%** | **6.8** |
| | | **> 50 SSOs** | **20** | **65%** | **8.0** |
| | | **> 100 SSOs** | **8** | **75%** | **9.2** |
| Volume of SSOs | All SSOs | > 10,000 gallons | 386 | 19% | 2.4 |
| | | **> 100,000 gallons** | **132** | **34%** | **4.2** |
| | | **> 1,000,000 gallons** | **26** | **50%** | **6.1** |
| | SSO volume reaching surface water | > 10,000 gallons | 248 | 26% | 3.2 |
| | | **> 100,000 gallons** | **82** | **43%** | **5.2** |
| | | **> 1,000,000 gallons** | **17** | **53%** | **6.5** |
| Spill rate | All SSOs | > 5 SSOs/100 miles/year | 310 | 17% | 2.1 |
| | | > 10 SSOs/100 miles/year | 184 | 17% | 2.1 |
| | | > 25 SSOs/100 miles/year | 56 | 18% | 2.2 |
| | SSOs reaching surface water | > 5 SSOs/100 miles/year | 74 | 16% | 2.0 |
| | | > 10 SSOs/100 miles/year | 17 | 18% | 2.2 |
| | | > 25 SSOs/100 miles/year | 4 | 25% | 3.1 |
| Spill volume rate | All SSOs | > 100 gallons/1,000 served/year | 379 | 16% | 1.9 |
| | | > 500 gallons/1,000 served/year | 185 | 18% | 2.2 |
| | | > 5,000 gallons/1,000 served/year | 40 | 20% | 2.4 |
| | SSO volume reaching surface water | > 100 gallons/1,000 served/year | 189 | 22% | 2.6 |
| | | > 500 gallons/1,000 served/year | 97 | 26% | 3.1 |
| | | > 5,000 gallons/1,000 served/year | 20 | 20% | 2.4 |
| Number of water crossings in the collection system* | | > 1 crossing | 337 | 17% | 2.1 |
| | | > 5 crossings | 161 | 25% | 3.1 |
| | | > 10 crossings | 103 | 28% | 3.5 |
| | | **> 50 crossings** | **33** | **36%** | **4.5** |
| | | **> 100 crossings** | **14** | **43%** | **5.3** |
| Miles of sewer included in the collection system* | Sewer mains and laterals | > 50 miles | 386 | 18% | 2.2 |
| | | > 100 miles | 253 | 21% | 2.5 |
| | | > 200 miles | 134 | 25% | 3.1 |
| | | **> 500 miles** | **37** | **41%** | **5.0** |
| | | **> 1,000 miles** | **13** | **62%** | **7.6** |
| | Sewer laterals only | > 5 miles | 163 | 20% | 2.4 |
| | | > 10 miles | 112 | 26% | 3.2 |
| | | **> 200 miles** | **9** | **33%** | **4.1** |
| Population served by the collection system* | | > 10,000 people | 470 | 15% | 1.8 |
| | | > 100,000 people | 109 | 21% | 2.6 |
| | | **> 1,000,000 people** | **9** | **56%** | **6.8** |
| Combined annual operation and maintenance + capital expenditure budget, as of mid-2015* | | > $1,000,000 | 455 | 17% | 2.1 |
| | | **> $10,000,000** | **93** | **38%** | **4.6** |
| | | **> $50,000,000** | **11** | **36%** | **4.5** |



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* Based on the information contained in the June 8, 2015, *Questionnaire.txt* SSO Data Flat File.

As **Table 16** shows, citizen enforcement focused preferentially on collection systems reporting larger numbers of SSOs, larger volumes of SSOs, and more water crossings and, to a lesser degree, on those with higher calculated spill rates and spill volume rates. Relationship were more pronounced for SSOs reported as reaching surface water.

### Number of SSOs — overall

While only 8% of collection systems were targeted overall, of those collection systems that reported more than 25 SSOs between the time reporting was first required in 2007 and October 2015, 30% were targeted. In other words, collection systems reporting more than 25 SSOs were about 3.7 times more likely to be targeted than might be expected if target selection were random. Systems reporting more than 50 SSOs were 5.1 times more likely to be targeted, and those reporting more than 100 SSOs were 6.9 times more likely to be targeted.

### Number of SSOs — reported as reaching surface water

The likelihood of targeting increased when the analysis was limited to the number of SSOs reported as reaching surface water. Collection systems reporting more than 25, 50, or 100 SSOs as reaching surface water between the time reporting was first required in 2007 and October 2015 were 6.8, 8.0, or 9.2 times more likely to be targeted than might be expected if target selection were random.

### Volume of SSOs — overall

Collection systems reporting more than 10,000, 100,000, or 1,000,000 gallons of SSOs between the time reporting was first required in 2007 and October 2015 were 2.4, 4.2, or 6.1 times more likely to be targeted than might be expected if target selection were random.

### Volume of SSOs — SSO volume reported as reaching surface water

Again, the likelihood of targeting increased when the analysis was limited to the SSO volume reported as reaching surface water. Collection systems reporting more than 10,000, 100,000, or 1,000,000 gallons of SSOs as reaching surface water between the time reporting was first required in 2007 and October 2015 were 3.2, 5.2, or 6.5 times more likely to be targeted than might be expected if target selection were random.

### Spill rate — overall

Collection systems with spill rates calculated to be more than 5, 10, or 25 SSOs per 100 miles of collection system per year for the time period from when reporting was first required in 2007 to October 2015 were 2.1, 2.1, or 2.2 times more likely to be targeted than might be expected if target selection were random.

### Spill rate — for SSOs reported as reaching surface water

Again, the likelihood of targeting increased somewhat when the analysis was limited to SSOs reported as reaching surface water. Collection systems with spill rates calculated to be more than 5, 10, or 25 SSOs per 100 miles of collection system per year for the time period from when reporting was first required in 2007 to October 2015 were 2.0, 2.2. or 3.1 times more likely to be targeted than might be expected if target selection were random.

### Spill volume rate — overall

Collection systems with spill volume rates calculated to be more than 100, 500, or 5,000 gallons per 1,000 people served per year for the time period from when reporting was first required in 2007 to October 2015 were 1.9, 2.2, or 2.4 times more likely to be targeted than might be expected if target selection were random.



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### Spill volume rate — for SSO volume reported as reaching surface water

Again, the likelihood of targeting increased somewhat when the analysis was limited to the SSO volume reported as reaching surface water. Collection systems with spill volume rates calculated to be more than 100, 500, or 5,000 gallons per 1,000 people served per year for the time period from when reporting was first required in 2007 to October 2015 were 2.6, 3.1, or 2.4 times more likely to be targeted than might be expected if target selection were random.

### Number of water crossings in the collection system

Collection systems reported as having more than 1, 5, 10, 50, or 100 water crossings were 2.1, 3.1, 3.5, 4.5, or 5.3 times more likely to be targeted than might be expected if target selection were random.

**Table 16** also shows that larger collection systems, systems with more miles of laterals, systems serving larger populations, and systems with larger budgets as of mid-2015 were more likely to be targeted.

### Miles of sewer included in the collection system

Collection systems reported as having responsibility for more than 50, 100, 200, 500, or 1,000 miles of sewer mains and laterals were 2.2, 2.5, 3.1, 5.0, or 7.6 times more likely to be targeted than might be expected if target selection were random.

### Miles of sewer laterals included in the collection system

Collection systems reported as having responsibility for more than 5, 10, or 200 miles of laterals were 2.4, 3.2, or 4.1 times more likely to be targeted than might be expected if target selection were random.

### Population served by the collection system

Collection systems reported as serving more than 10,000, 100,000, or 1,000,000 people were 1.8, 2.6, or 6.8 times more likely to be targeted than might be expected if target selection were random.

### Combined annual operation and maintenance + capital expenditure budget (as of mid-2015)

Collection systems reporting budgets of more than $1,000,000, $10,000,000, or $50,000,000 for annual operation and maintenance and capital expenditures as of mid-2015 were 2.1, 4.6, or 4.5 times more likely to be targeted than might be expected if target selection were random.



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**Chapter 8 summary:**

- We analyzed a number of performance metrics for targeted and untargeted collection systems from the time reporting was first required in 2007 to October 2015:
  - Number of SSOs — overall and reported as reaching surface water;
  - Volume of SSOs — overall and SSO volume reported as reaching surface water;
  - Spill rate (number of SSOs per 100 miles of collection system per year) — overall and for SSOs reported as reaching surface water; and
  - Spill volume rate (SSO volume per 1,000 people served per year) — overall and for SSO volume reported as reaching surface water.
- Statewide, the 88 targeted collection systems :
  - Reported more SSOs overall from September 2007 to October 2015 than the 1,005 untargeted systems combined;
  - Reported 42% of SSOs reaching surface water;
  - Reported 43% of the total SSO volume reported and 47% of the SSO volume reported as reaching surface water;
  - Experienced higher spill rates and higher spill rates for SSOs reaching surface water than untargeted systems;
  - Generally experienced higher spill volume rates and higher spill volume rates for SSO volume reaching surface water;
  - Experience greater reductions in spill rate than untargeted systems over time
- Regionally, trends in performance metrics were more complicated.
- Charts show how performance metrics and other metrics vary for individual collection systems.
- Box plots demonstrate the spread of data for targeted and untargeted systems for various metrics.
  - For some, the data show a clear separation between targeted and untargeted systems. This is the case for the total number of SSOs (overall and reaching surface water), the total volume of SSOs (overall and volume reaching surface water), and the spill volume rate for SSO volume reaching surface water.
  - For others, the data show greater overlap, but targeted and untargeted systems are still distinguished. This is the case for spill rate (overall and for SSOs reaching surface water) and spill volume rate (overall).
  - Non-performance metrics show differing degrees of overlap between targeted and untargeted systems. These are: the number of water crossings in the collection system, total miles of collection system, miles of laterals in the collection system, percent laterals in the collection system, population, and annual budget.
- Finally, the chapter summarizes factors that correlate with collection system targeting. The clearest correlations were with systems
  - Reporting more than 100 SSOs (6.9 times more likely to be targeted than would be expected if target selection were random);
  - Reporting more 100 SSOs as reaching surface water (9.2 times more likely to be targeted);
  - Reporting more than 1,000,000 gallons of SSOs (6.1 times more likely to be targeted);
  - Reporting more than 1,000,000 gallons of SSO volume as reaching surface water (6.5 times more likely to be targeted);
  - With more than 100 water crossings (5.3 times more likely to be targeted); and
  - With more than 1,000 miles of sewer (7.6 times more likely to be targeted).



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# CHAPTER 9 – Post-citizen-enforcement changes in the performance of targeted collection systems

We analyzed changes in individual collection system performance as another potential impact indicator. This chapter compares (1) performance metrics for individual targeted collection systems during the part of the 2007 to October 2015 period before initiation of citizen enforcement action with (2) their performance metrics during the part of the 2007 to October 2015 period after initiation of citizen enforcement action. Our research suggests that SSO-related citizen enforcement has played out in a variety of different ways in California. Recognizing that individual cases are complex, and that we lack complete information, we provide examples that illustrate some of the variation we encountered. In addition to the examples presented here, we include charts and information summaries for all targeted collection system agencies in the **Online Supplement**, available at *http://www.law.berkeley.edu/SSO-citizen-enforcement*).

## A. Data and methods used to characterize changes in performance after initiation of citizen enforcement actions

Using the equations below, we calculated the overall spill rate and spill volume rate for each collection system during the portion of the period of record before and the portion of the period of record after each citizen enforcement action was initiated. This comparison was not possible for actions initiated before or soon after reporting to the SSO Database began, or those initiated too close to October 31, 2015, the end of our dataset. We analyzed all actions initiated at last 0.75 years after SSO database reporting was first required for each collection system and at least 0.75 years before the end of the dataset. This resulted in 67 collection system / citizen action pairs.[512]

For each pair, we compared performance metrics before and after citizen enforcement was initiated. Our comparative approach is simple and could no doubt be improved upon with more sophisticated analytical methods and additional data.

We used the NOI date as the point dividing the "before" and "after" periods or, if the NOI date was not known, the date the complaint was filed[513] or the date the pre-litigation settlement was signed. Some stakeholders have suggested that the settlement effective date would make more sense as a dividing point. However, the time between NOI and settlement varied widely and there is no reason to assume that targeted agencies would not re-evaluate their management practices and begin making changes in view of an active threat of litigation or during ongoing litigation. While not perfect, we view the NOI date as a reasonable boundary from which to measure performance changes.

Spill rate before initiation of citizen enforcement (spill rate before)

$$\frac{!"!\#\$\&'()*+",--./)*,"+*}{!"!\#\$(0\$*/",/*1*+((\#0\&/3\$\#!*+\#\$/)} \square 100/ \text{ years of observations before}$$

Spill rate after initiation of citizen enforcement (spill rate after)

$$\frac{!"!\#\$\&'()*+",--./\#,!*+}{!"!\#\$(0\$*/",/*1*+((\#0\&/3\$\#!*+\#\$/)} \square 100/ \text{ years of observations after}$$

Spill volume rate before initiation of citizen enforcement (spill volume rate before)

$$\frac{!"!\#\$@"\$'(*",--./)*,"+*}{\&'()*+",A*"A\$*\circ\,*\square@*8} \square 1000/ \text{ years of observations before}$$

Spill volume rate after initiation of citizen enforcement (spill volume rate after)

$$\frac{!"!\#\$@"\$'(*",--./\#,!*+}{\&'()*+",A*"A\$*\circ\,*\square@*8} \square 1000/ \text{ years of observations after}$$



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Percent reduction in spill rate

$$\frac{(/A0\$\$+\#!*\ )*,"+*\ E\ /A0\$\$+\#!*\ \#,!*+)}{/A0\$\$+\#!*\ )*,"+*} \square\ 100$$

Percent reduction in spill volume rate

$$\frac{(/A0\$\$@"\$'\ (*+\#!*\ )*,"+*\ E\ /A0\$\$@"\$'\ (*+\#!*\ \#,!*+)}{/A0\$\$@"\$'\ (*+\#!*\ )*,"+*} \square\ 100$$

Total number of SSOs before: The total number of SSOs reported for the collection system (see description given in **Chapter 8.B.1**) during the period before the NOI date.

Total number of SSOs after: The total number of SSOs reported for the collection system (see description given in **Chapter 8.B.1**) during the period after the NOI date.

Total volume of SSOs before: The total volume of SSOs reported for the collection system (see description given in **Chapter 8.B.1**) during the period before the NOI date.

Total volume of SSOs after: The total volume of SSOs reported for the collection system (see description given in **Chapter 8.B.1**) during the period after the NOI date.

Total miles of sewer: See description given in **Chapter 8.B.1**.

Number of people served See description given in Chapter **8.B.1**.

Years of observations before: The fractional years of observations (s ee description given in **Chapter 8.B.1**) before the NOI date.

Years of observations after: The fractional years of observations (s ee description given in **Chapter 8.B.1**) after the NOI date.

## B. Results

We were able to analyze 67 collection system / citizen action pairs (see **Part A**, above), listed in **Table 17**, below. California River Watch was the primary plaintiff for 37 of the pairs, San Francisco Baykeeper was the primary plaintiff for 16 pairs, California Sportfishing Protection Alliance was the primary plaintiff for 8 pairs, and "Other" plaintiffs were the primary plaintiffs for the remaining 6 pairs.

As of June 2015, 5 collection system / citizen action pairs were based on outstanding NOIs, 19 pairs involved pre-litigation settlements, and the remaining 43 pairs involved litigation (see **Table 17**).

**Table 17. Collection system / citizen action pairs analyzed for this report.** Partial summary data for the 67 collection system / citizen action pairs for which we were able to compare spill rate and spill volume rate before and after the initiation of citizen enforcement action. Where the metric improved for the period following initiation of citizen action, it is highlighted in green. The action initiation date is the date of the NOI (unless otherwise indicated), the complaint date (*), or the pre-litigation settlement date (♦). Where, as of June 2015, the citizen action involved an outstanding NOI, the collection system agency is shown in purple text; red text indicates the action involved a pre-litigation settlement; black text indicates the action involved a lawsuit. Collection system / citizen action pairs shown in **bold text** are included in the examples in **Part C** of this chapter. See below for a key to the abbreviations used in this table.



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| Action initiation date | Plaintiff | Collection system agency (collection system) | Years of observations | | Number of SSOs | Volume (gallons) of SSOs | Spill rate | | Spill volume rate | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Before | After | Before / After | Before / After | Before | After | Before | After |
| 1/29/08 | CRW | Novato Sanitary District | 0.75 | 7.75 | 22 / 135 | 416,220 / 186,984 | 13 | 8 | 9,944 | 431 |
| **6/5/08** | **SFBk** | **Town of Hillsborough** | **1.10** | **7.40** | **36 / 185** | **2,695,433 / 2,545,093** | **33** | **25** | **222,869** | **31,208** |
| 6/5/08 | SFBk | City of Burlingame | 1.10 | 7.40 | 11 / 31 | 4,722 / 27,604 | 150 | 62 | 1,683 | 1,459 |
| 7/1/08 | CSPA | City of Stockton | 0.83 | 7.33 | 240 / 1,213 | 58,595 / 424,891 | 20 | 11 | 241 | 199 |
| 10/17/08 | Other | City of Stockton | 1.13 | 7.04 | 304 / 1,149 | 77,184 / 406,302 | 18 | 11 | 235 | 198 |
| 1/15/09* | SFBk | East Bay MUD | 1.71 | 6.79 | 2 / 6 | 12,800 / 260,240 | 3 | 2 | 12 | 59 |
| 1/27/09 | CRW | SD No. 5 of Marin County | 1.74 | 6.76 | 28 / 88 | 8,028 / 24,196 | 42 | 34 | 485 | 377 |
| 8/3/09 | CRW | City of Arcata | 2.26 | 6.24 | 30 / 77 | 7,615 / 73,533 | 14 | 13 | 211 | 736 |
| 8/24/09 | Other | City of Pacifica | 2.32 | 6.18 | 71 / 60 | 119,413 / 351,232 | 31 | 10 | 1,289 | 1,420 |
| 9/28/09 | SFBk | City of San Carlos | 2.41 | 6.09 | 170 / 164 | 33,456 / 70,399 | 53 | 20 | 472 | 393 |
| **9/28/09** | **SFBk** | **West Bay Sanitary District** | **2.41** | **6.09** | **132 / 110** | **27,085 / 16,425** | **26** | **9** | **204** | **49** |
| 9/30/09 | SFBk | City of Millbrae | 2.42 | 6.08 | 148 / 127 | 46,363 / 43,653 | 91 | 31 | 926 | 346 |
| **10/27/09** | **CSPA** | **El Dorado Irrigation District** (Deer Creek CS) | **2.15** | **6.01** | **97 / 55** | **17,852 / 24,592** | **13** | **3** | **272** | **134** |
| **10/27/09** | **CSPA** | **El Dorado Irrigation District** (El Dorado Hills CS) | **2.15** | **6.01** | **38 / 28** | **9,785 / 28,556** | **5** | **1** | **150** | **157** |
| 11/30/09 ♦ | CRW | SD No. 1 of Marin County, a.k.a. Ross Valley SD | 2.58 | 5.92 | 109 / 193 | 200,986 / 3,378,981 | 21 | 16 | 1,414 | 10,384 |
| 12/3/09* | SFBk | City of Alameda | 2.59 | 5.91 | 21 / 36 | 2,391 / 12,742 | 6 | 5 | 12 | 28 |
| 12/3/09* | SFBk | City of Albany | 2.59 | 5.91 | 82 / 110 | 2,803 / 10,466 | 69 | 40 | 58 | 96 |
| 12/3/09* | SFBk | City of Berkeley | 2.59 | 5.91 | 134 / 89 | 46,266 / 44,403 | 13 | 4 | 159 | 67 |
| 12/3/09* | SFBk | City of Emeryville | 2.59 | 5.91 | 6 / 0 | 8,760 / 0 | 15 | 0 | 327 | 0 |
| 12/3/09* | SFBk | City of Oakland | 2.59 | 5.91 | 452 / 644 | 280,219 / 1,394,903 | 19 | 12 | 270 | 590 |
| 12/3/09* | SFBk | City of Piedmont | 2.59 | 5.91 | 17 / 21 | 18,841 / 6,317 | 13 | 7 | 661 | 97 |
| 12/3/09* | SFBk | Stege Sanitary District | 2.59 | 5.91 | 42 / 87 | 22,180 / 47,710 | 11 | 10 | 259 | 245 |
| 12/19/09 | SFBk | City of San Bruno | 2.64 | 5.86 | 127 / 99 | 1,700,588 / 67,203 | 54 | 19 | 16,059 | 285 |
| 12/19/09 | SFBk | City of South San Francisco | 2.64 | 5.86 | 77 / 47 | 45,439 / 23,159 | 15 | 4 | 265 | 61 |
| 1/5/10 | Other | City of San Buenaventura, a.k.a. City of Ventura | 3.01 | 5.82 | 39 / 43 | 10,020 / 22,824 | 4 | 2 | 31 | 37 |
| 2/17/10 | Other | Occidental County SnD | 2.80 | 5.70 | 3 / 1 | 321 / 185 | 40 | 6 | 188 | 53 |
| 2/25/10 | CRW | City of Sebastopol | 2.82 | 5.68 | 12 / 13 | 158,190 / 29,128 | 10 | 5 | 7,231 | 662 |
| **10/1/10** | **CRW** | **Brooktrails Township CSD** | **3.42** | **5.08** | **46 / 16** | **21,429 / 1,024** | **19** | **4** | **2,057** | **66** |
| 12/20/10 | Other | U.S. Marine Corps Base Camp Pendleton | 3.97 | 4.86 | 93 / 69 | 330,939 / 153,894 | 12 | 7 | 1,517 | 575 |
| **12/29/10** | **CSPA** | **Sacramento Area Sewer District** | **3.33** | **4.84** | **4,871 / 7,132** | **982,836 / 801,902** | **32.8** | **33** | **253** | **142** |
| 12/29/10 | CSPA | City of Sacramento | 3.33 | 4.84 | 241 / 280 | 26,582 / 30,929 | 13 | 11 | 44 | 35 |
| **2/11/11** | **CRW** | **Bodega Bay PUD** | **3.78** | **4.72** | **0 / 6** | **0 / 3,280** | **0** | **7** | **0** | **265** |
| **2/24/11** | **Other** | **City of Santa Barbara** | **3.82** | **4.68** | **128 / 77** | **43,602 / 26,505** | **13** | **6** | **120** | **60** |
| **4/4/11** | **CRW** | **Blue Lake WTF** | **3.93** | **4.57** | **0 / 2** | **0 / 1,000** | **0** | **12** | **0** | **174** |
| 8/18/11 | CRW | City of Healdsburg | 4.30 | 4.20 | 19 / 37 | 234 / 5,700 | 4 | 8 | 5 | 118 |
| 11/30/11 | CRW | City of San Jose | 4.58 | 3.92 | 937 / 491 | 209,854 / 554,774 | 9 | 5 | 46 | 142 |
| 1/23/12 | CRW | County SnD No. 2-3 of Santa Clara | 4.73 | 3.77 | 89 / 24 | 139,988 / 34,250 | 28 | 9 | 1,537 | 472 |
| 2/23/12 | CRW | City of Yreka | 4.82 | 3.69 | 39 / 11 | 44,946 / 4,250 | 16 | 6 | 1,244 | 154 |
| 3/1/12 | CRW | West Valley SD | 4.84 | 3.67 | 171 / 71 | 47,517 / 25,767 | 6 | 3 | 90 | 64 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 4/26/12 | CSPA | Tuolomne Utilities District | 4.65 | 3.51 | 132 / 28 | 184,157 / 3,890 | 15 | 4 | 2,401 | 67 |
| 5/1/12 | CRW | City of American Canyon | 5.00 | 3.50 | 8 / 5 | 44,900 / 11,526 | 3 | 2.7 | 461 | 169 |
| 5/7/12 | CSPA | City of Redding | 4.68 | 3.48 | 79 / 32 | 412,125 / 51,727 | 4 | 2 | 967 | 163 |
| 6/4/12 | CRW | City of Benicia | 5.10 | 3.41 | 74 / 60 | 26,320 / 9,349 | 6 | 8 | 185 | 98 |
| 7/2/12 | CRW | Cupertino Sanitary District | 5.17 | 3.33 | 69 / 52 | 46,364 / 37,744 | 4.6 | 5.4 | 151 | 191 |
| 7/11/12 | CSPA | City of Modesto | 4.86 | 3.30 | 288 / 59 | 202,355 / 28,234 | 9 | 3 | 205 | 42 |
| 7/17/12 | CRW | City of Santa Clara | 5.21 | 3.29 | 19 / 17 | 7,041 / 25,530 | 1 | 2 | 11 | 66 |
| **11/13/12** | CRW | **City of Antioch** | **5.20** | **2.96** | **189 / 172** | **18,991 / 647,041** | **7** | **12** | **34** | **2,052** |
| 1/3/13 | CRW | Delta Diablo SnD | 5.68 | 2.82 | 21 / 8 | 24,307 / 183,931 | 5 | 4 | 22 | 342 |
| 4/4/13 | CRW | Central Contra Costa SD | 5.93 | 2.57 | 322 / 121 | 107,823 / 134,409 | 4 | 3 | 40 | 114 |
| 4/12/13 | CRW | Town of Windsor | 5.95 | 2.55 | 15 / 2 | 14,475 / 283 | 3 | 0.8 | 85 | 4 |
| 5/10/13 | CRW | City of Willits | 6.03 | 2.48 | 14 / 4 | 615 / 860 | 6 | 4 | 20 | 69 |
| **6/28/13** | CRW | **City of Eureka** | **6.16** | **2.34** | **26 / 10** | **138,885 / 14,889** | **2.41** | **2.44** | **451** | **127** |
| 11/14/13 | CRW | City of Grass Valley | 6.20 | 1.96 | 44 / 24 | 109,202 / 7,150 | 11 | 19 | 1,408 | 292 |
| 12/5/13 | CRW | City of Stockton | 6.26 | 1.90 | 1,184 / 269 | 411,439 / 72,047 | 13 | 10 | 225 | 130 |
| 4/11/14 | CRW | City of Red Bluff | 6.61 | 1.56 | 41 / 15 | 31,702 / 74,174 | 8 | 12 | 355 | 3,533 |
| 6/10/14 | CRW | City of Laguna Beach | 7.44 | 1.39 | 66 / 19 | 810,290 / 7,914 | 9 | 14 | 6,052 | 316 |
| 7/31/14 | CRW | City of Carlsbad | 7.58 | 1.25 | 48 / 15 | 7,658,304 / 945 | 2 | 4 | 14,557 | 11 |
| 8/21/14 | CRW | Leucadia Wastewater District | 7.64 | 1.19 | 16 / 2 | 113,405 / 1,224 | 1 | 0.8 | 248 | 17 |
| 11/4/14 | CRW | Coachella Valley WD | 7.18 | 0.99 | 61 / 5 | 1,974,144 / 15,310 | 0.7 | 0.4 | 1,016 | 57 |
| 11/4/14 | CRW | Salton CSD (Salton Oxidation Basin CS) | 7.18 | 0.99 | 24 / 0 | 259,750 / 0 | 1 | 0 | 8,412 | 0 |
| 11/4/14 | CRW | Salton CSD (Desert Shores CS) | 7.18 | 0.99 | 3 / 0 | 9,700 / 0 | 0.7 | 0 | 1,120 | 0 |
| 11/24/14 | SFBk | City of San Jose | 7.57 | 0.93 | 1,351 / 77 | 613,876 / 150,752 | 8 | 4 | 81 | 161 |
| 12/12/14 | CRW | City of Beaumont | 7.95 | 0.88 | 30 / 0 | 427,622 / 0 | 2 | 0 | 1,538 | 0 |
| 1/13/15 | CRW | Sonoma Valley County SnD | 7.70 | 0.80 | 103 / 5 | 1,385,981 / 1,070 | 8 | 4 | 4,024 | 30 |
| 1/21/15 | CRW | City of Santa Rosa | 7.73 | 0.77 | 35 / 2 | 56,472 / 3,119 | 0.8 | 0.5 | 43 | 24 |
| **1/28/15** | CRW | **Eastern Municipal WD** (Temecula Valley Regional CS) | **8.07** | **0.76** | **32 / 0** | **417,717 / 0** | **0.8** | **0** | **241** | **0** |
| **1/28/15** | CRW | **Eastern Municipal WD** (Eastern Municipal WD CS) | **8.07** | **0.76** | **39 / 2** | **1,339,523 / 14,400** | **0.4** | **0.2** | **291** | **33** |

**Acronyms used in agency names:**

| | |
|---|---|
| a.k.a. | Also known as |
| CS | Collection System |
| CSD | Community Services District |
| MID | Municipal Improvement District |
| MUD | Municipal Utility District |
| PUD | Public Utility District |
| SD | Sanitary District |
| SnD | Sanitation District |
| WD | Water District |

**Acronyms for citizen plaintiff names**

| | |
|---|---|
| CRW | California River Watch *(formerly Northern CRW)* |
| CSPA | California Sportfishing Protection Alliance |
| SFBk | San Francisco Baykeeper |
| Other | "Other" primary plaintiff |

## 1. Before-and-after spill rate

Spill rate for the period after citizen action commenced was better (lower) than spill rate for the period before for 81% of the collection system / citizen action pairs we were able to analyze (**Figure 40**). For 19% of pairs, spill rate was higher (worse) after the initiation of citizen enforcement action. Percent reductions of 40 to 50% were most common (**Figure 40.B**).

For SSOs reported as reaching surface water, spill rate for the period after citizen action commenced was better than spill rate for the period before for 66% of collection system/ citizen action pairs (**Figure 41**).

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Spill rate was higher after the initiation of citizen enforcement action for 3 4% of pairs. Percent reductions of 90 to 100% were most common (**Figure 41.B**).

**Figure 40. Differences in spill rate following citizen enforcement action.** (**A**) For each collection system / citizen action pair, the bubble chart demonstrates the relationship between the spill rate for the period before the initiation of the citizen action (spill rate before) and the spill rate for the period after the initiation of citizen action (spill rate after). Bubble size shows the relative number of SSOs reported during the entire period of record for the collection system. Bubble color denotes the plaintiff (see color key in **B**). An inset provides a better view of the points falling within the dashed square in the lower left corner of the chart. (**B**) The column chart shows the number of collection system/citizen action with results that fall within each range of percent reduction in spill rate. Positive values denote post-citizen action reductions, while negative values signal increases. For both **A** and **B**, the heavy black line marks the boundary between spill rate reductions (better spill rate) to the right of the line and spill rate increases (worse spill rate) to the left.

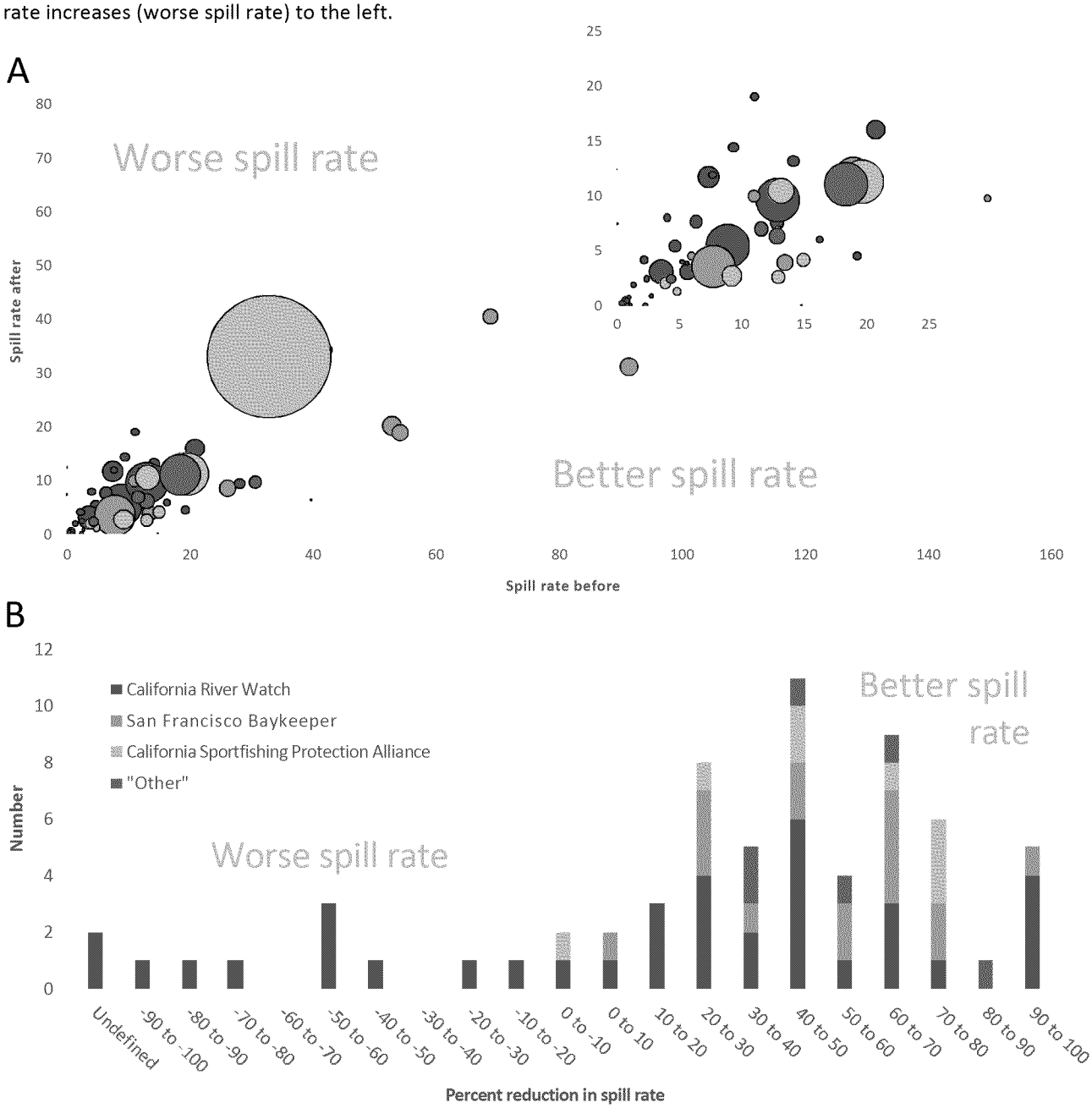




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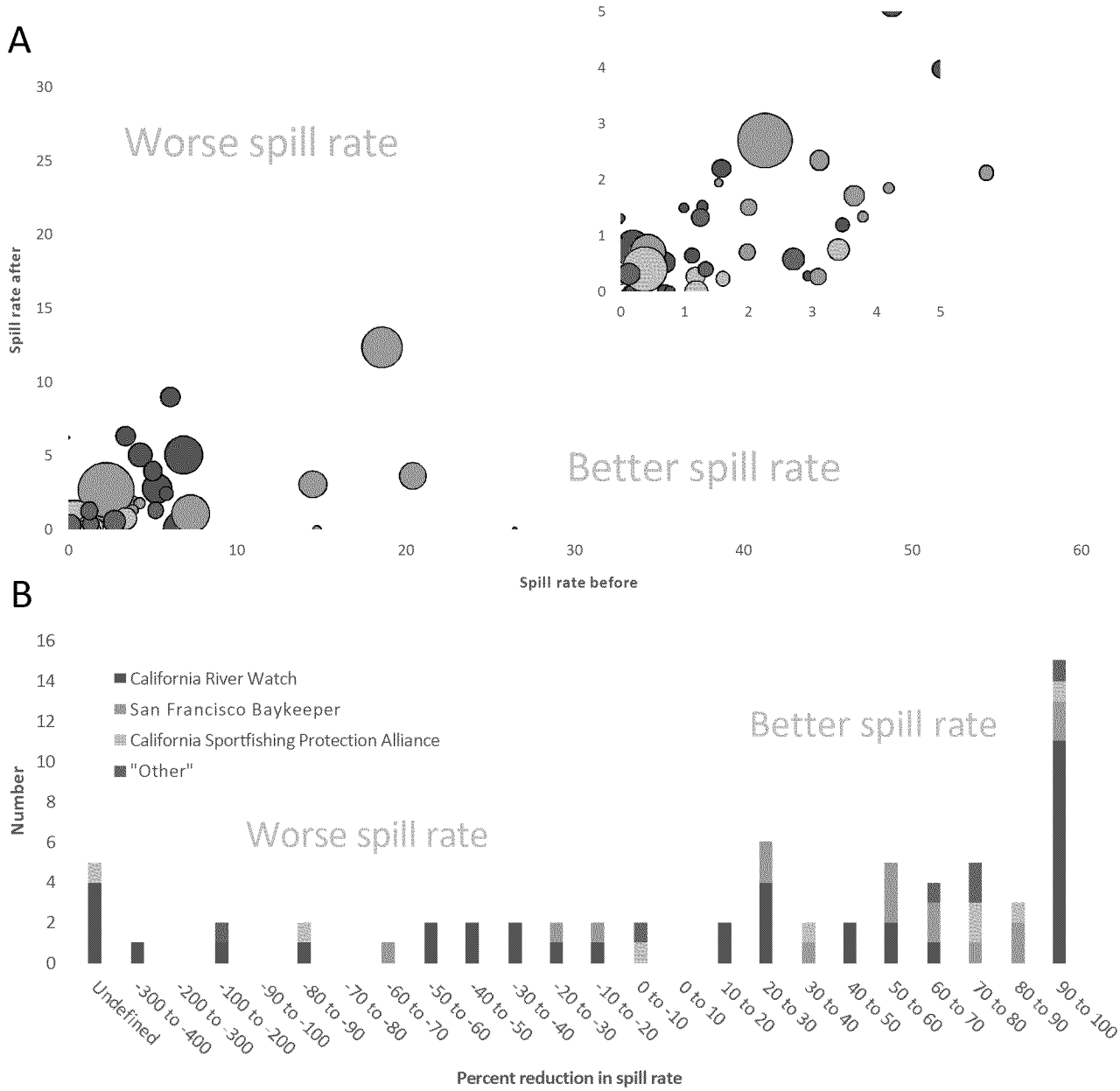
**Figure 41. Differences in spill rate for SSOs reported as reaching surface water following citizen enforcement action.** (**A**) For each collection system / citizen action pair, the bubble chart demonstrates the relationship between the spill rate for the period before the initiation of the citizen action (spill rate before) and the spill rate for the period after the initiation of citizen action (spill rate after) for SSOs reported as reaching surface water. Bubble size shows the relative number of SSOs reported as reaching surface water during the entire period of record for the collection system. Bubble color denotes the plaintiff (see color key in **B**). An inset provides a better view of the points falling within the dashed square in the lower left corner of the chart. (**B**) The column chart shows the number of collection system/citizen action with results that fall within each range of percent reduction in spill rate for SSOs reported as reaching surface water . Positive values denote post-citizen action reductions, while negative values signal increases. For both **A** and **B**, the heavy black line marks the boundary between spill rate reductions (better spill rate) to the right of the line and spill rate increases (worse spill rate) to the left.



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### 2. Before-and-after spill volume rate

Spill volume rate exhibited similar, but less pronounced, trends as spill rate.

Spill volume rate for the period after citizen action commenced was better (lower) than spill rate for the period before for 69% of the collection system / citizen action pairs we were able to analyze (**Figure 42**). For 31% of pairs, spill rate was higher (worse) after the initiation of citizen enforcement action. Percent reductions of 90 to 10% were most common (**Figure 42.B**). The distribution shows most cases falling into the highest and lowest categories, and fewer in the middle range. This is likely due in part to the potential volatility of the spill volume rate metric, given the substantial influence of even a single anomalously large SSO.

For SSO volume reported as reaching surface water, spill volume rate for the period after citizen action commenced was better than spill volume rate for the period before for 60% of collection system/ citizen action pairs (**Figure 43**). Spill rate was higher after the initiation of citizen enforcement action for 37% of pairs. Again, percent reductions of 90 to 100% were most common, and the data were again weighted toward the high and low ends (**Figure 43.B**).



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**Figure 42. Differences in spill volume rate following citizen enforcement action.** (**A**) For each collection system / citizen action pair, the bubble chart demonstrates the relationship between the spill volume rate for the period before the initiation of the citizen action (spill volume rate before) and the spill volume rate for the period after the initiation of citizen action (spill volume rate after). Bubble size shows the relative volume of SSOs reported during the entire period of record for the collection system. Bubble color denotes the plaintiff (see color key in **B**). (**B**) The column chart shows the number of collection system/citizen action with results that fall within each range of percent reduction in spill volume rate. Positive values denote post-citizen action reductions, while negative values signal increases. For both **A** and **B**, the heavy black line marks the boundary between spill volume rate reductions (better spill volume rate) to the right of the line and spill volume rate increases (worse spill volume rate) to the left.

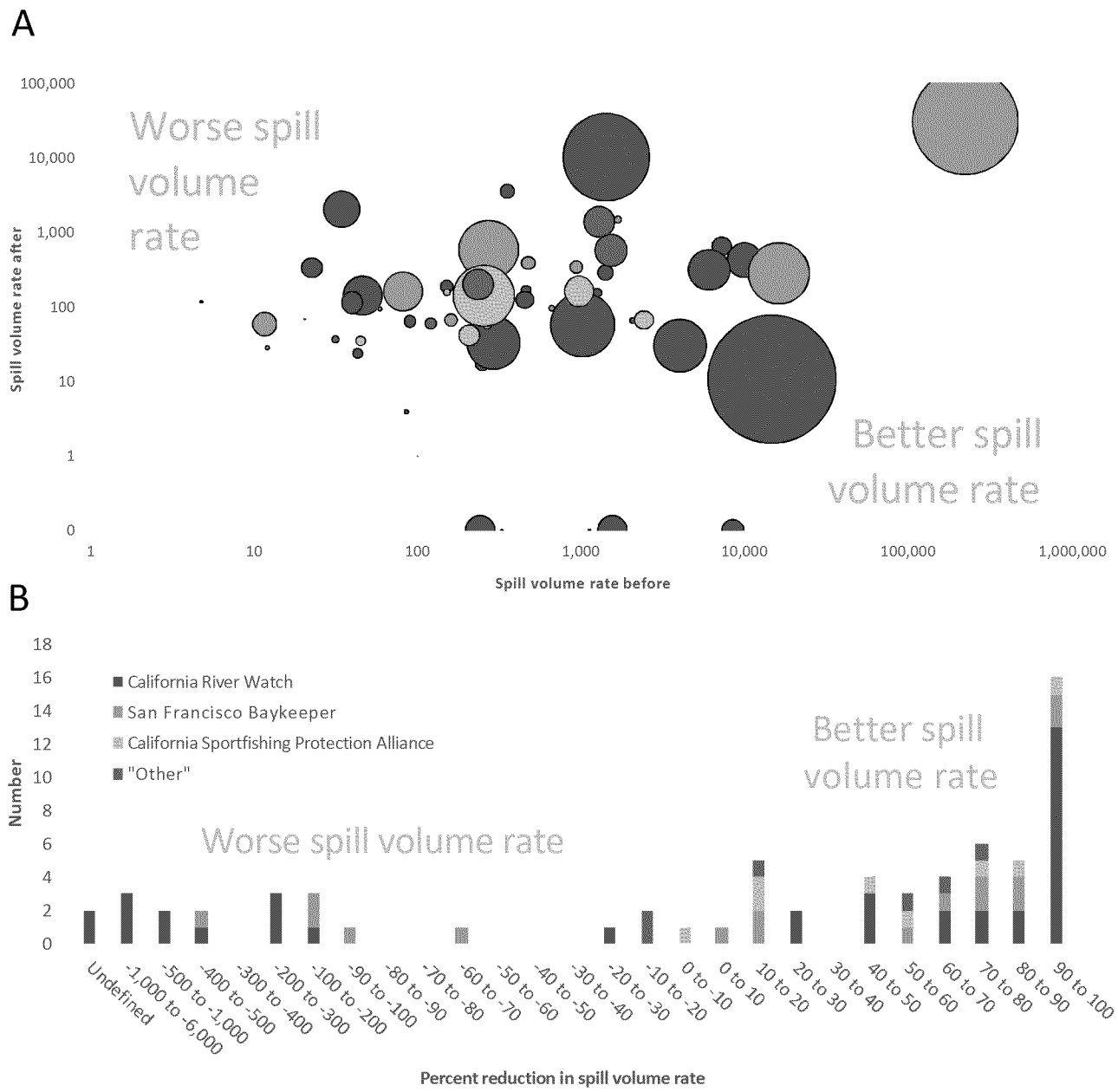




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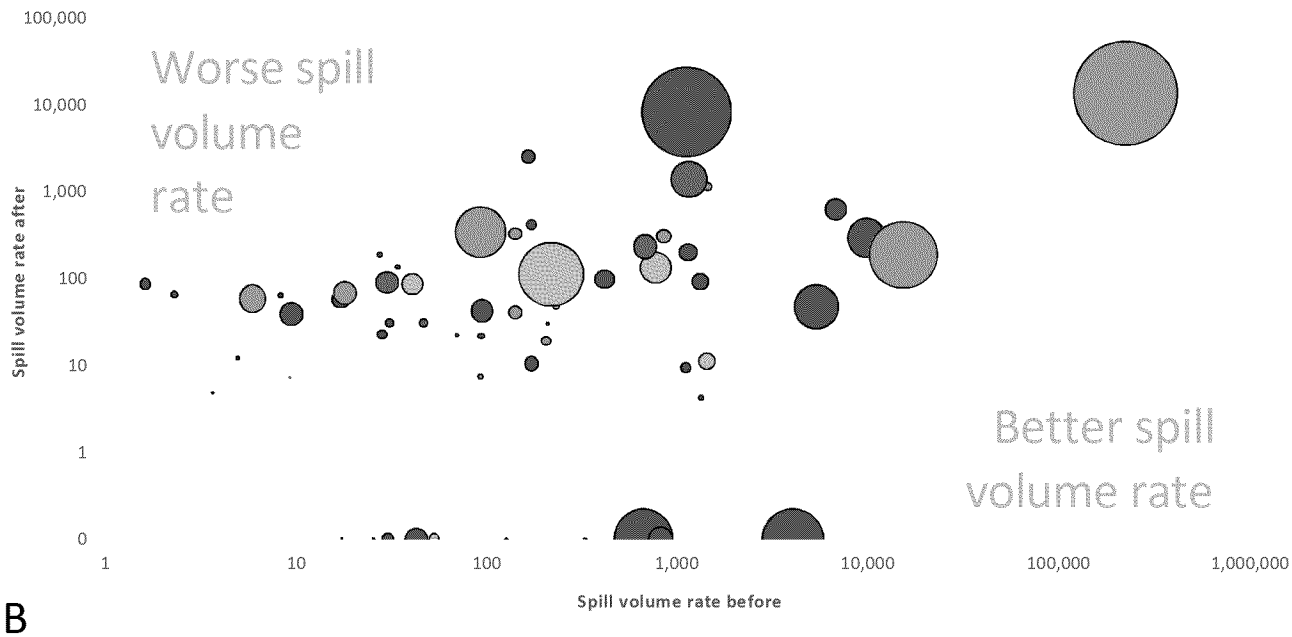
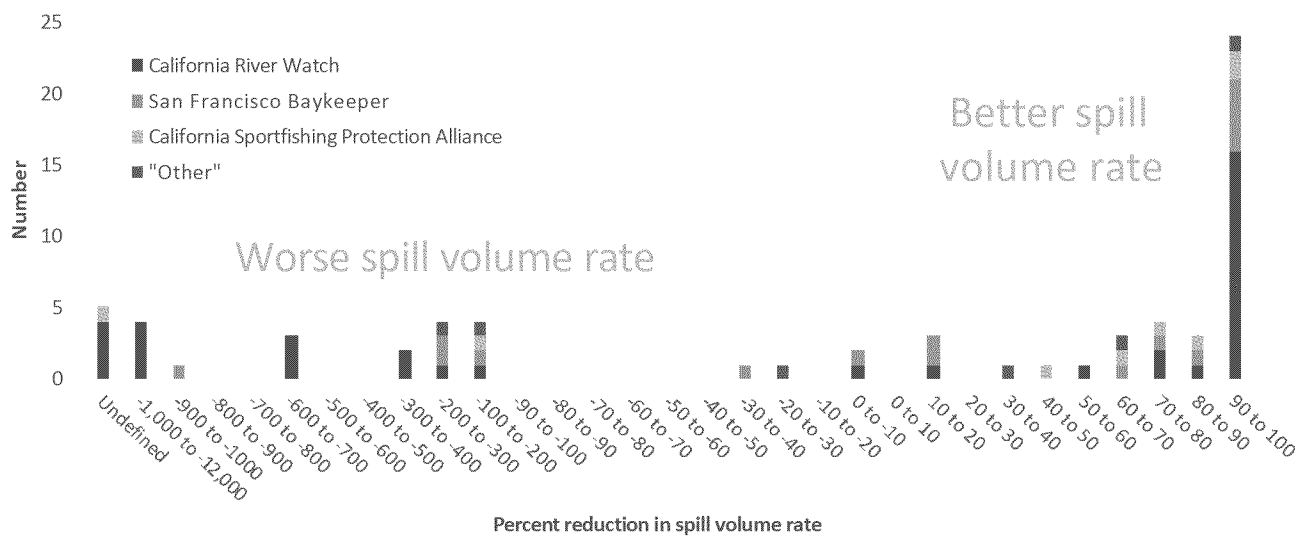
**Figure 43. Differences in spill volume rate for SSO volume reported as reaching surface water following citizen enforcement action.** (**A**) For each collection system / citizen action pair, the bubble chart demonstrates the relationship between the spill volume rate for the period before the initiation of the citizen action (spill volume rate before) and the spill volume rate for the period after the initiation of citizen action (spill volume rate after) for SSOs reported as reaching surface water. Bubble size shows the relative SSO volume reported as reaching surface water during the entire period of record for the collection system. Bubble color denotes the plaintiff (see color key in **B**). (**B**) The column chart shows the number of collection system/citizen action with results that fall within each range of percent reduction in spill volume rate for SSO volume reported as reaching surface water. Positive values denote post-citizen action reductions, while negative values signal increases. For both **A** and **B**, the heavy black line marks the boundary between spill volume rate reductions (better spill volume rate) to the right of the line and spill volume rate increases (worse spill volume rate) to the left.

A




B



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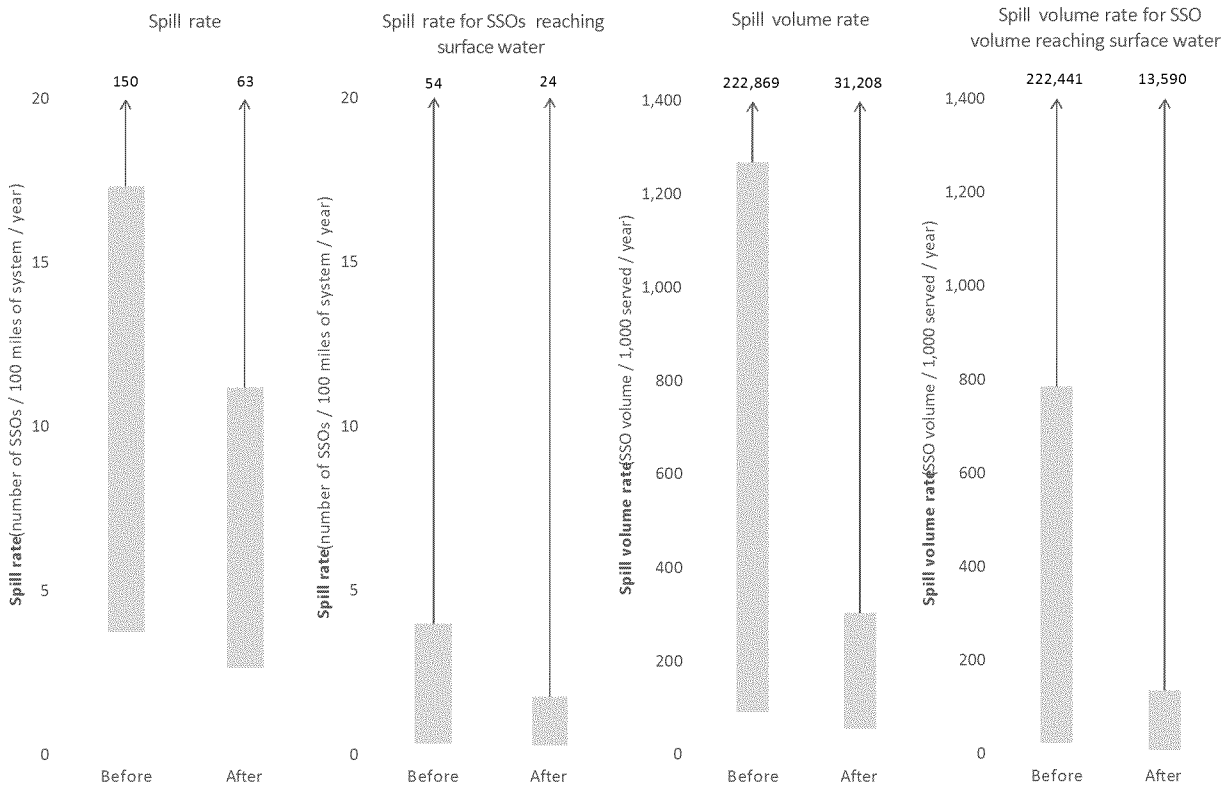
### 3. Summary statistics for collection system / citizen action pairs

This section provides summary statistics for performance metrics before and after the initiation of citizen enforcement. For each time interval, we identified the interquartile range, median, minimum, and maximum for spill rate, spill rate for SSOs reported as reaching surface water, spill volume rate, and spill volume rate for SSO volume reported as reaching surface water, shown in box and whisker plots, below. For each metric, the interquartile ranges of before and after data overlap but are different. In each case, the first quartile, median, third quartile, and maximum for the period afterfalls below the corresponding value for the period before.

**Figure 44. Summary statistics for comparative spill metrics before and after citizen enforcement actions.** The lower boundary of each box marks the 1st quartile of the data, the line within the box marks the median value, the upper boundary of the box marks the 3rd quartile, and the whiskers extend to the highest and lowest values. For each metric, statistics for the period before the initiation of citizen action are shown on the left and statistics for the period afterward are shown on the right.




### 4. Import of post-citizen-enforcement changes in collection system performance

The results above demonstrate correlations between citizen enforcement action and improved collection system performance metrics that are consistent with a hypothesis that citizen enforcement may have played a role in performance improvements in many cases. However, as explained elsewhere in this report (see, e.g., **Box 5 and Chapter 10**), many other factors can and do influence collection system performance, and correlation does not equate to causation.

Our methodology necessarily includes many oversimplifications We compare average performance metrics for two time periods. For some collection system / citizen action pairs, the "before" interval is short and potentially non-representative. For others, the "after" interval is short and potentially non -representative. In some cases, important changes in performance metrics within each interval are masked by the average value. Additionally, some collection system improvements may be immediately implementable, while others may



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require a much longer time frame to implement and see reflected in system performance.

Finer-scale analysis that includes considerably more contextual information is needed to gain a real understanding of the likely effects of a particular citizen enforcement effort on collection system management and performance.

## C. Citizen enforcement examples

Acknowledging that many factors can affect system performance and the details of individual enforcement actions and the specific circumstances of the collection systems they address are critically important, we present a series of brief case examples here.

The point of these examples is not to single out particular parties as good or bad actors, but to illustrate the variation in circumstances surrounding the following trends in before-and-after collection system performance (discussed above, in **Part B** of this chapter):

1. Performance metrics improved after some actions were initiated
2. Performance metrics did not change substantially or were mixed after some actions were initiated
3. Performance metrics worsened after initiation of some actions

Additionally, we provide examples of citizen enforcement actions that were initiated before (or early in the history of) the SSO database or too close to the end of our dataset to capture an adequate "after" sample.

**BOX 7.** Explanation of information contained in figures for examples

For each example given in **Part C** of this chapter, we present a chart that graphically displays 5 forms of data plotted through time (note that the label for each year is centered on January 1). SSO data and spill rate calculations are described in **Chapter 8.A and B**.

- SSO occurrence — The band resembling a barcode at the top of each chart is a "rug plot" that displays a thin line for each SSO reported to the SSO Database between the time reporting was first required for the system and December 18, 2015. It provides a quick visual overview of the change in SSO frequency over time.
- Monthly variation in spill rate — The panel below the rug plot charts changes in monthly spill rate (presented in units of SSOs per 100 miles of collection system per year) from the time reporting was first required for the system through October 2015.
- SSO volume — Each point in the main panel represents the volume of each SSO reported to the SSO Database between the time reporting was first required for the system and December 18, 2015. Brown diamonds (♦) denote SSOs identified as reaching surface water in the SSO Database (Category 1 SSOs). Black circles (•) denote Category 2 and Category 3 SSOs. (See **Chapter 2.B.1.c.**)
- Precipitation — To provide context for understanding wet weather's potential influence on inflow and infiltration into the collection system, t he blue curve in the main panel represents smoothed local precipitation data.[514]
- Citizen enforcement dates — The following are indicated in the main panel, as applicable:
  - – – – NOI and supplemental NOI letter dates
  - – – – Filing dates for complaints and amended complaints
  - – – – Effective dates of settlement agreements/consent decrees
  - ▒ Settlement agreement/consent decree duration
  - – – – Termination dates of settlement agreements/consent decrees
  - – – – Effective dates of formal government enforcement actions related to SSOs (see **Chapter 7**).



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### 1. Performance metrics improved after some actions were initiated

For some agencies, collection system performance indicators calculated based on reported SSOs and SSO volumes improved for the period after the initiation of citizen enforcement action, relative to the period before it (see **Part B** of this chapter). Here are 5 examples illustrating very different sets of circumstances.

Plaintiff: California Sportfishing Protection Alliance
Collection system agency: El Dorado Irrigation District (Deer Creek, El Dorado Hills collection systems)
Action type: Settled lawsuit (10/27/2009 NOI)

California Sportfishing Protection Alliance sent an NOI in late 2009 and sued El Dorado Irrigation District in early 2010 (see **Figure 45**), alleging 219 SSOs and other CWA violations in the District's Deer Creek and El Dorado Hills collection systems from October 2004 to October 2009. The parties settled the case less than 8 months later. The settlement agreement included $120,000 in attorneys' fees and costs, a $120,000 mitigation payment to a third-party nongovernmental organization for distribution to a conservancy group to acquire land for a preserve, and at least $2,000 per year for settlement compliance monitoring. The primary injunctive terms were SSO reduction performance standards, submission and implementation of an SSO Reduction Action Plan if the annual performance standards were not met, and recycled water program improvements. The agreement was designed to terminate in March 2016 unless the District triggered the early termination clause by achieving a spill rate less than or equal to 5 SSOs per 100 miles of collection system per year (the final SSO Reduction Performance Standard) for two annual reports in a row. The District dramatically reduced its long-term spill rate, and triggered the early termination clause by January 2012. According to the District's account, it accomplished the spill-rate reductions by purchasing an additional cleaning truck and reassigning existing staff to create "an additional dedicated pipe-cleaning crew" (for a total of 3 such crews).[515]

Before citizen enforcement action was initiated, the District's spill rate appeared to have a relatively strong seasonal signal, showing broad maxima during the wet seasons in 2008 and 2009. Afterward, the seasonal signal greatly reduced. The District's two collection systems showed some of the greatest improvements in spill rate (80% and 74% reductions, respectively) for the period after citizen enforcement action relative to the period before. The Deer Creek collection system also experienced a substantial reduction in spill volume rate (51%), while the El Dorado Hills collection system's spill volume rate worsened slightly (- 5%). For SSOs reported as reaching surface water (♦), the Deer Creek collection system reduced its spill rate 85%, and its spill volume rate 79%, while the El Dorado Hills collection system reduced its spill rate 35%, and its spill volume rate 68%.

In this case, citizen enforcement action appears likely to have helped push the District to rethink and reprioritize its maintenance practices, with positive and long-lasting results.[516]



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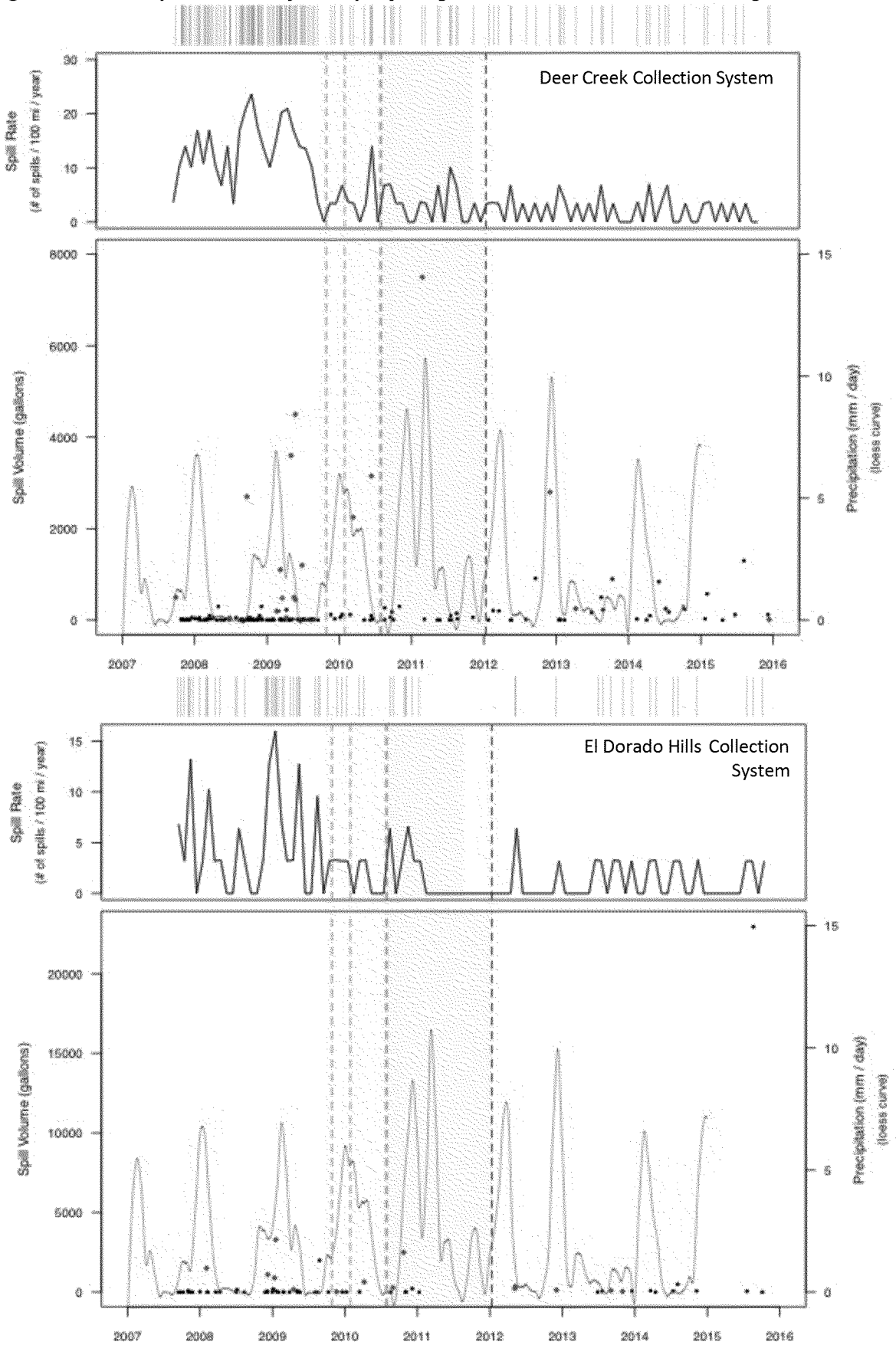
**Figure 45. Summary charts for *California Sportfishing Protection Alliance v. El Dorado Irrigation District***



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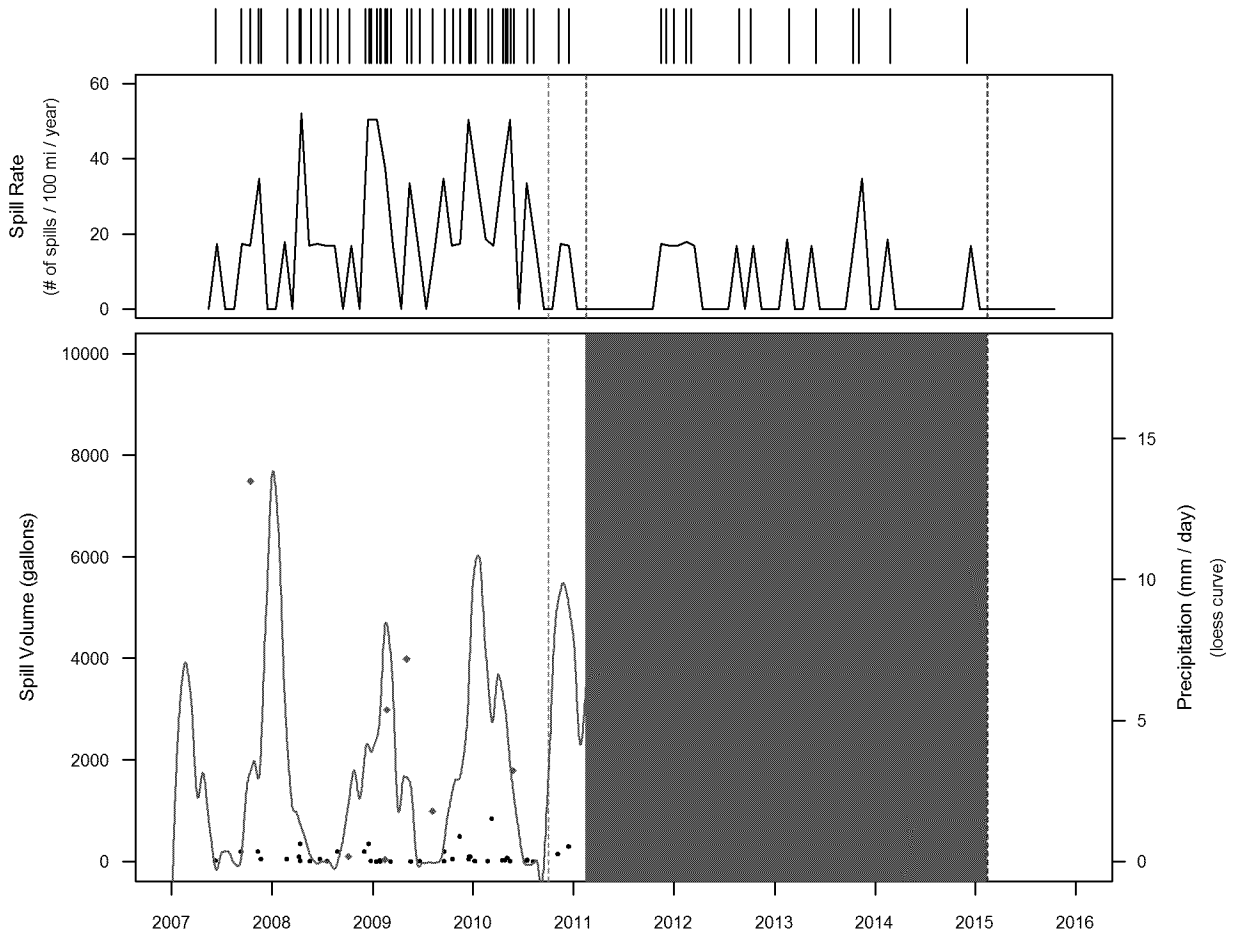
Plaintiff: California River Watch
Collection system agency: Brooktrails Township Community Services District
Action type: Pre-litigation settlement (10/1/2010 NOI)

California River Watch sent an NOI to Brooktrails Township Community Services District in late 2010(see **Figure 46**), alleging 37 reported (and additional unreported) SSOs, as well as continuous exfiltration from defects in the collection system, from October 2005 to October 2010. The parties settled without a lawsuit in early 2011. The settlement agreement required the District to (1) pursue adoption of a specific private sewer lateral inspection, testing, repair, and replacement ordinance; (2) install at least 2 smart manhole covers each year at critical locations (up to $10,000); (3) sample and test for fecal coliform in surface water upstream and downstream of (a) underlying sewer lines annually and (b) a substantial crack/break identified by CCTV inspection within 150 feet of surface water, taking the results into account in locating smart manholes; (4) hire a consultant to complete an annual environmental compliance audit, run a training session, and help identify smart manhole locations for 4 years (up to $10,000). River Watch received $19,000 to cover attorneys' fees and costs. The agreement terminated in early 2015.

Following the NOI, the District's spill rate decreased 77%, and its spill volume rate decreased 97%. For SSOs reported as reaching surface water (♦), spill rate decreased 90%, and spill volume rate decreased almost 100%.

**Figure 46. Summary chart for *California River Watch v. Brooktrails Township Community Services District*.**



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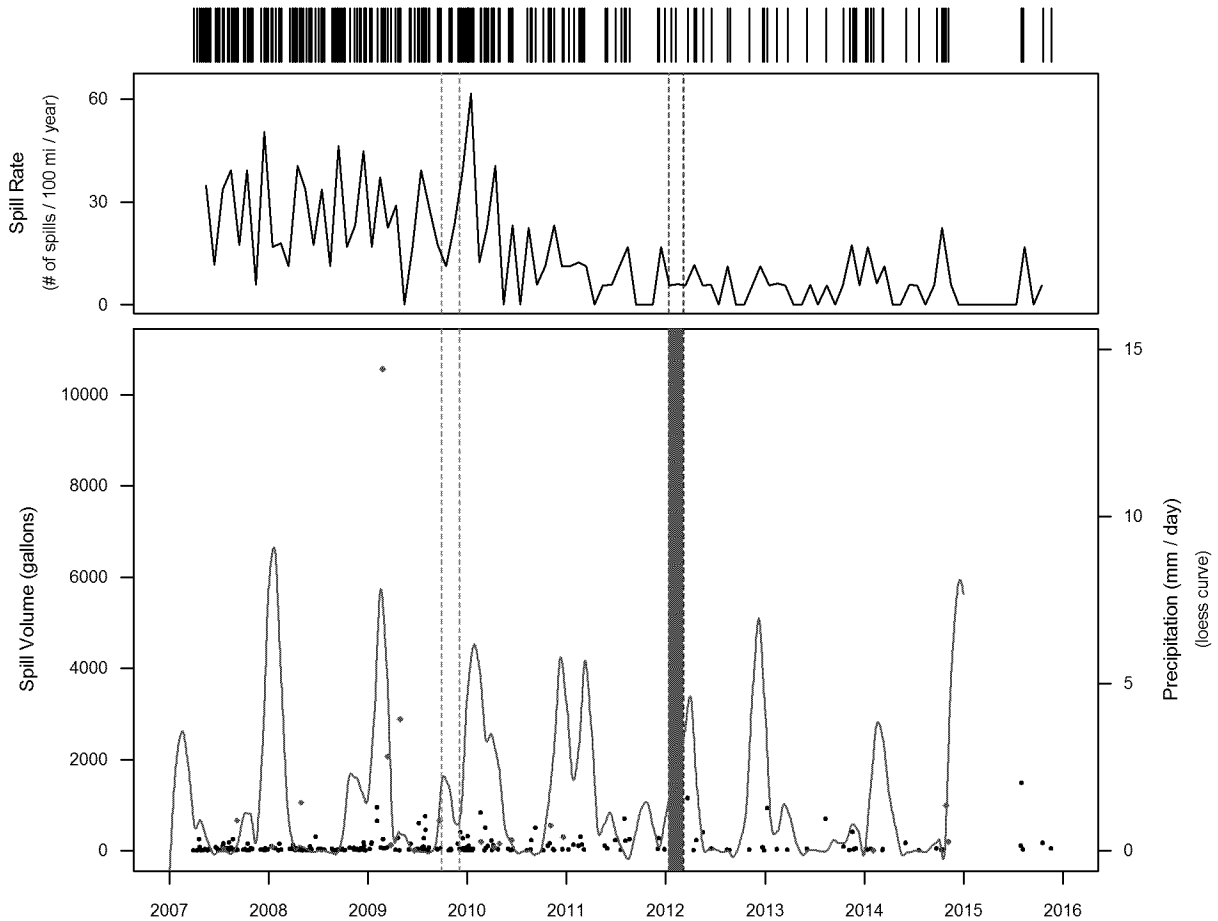
Plaintiff: San Francisco Baykeeper
Collection system agency: West Bay Sanitary District
Action type: Settled lawsuit (9/28/2009 NOI)

San Francisco Baykeeper sued West Bay Sanitary District in late 2009 (see **Figure 47**), alleging 286 SSOs from September 2004 to September 2009. The federal district court granted Baykeeper's motion for partial summary judgment with respect to 21 SSOs that straightforwardly discharged to waters of the United States and awarded the group $435,621.37 in interim attorneys' fees. The resulting 2012 settlement acknowledged that, over the course of the litigation, the District had made greatstrides, concluding that "West Bay has adopted and begun to implement a number of programs in line with the Settling Parties' experts' recommendations." Instead of substantive demands on the District, the settlement covered only Baykeeper's attorneys' fees and costs ($964,378.63) in exchange for ending the litigation. According to the District's current manager, "[s]tarting in 2009, roughly around the time of the Baykeeper lawsuit," it "added more staff and equipment to monitor, clean and maintain its collection system."[517] This time period saw major leadership changes, with an interim manager taking over operations prior to the lawsuit, and the current manager stepping in before the suit was settled.The District has arguedthat it had changed tack voluntarily and would have made the same level of improvements, with or without the lawsuit. However, given the District's past performance, and its ongoing SSO problems during the early part of the lawsuit, this claim would be difficult to verify.[518]

Following the NOI, the District's spill rate decreased 67%, and its spill volume rate decreased 76%. For SSOs reported as reaching surface water (♦), spill rate decreased 64%, and spill volume rate decreased 92%.

**Figure 47. Summary chart for *San Francisco Baykeeper v. West Bay Sanitary District*.**



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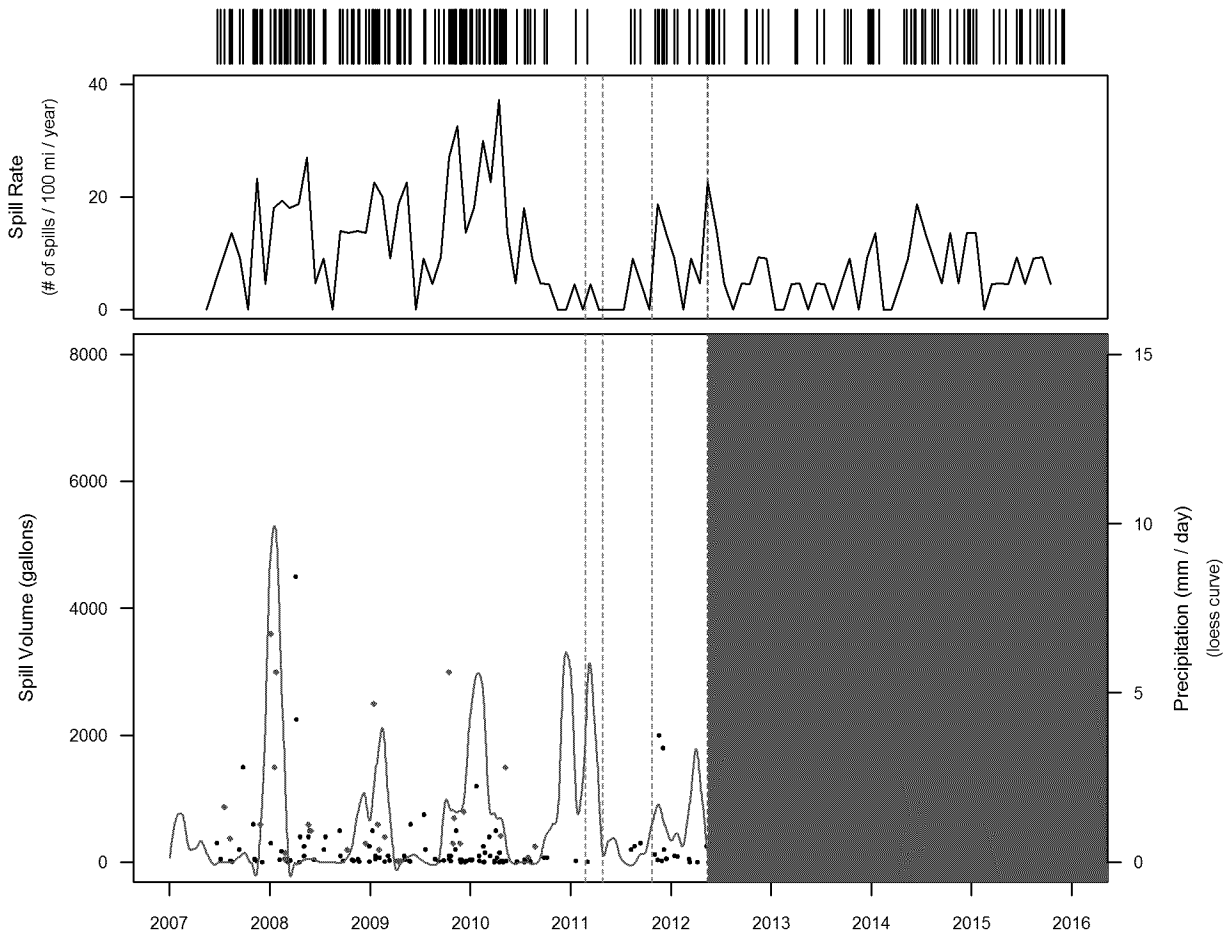
Plaintiff: Santa Barbara Channelkeeper
Collection system agency: City of Santa Barbara
Action type: Settled lawsuit (2/4/2011 NOI)

In 2011, Santa Barbara Channelkeeper sent an NOI and then sued the City of Santa Barbara (see **Figure 48**), alleging 171 SSOs, totaling about 56,000 gallons, from February 2006 to February 2011. Later in the year, the group sent a supplemental NOI that added allegations of exfiltration. The group had lobbied the City for over a decade regarding SSO problems and assessment of whether exfiltration contributed to the high levels of bacteria found in area creeks and at area beaches.[519] Beginning in 2004, the City collaborated with U.C. Santa Barbara researchers to identify the sources of bacteria, including exfiltration from sewer lines into the MS4.[520] They eventually discovered and repaired multiple instances of "sewers leaking into storm drains" between 2010 and 2012.[521] The parties settled in 2012. In addition to other injunctive provisions, the settlement agreement included SSO reduction performance standards, database development requirements, and a requirement that the City develop an Exfiltration Abatement Program that identifies and prioritizes pipe segments for repair, rehabilitation, and replacement if they meet four criteria (composition, spatial relationship to MS4 pipes, age or defect condition, and location above the water table).[522] The agreement is expected to terminate in 2017.

The City's spill rate rose, then dropped during the 2 years prior to Santa Barbara Channelkeeper's NOI. Since the complaint was filed, spill rate has varied, but has generally remained lower than before the action. Following the NOI, the District's spill rate and spill volume rate decreased 51%, and its spill volume rate decreased 50%. For SSOs reported as reaching surface water (♦), spill rate decreased 79%, and spill volume rate decreased 34%.

**Figure 48. Summary chart for *Santa Barbara Channelkeeper v. City of Santa Barbara.***



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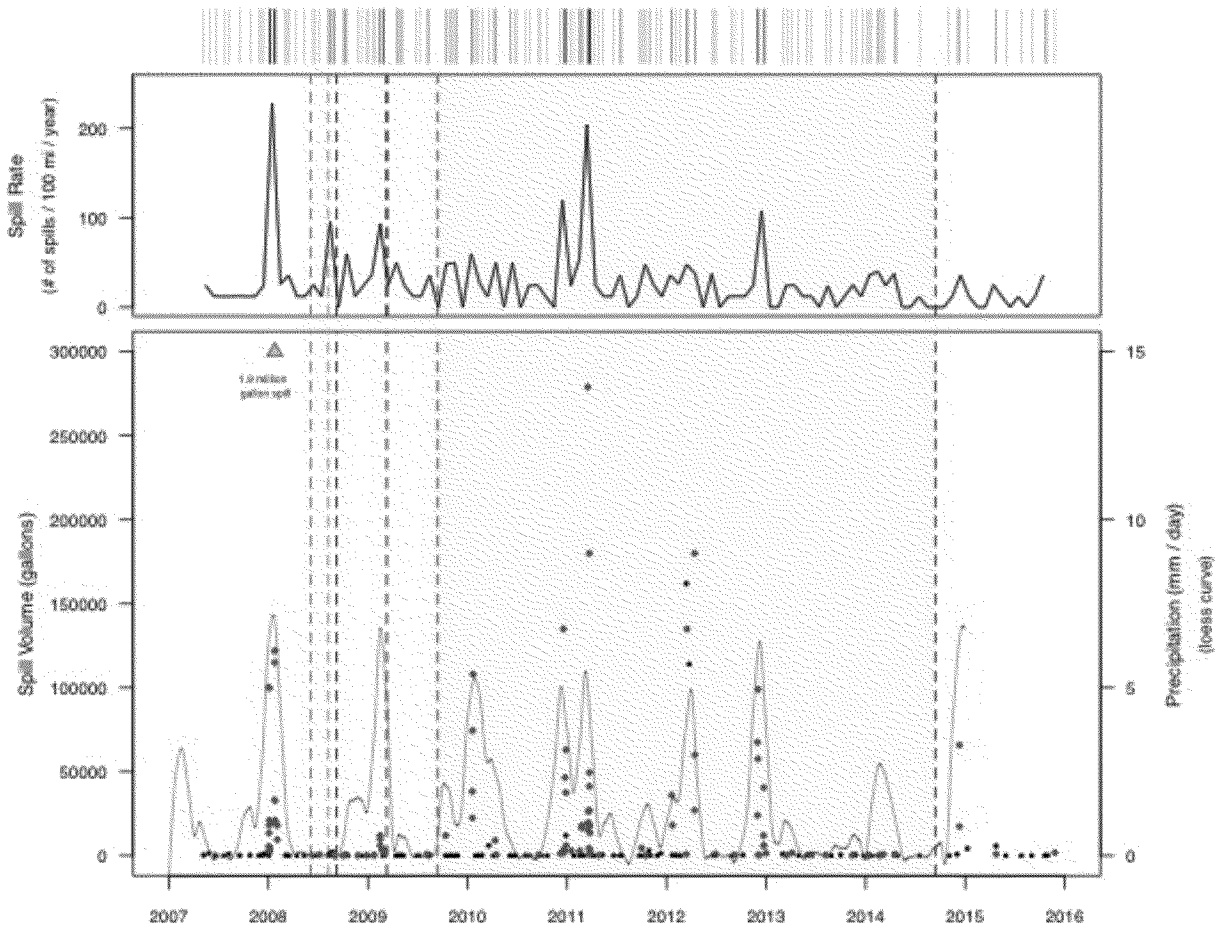
Plaintiff: San Francisco Baykeeper
Collection system agency: Town of Hillsborough
Action type: Settled lawsuit (6/5/2008 NOI)

In mid 2008, San Francisco Baykeeper sent an NOI and then sued the Town of Hillsborough (see **Figure 49**), alleging 85 SSOs, including 11 SSOs that entered the MS4, from June 2003 to June 2008. This included a very large (1.9 million gallon) SSOs in early 2008. During most wet seasons, both before and after citizen enforcement was initiated, the Town has experience d multiple large SSOs, suggesting that excessive inflow and infiltration are likely contributing factors. Both upper and lower laterals are privately owned, and are considered to be a significant source of inflow.[523] In September 2008, the Regional Board issued an ACL complaint regarding SSOs. In March 2009, the Board adopted an ACL settlement order and a CDO. The ACL order assessed a penalty of $405,000 for SSOs from January 2003 to January 2009, with $225, suspended pending that amount's use to fund a private sewer lateral inspection and rehabilitation program. Later in 2009, Baykeeper and the Town settled. The settlement agreement included SSO reduction performance goals and a variety of other requirements related to collection system maintenance and management. The agreement also included $25,000 of additional funding for the private sewer lateral repair loan program required by the ACL settlement, $25,000 directed to a third-party nongovernmental organization for distribution for activities that benefit the San Francisco Bay-Delta watershed, $15,000 for settlement compliance monitoring, and $200,000 in attorneys' fees and costs. The agreement terminated in 2014.[524]

Following the NOI, the District's spill rate decreased 24%, and its spill volume rate decreased 86%. For SSOs reported as reaching surface water (♦), spill rate decreased 33%, and spill volume rate decreased 94%.

**Figure 49. Summary chart for *San Francisco Baykeeper v. Town of Hillsborough.***



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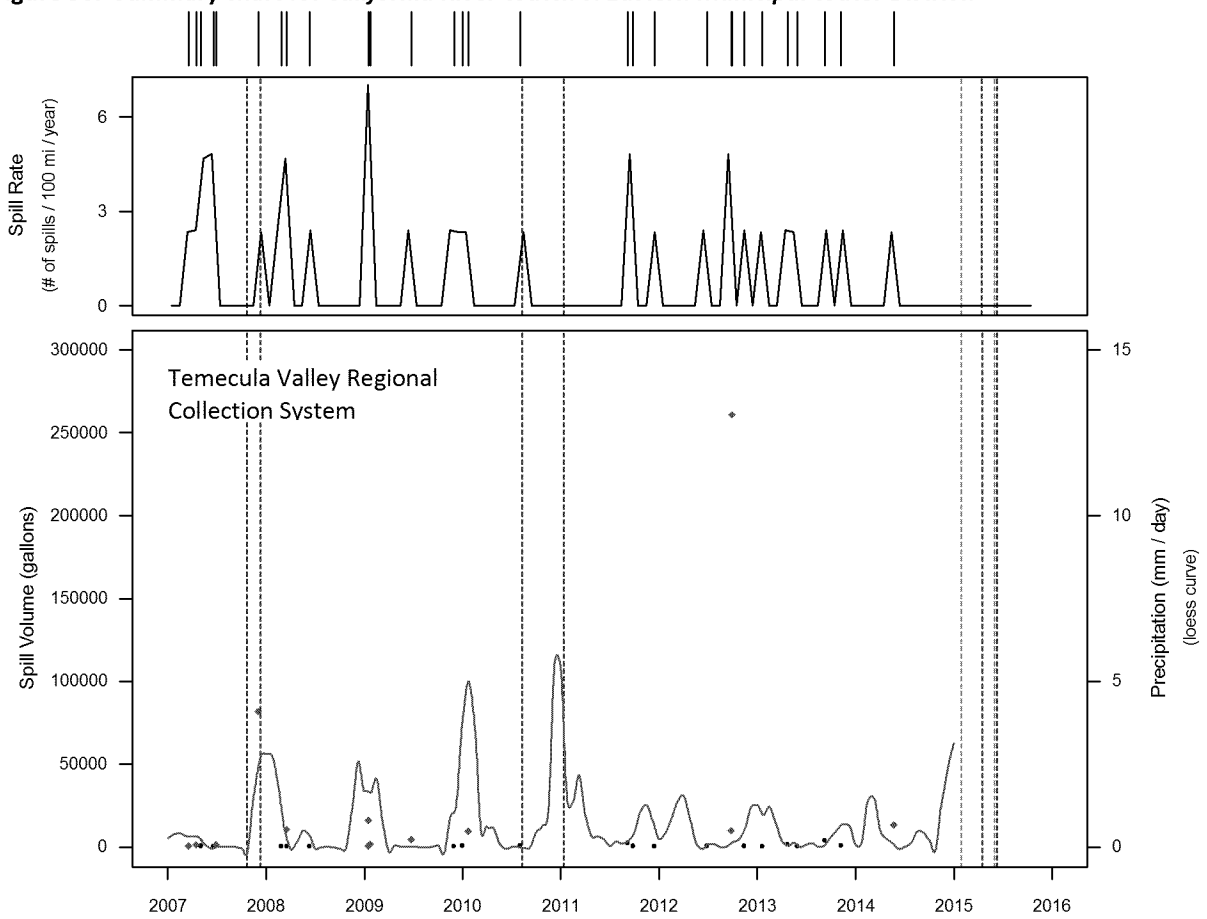
Plaintiff: California River Watch
Collection system agency: Eastern Municipal Water District
Action type: Lawsuit in progress as of June 2015 (1/28/2015 NOI)

In late 2007, the San Diego Regional Board issued an ACL complaint (see **Figure 50**) and assessed Eastern Municipal Water District's Temecula Valley Regional Collection System $53,500 in penalties for SSOs. California River Watch sent the District an NOI in January 2015, alleging effluent limitation violations, 43 SSOs totaling more than 1.6 million gallons (212,921 gallons reported as reaching surface waters), and continuous exfiltration from January 2010 to January 2015. The allegations addressed collection systems in 2 different regions (the Eastern Municipal Water District Collection System in Region 8 and the Temecula Valley Regional Collection System in Region 9). In April 2015, the Regional Board issued a stipulated ACL settlement for an SSO that went on for several months before being discovered in late 2012 and early 2013. River Watch filed a lawsuit against the District in early June 2015. The following day, the Regional Board adopted the ACL settlement order. This lawsuit was ongoing as of June 2015.

Between the NOI date and the end of October 2015, the Temecula Valley Regional Collection System's has had no SSOs, so it's spill rate and spill volume rate (overall and for SSO volume reaching surface water) both decreased 100%. Following the NOI date, the Eastern Municipal Water District Collection System's spill rate decreased 45%, and its spill volume rate decreased 89%. That collection system has reported no SSO volume reaching surface water since the NOI date, so spill rate and spill volume rate for SSO volume reaching surface water both decreased 100%.

**Figure 50. Summary chart for *California River Watch v. Eastern Municipal Water District*.**



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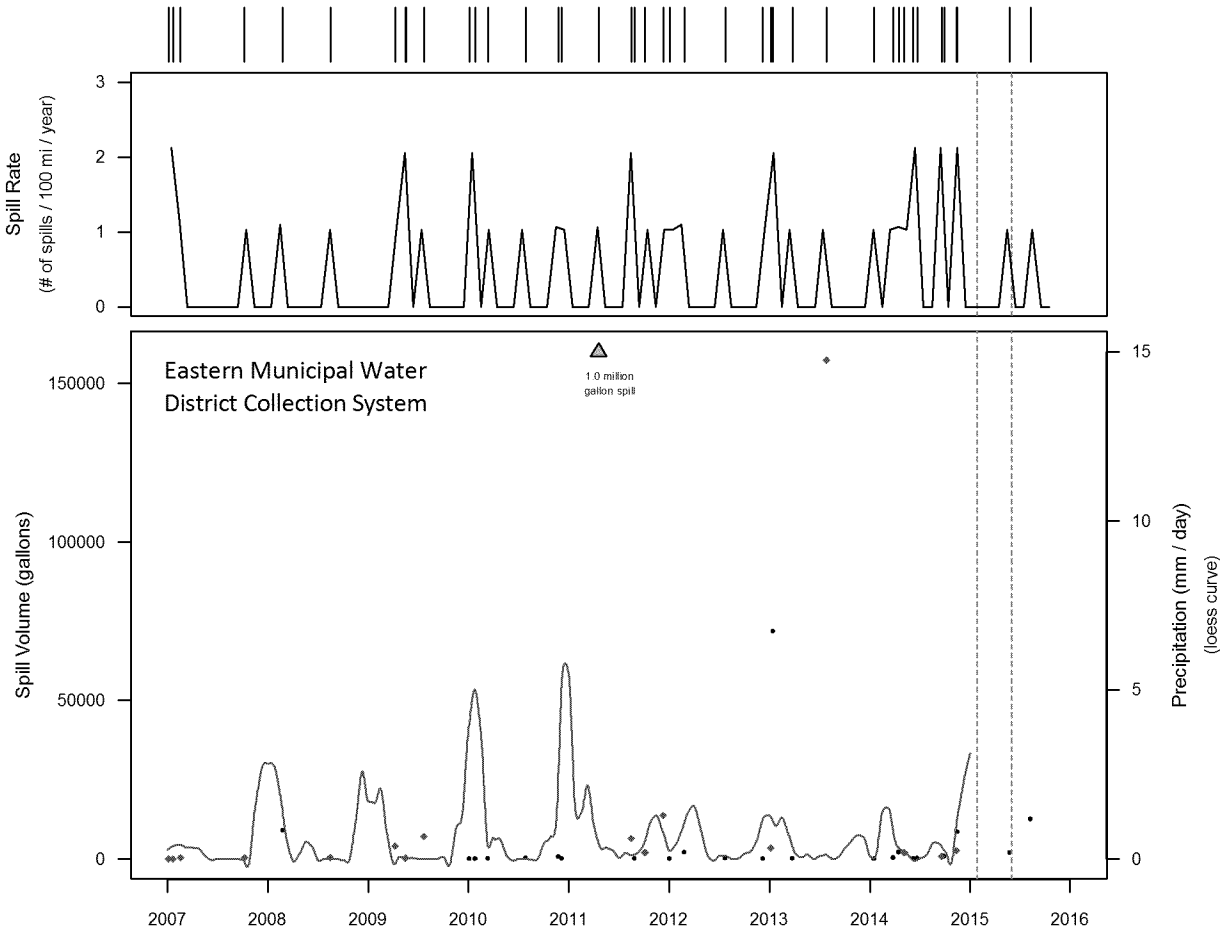

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### 2. Performance metrics did not change substantially or were mixed after some actions were initiated

For some agencies, collection system performance indicators calculated based on reported SSOs and SSO volumes did not appear to change significantly after the initiation of citizen enforcement action (see**Part B** of this chapter) or results were mixed.

Plaintiffs: United States of America, People of the State of California ex rel., California State Water Resources Control Board, San Francisco Bay Regional Water Quality Control Board
Intervener plaintiffs: San Francisco Baykeeper, Our Children 's Earth Foundation
Collection system agencies: East Bay Municipal Utility District and its satellite collection systems (City of Alameda, City of Albany, City of Berkeley, City of Emeryville, City of Oakland, City of Piedmont, and Stege Sanitary District)
Action type: Settled consolidated lawsuits (1/15/2009 and 12/3/2009 government complaints)

In January 2009, federal and state regulators filed a lawsuit against East Bay Municipal Utility District—one day after issuing a new NPDES permit prohibited discharges from the District's Wet Weather Facilities (see **Figure 51**).[525] At the same time, the parties filed a proposed stipulated order for preliminary relief. A few days later, the Regional Board adopted a CDO regarding the facilities. Toward the beginning of February, San Francisco Baykeeper and Our Children's Earth Foundation filed a motion to intervene, which the court granted the following month. In July, the court entered a stipulated order for preliminary relief. In October 2009, Our Children's Earth Foundation sent NOIs to 5 of the 7 satellite collection system agencies. In early December, the United States filed a lawsuit against all 7 agenciesA few weeks later, San Francisco Baykeeper filed a motion to intervene, and the court issued an order relatingthe two cases. In August 2011, the court entered a stipulated order for preliminary relief in the satellite systems case. In May 2013, the court ordered the cases consolidated. A little over a year later, the parties signed a final consent decreeaddressing all 8 defendants. The agreement was entered by the court and became effective in September 2014. It contained a wide variety of injunctive terms, which varied from defendant to defendant and provided for $180,000 in attorneys' fees and costs for the intervenors and $100,000 for the State and Regional Boards. It also included $30,000 for settlement compliance monitoring by the intervenors and $201,600 in civil penalties ($170,800 to the U.S. DOJ, $30,800 to the Regional Board). The agreemenis expected to terminate in 2036.

Changes in performance metrics for the agencies involved were mixed. Following initial complaint dates:

- East Bay Municipal Utility District's spill rate decreased 24%, but its spill volume rate increased 412%. For SSOs reported as reaching surface water (♦), spill rate increased 26%, and spill volume rate increased 908%.
- The City of Alameda's spill rate decreased 25%, but its spill volume rate increased 139%. For SSOs reported as reaching surface water (♦), spill rate decreased 25%, but spill volume rate increased 36%.
- The City of Albany's spill rate decreased 41%, but its spill volume rate increased 64%. For SSOs reported as reaching surface water (♦), spill rate decreased 56%, and spill volume ratedecreased 19%.
- The City of Berkeley's spill rate decreased 71%, and its spill volume rate decreased 58%. For SSOs reported as reaching surface water (♦), spill rate decreased 85%, and spill volume ratedecreased 71%.
- For all SSOs, and for SSOs reported as reaching surface water, the City of Emeryville's spill rate decreased 100%, and its spill volume rate decreased almost 100%.
- The City of Oakland's spill rate decreased 37%, but its spill volume rate increased 118%. For SSOs reported as reaching surface water (♦), spill rate increased 19%, and spill volume rateincreased 271%.
- The City of Piedmont's spill rate decreased 45%, and its spill volume rate decreased 85%. For SSOs reported as reaching surface water (♦), spill rate decreased 65%, and spill volume ratedecreased 85%.
- Stege Sanitary District's spill rate decreased 9%, and its spill volume rate decreased 6%. For SSOs reported as reaching surface water (♦), spill rate decreased 53%, but spill volume rate increased 6%.



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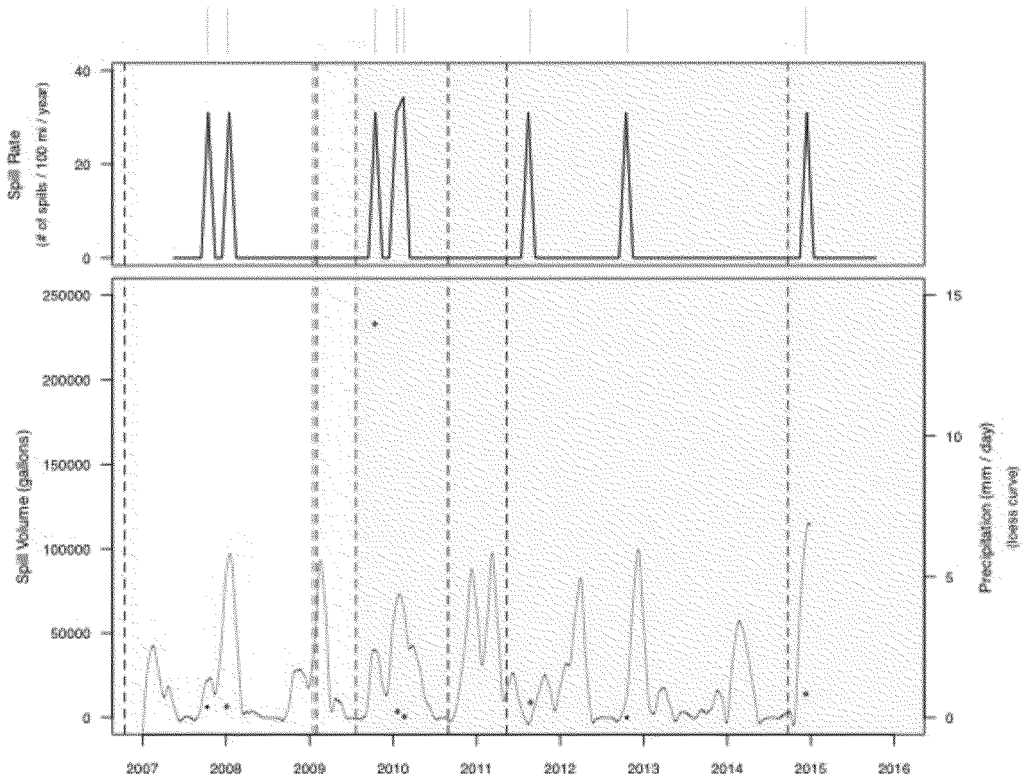
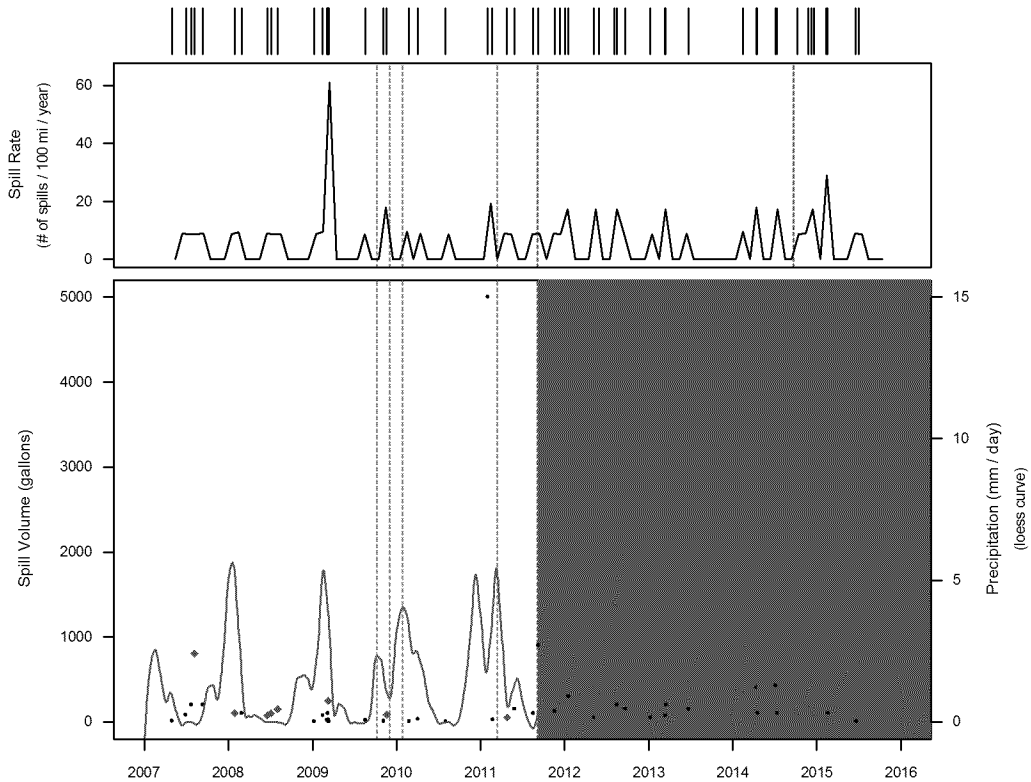
**Figure 51. Summary charts for *United States et al. v. East Bay Municipal Utility District and its 7 satellite collection systems.***

East Bay Municipal Utility District




City of Alameda



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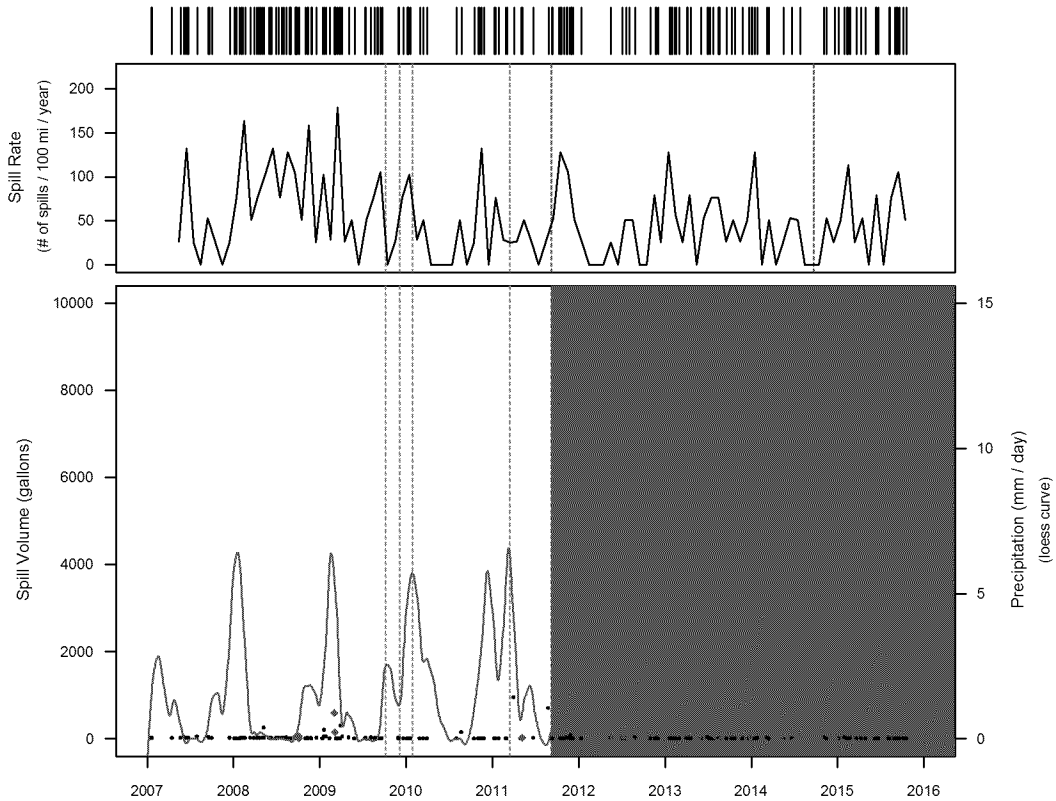
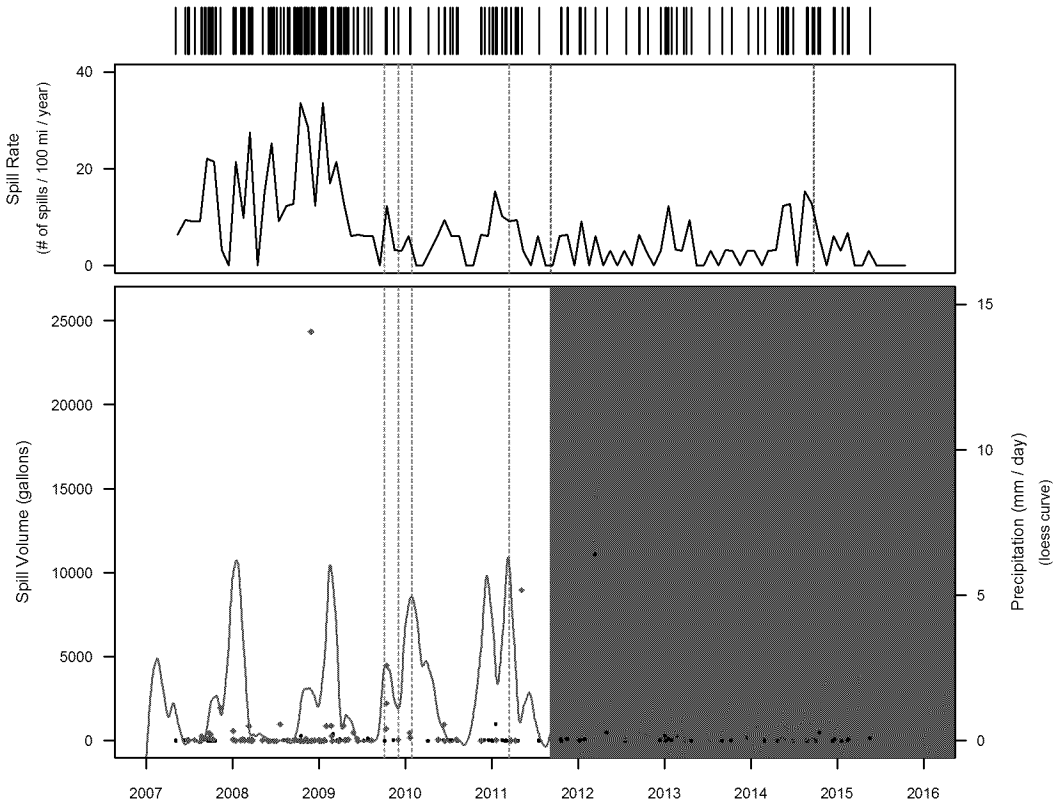
City of Albany




City of Berkeley



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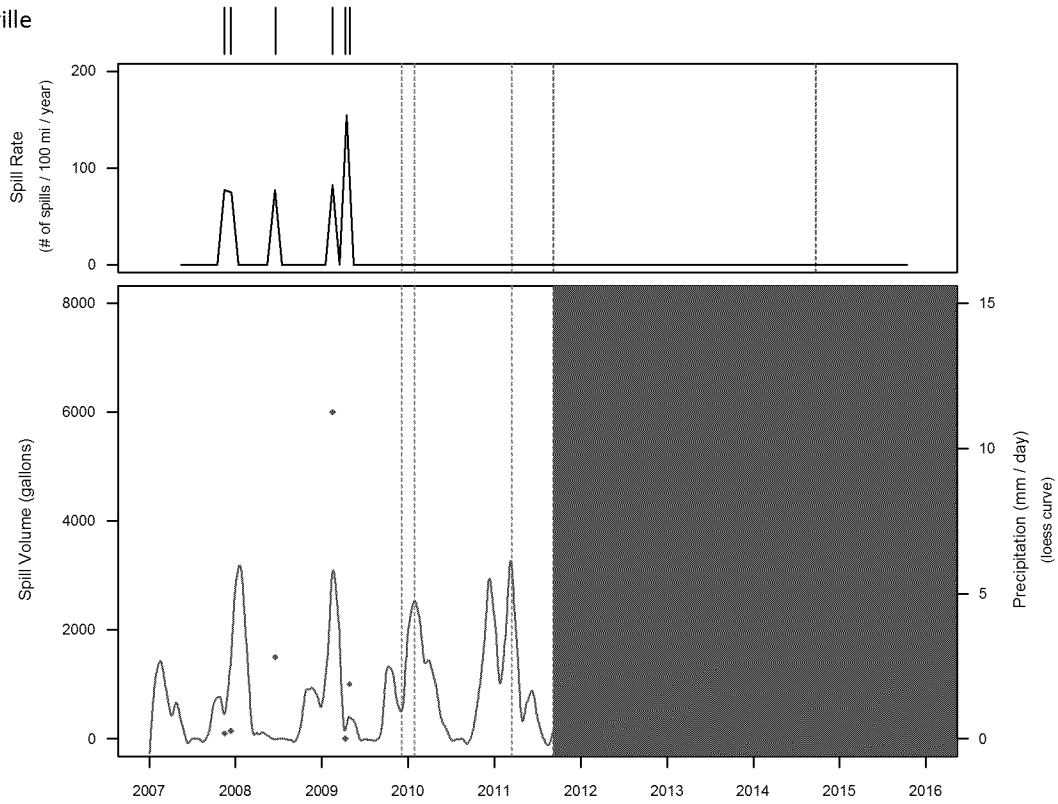
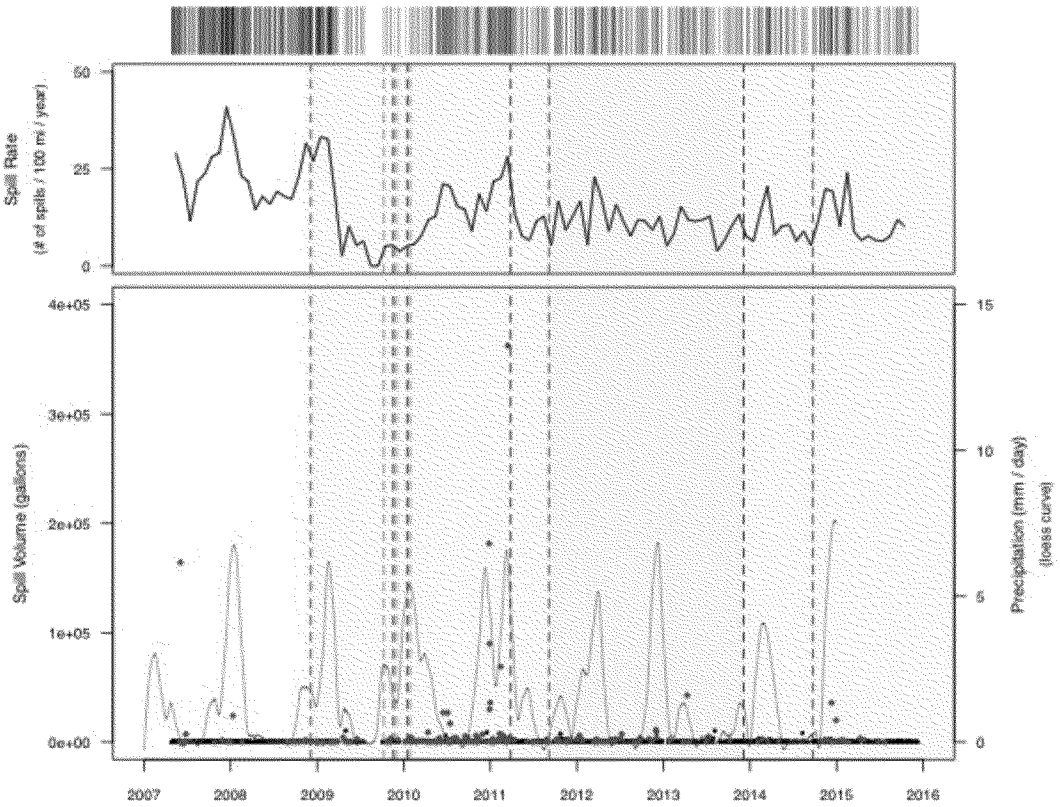
City of Emeryville




City of Oakland



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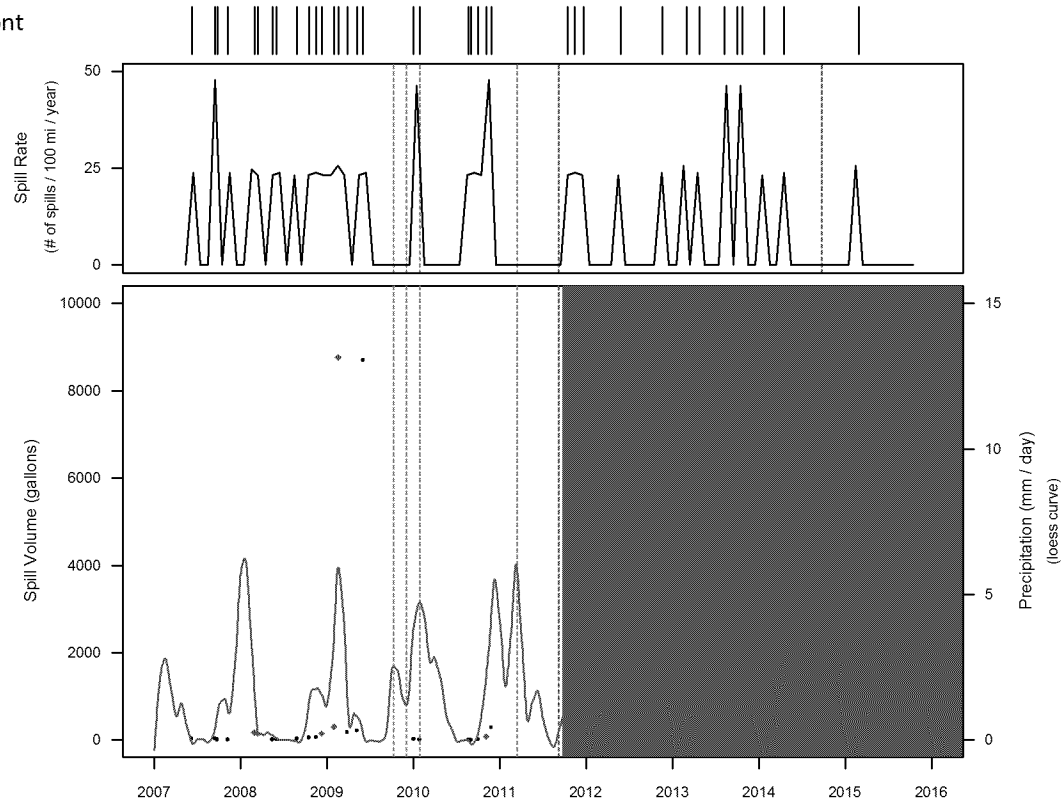
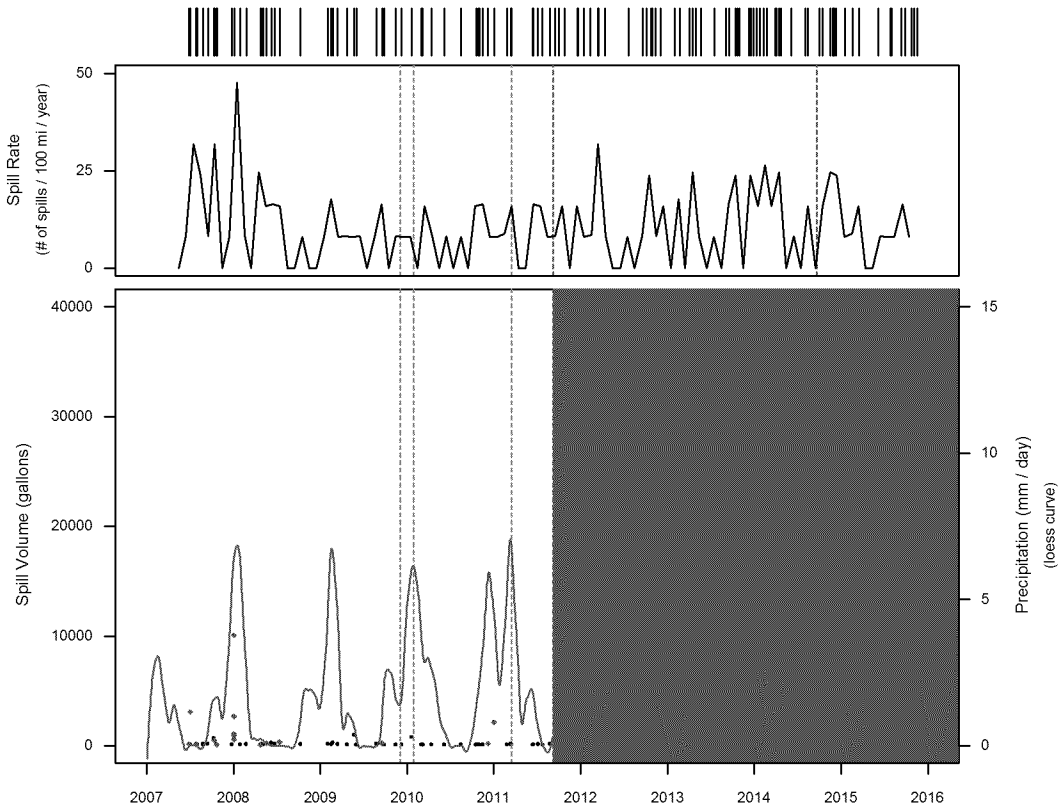
City of Piedmont




Stege Sanitary District



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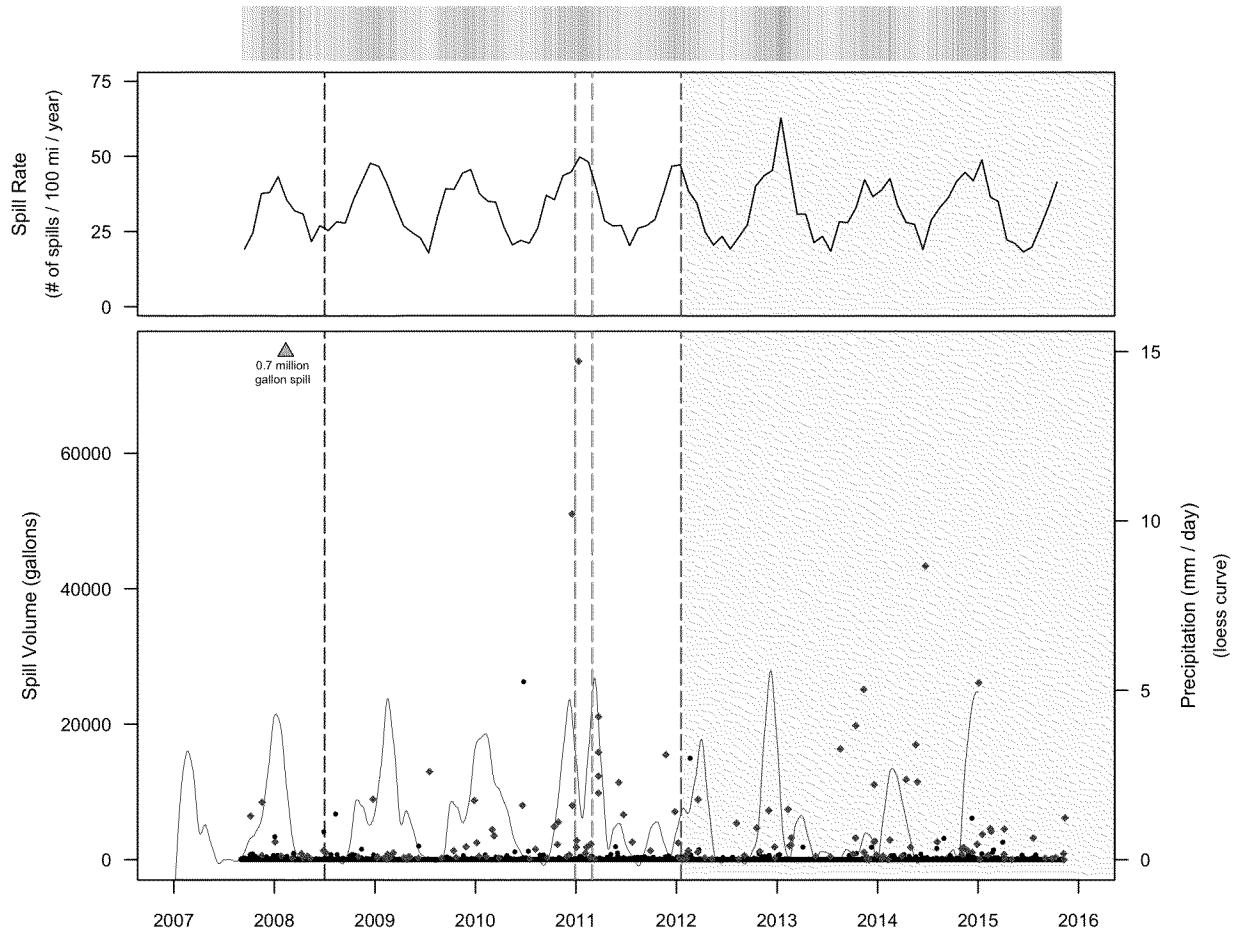
Plaintiff: California Sportfishing Protection Alliance
Collection system agency: Sacramento Area Sewer District
Action type: Settled lawsuit (12/29/2010 NOI)

Sacramento Area Sewer District owns the second largest collection system in the state (4,463 miles, including 1,384 miles of laterals) and has experienced more SSOs from 2007 to October 2015 than any other collection system (12,003), making up 28% of all SSOs in the state during that time period. Excessive inflow and infiltration appear to be issues, since there is a strong seasonal signal in SSO occurrence. Additionally, root intrusion is a significant problem in the District, identified as the cause of 74% of all reported SSOs. In 2008, the Regional Board assessed ACL penalties for 27 SSOs (see **Figure 52**), totaling 897,637 gallons (including 855,832 gallons discharged to surface water), that occurred between November 2006 and April 2008. These included one very large spill, totaling ~700,000 gallons, in early 2008. California Sportfishing Protection Alliance sent an NOI in late 2010 and sued the District in early 2011, alleging 6,119 SSOs (1,770 reported as reaching waters of the U.S. directly or via MS4; 1,747 others reported as reaching the MS4) from December 2005 to December 2010. The 2011 settlement agreement included a wide variety of injunctive terms, including annually decreasing SSO reduction performance standards. In addition to $250,000 in attorneys' fees and costs, the agreement included a $350,000 mitigation payment to support environmental project activities that benefit the Sacramento-San Joaquin River Delta and its watershed, and $60,000 for settlement compliance monitoring. The agreement will terminate in 2018.

Following the NOI, the District's spill rate increased 0.7%, and its spill volume rate decreased 44%. For SSOs reported as reaching surface water (♦), spill rate increased 10%, and spill volume rate decreased 48%.

**Figure 52. Summary chart for *California Sportfishing Protection Alliance v. Sacramento Area Sewer District.***



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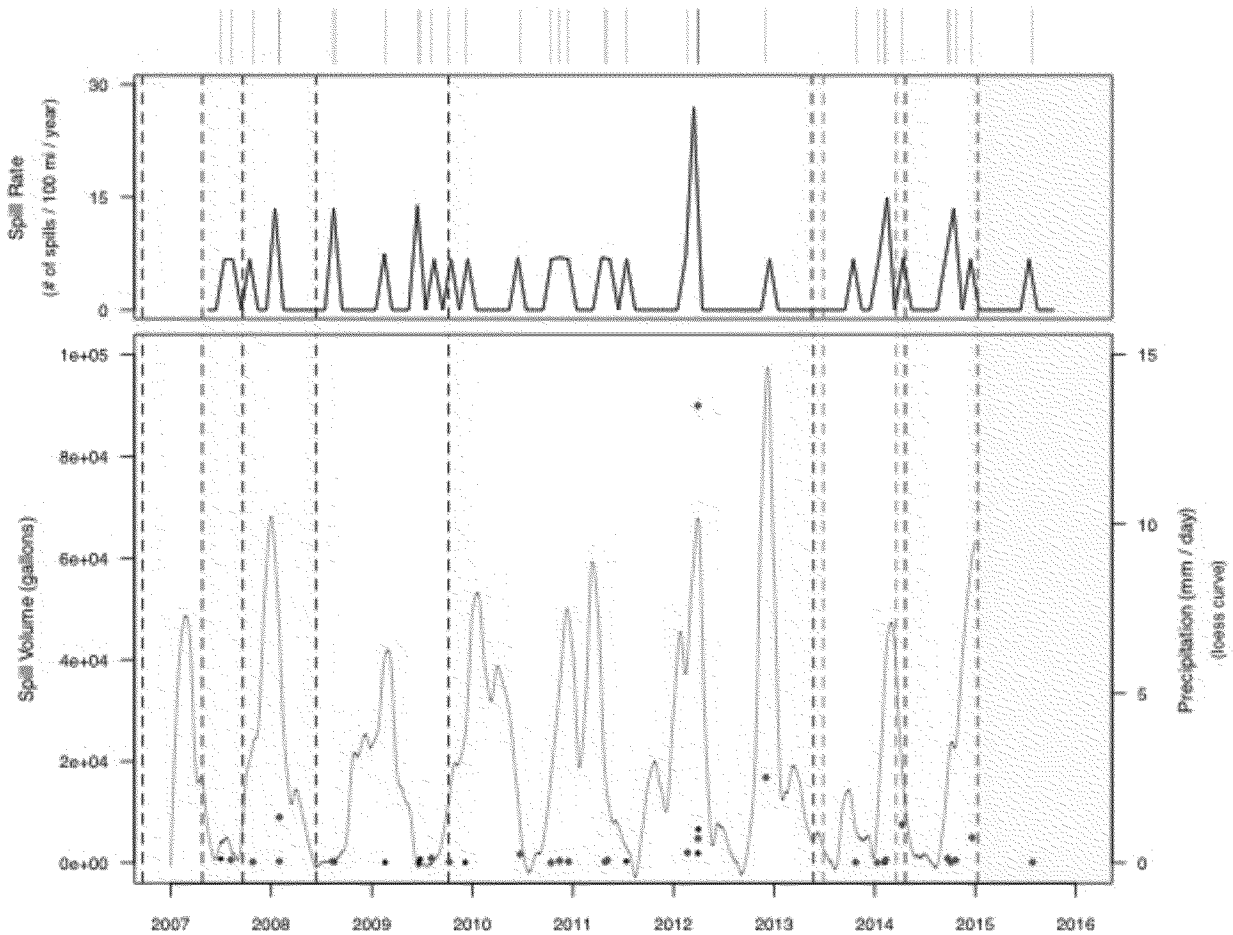
Plaintiff: California River Watch
Collection system agency: City of Eureka
Action type: Settled lawsuit (6/28/2013 NOI)

The Regional Board issued ACL complaints related to the City of Eureka's SSOs and other violations in 2004, 2006, 2007, 2009 and 2013 (see **Figure 53**). The Board adopted settlement orders related to the second, third, and fifth complaints in 2007, 2008, and 2014. The 2013 complaint, for a March 2012 SSO that discharged approximately 90,000 gallons to surface water, was issued about a month before California River Watch sent the City of Eureka an NOI alleging 16 reported SSOs, totaling 126,670 gallons (including 116,400 gallons reaching surface water), unreported SSOs, continuous exfiltration, and other violations from July 2009 to June 2013. River Watch filed its lawsuit in early 2014, and the parties settled in early 2015. The settlement agreement requires the City to inspect and assess all collection system segments within 200 feet of surface water not assessed within the prior 10 years by 2018 and all remaining sewer segments not assessed within the prior 10 years by 2025. Any segment within 200 feet of surface water ranked as "Failed or will fail within 5 years" must be repaired within 2 years. Additionally, the City agreed to consider a sewer lateral ordinance within 1 year and to spend $15,000 installing and maintaining monitoring manhole covers. The agreement included $45,000 in attorney s' fees and costs. It will terminate in 2025.

Following the NOI, the District's spill rate increased 1%, and its spill volume rate decreased 72%. For SSOs reported as reaching surface water (♦), spill rate increased 39%, and spill volume rate decreased 76%.

**Figure 53. Summary chart for *California River Watch v. City of Eureka.***



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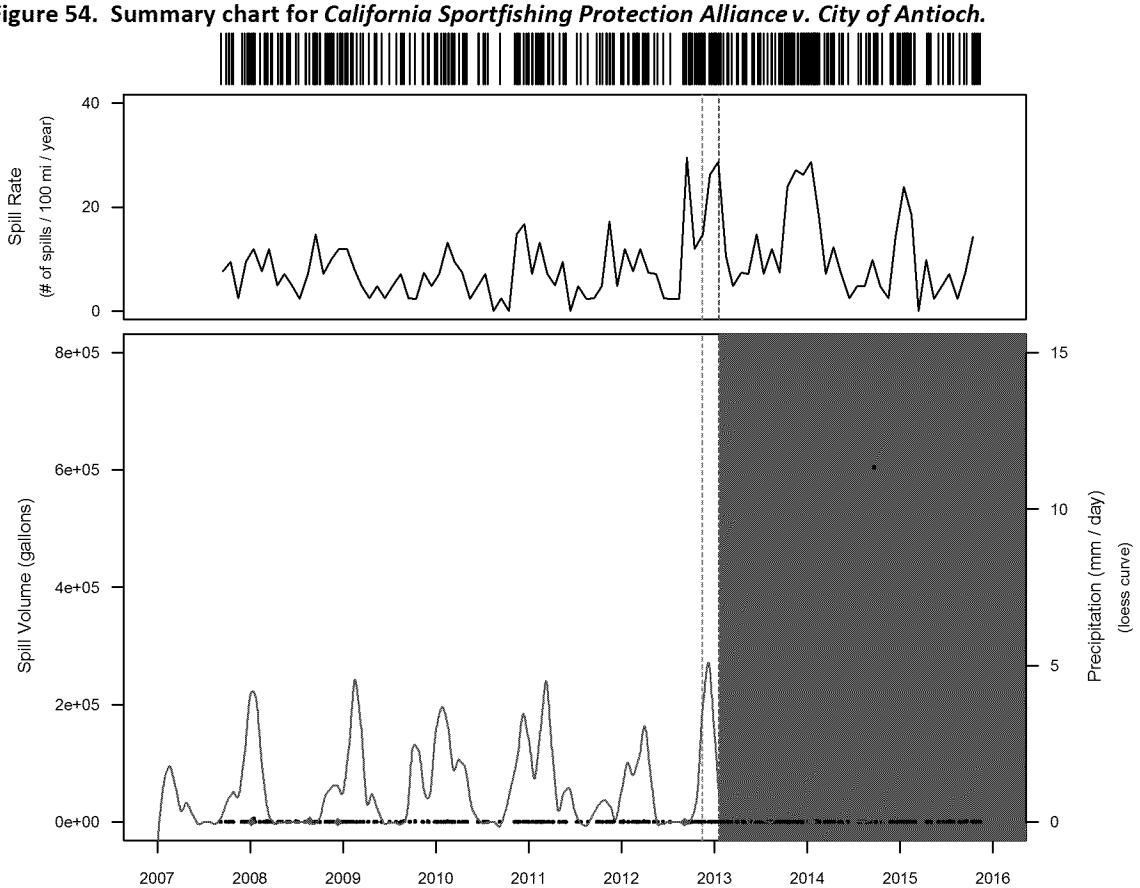
### 3. Performance metrics worsened after some actions were initiated

For some agencies, collection system performance indicators calculated based on reported SSOs worsened after the initiation of citizen enforcement action. Here are 3 examples.

Plaintiff: California River Watch
Collection system agency: City of Antioch
Action type: Pre-litigation settlement (11/13/2012 NOI)

California River Watch sent the City of Antioch an NOI in late 2012 (see **Figure 54**), alleging 163 SSOs, totaling 18,163 gallons (including 1,266 gallons reported as reaching surface water) and continuous exfiltration from October 2007 to October 2012. The parties settled without a lawsuit in early 2013. The agreement stated that the City had already inspected and assessed the condition of all gravity sewer mains 10 inches or smaller in diameter within the last 10 years. Therefore, it required the City to do the same for gravity sewer mains greater than 10 inches in diameter within 200 feet surface water greater than 10 inches in diameter, and to grade all gravity sewer main segments of all sizes. It also agreed to inspect all other gravity mains except those inspected within the last 10 years or "constructed, replaced, or repaired in the last twenty (20) years." Segments receiving the worst grades must be replaced within 2 or 4 years, prioritizing lines "within 200 feet of water bodies or areas designated as critical habitat for endangered species." Other provisions required the City to (1) consider adoption of an ordinance mandating inspection and/or repair of privately owned sewer laterals after triggering events; (2) engage in more detailed SSO reporting, "water quality sampling and testing for total and fecal coliform and E. coli whenever it is estimated that an SSO of fifty (50) gallons or more enters a water body," and (3) sample for ammonia and metals for two Category 1 SSOs at the point of discharge as well as upstream, and downstream. The City paid River Watch $35,000 in attorneys' fees and costs. The agreement is expected to terminate in 2022.

**Figure 54. Summary chart for *California Sportfishing Protection Alliance v. City of Antioch.***



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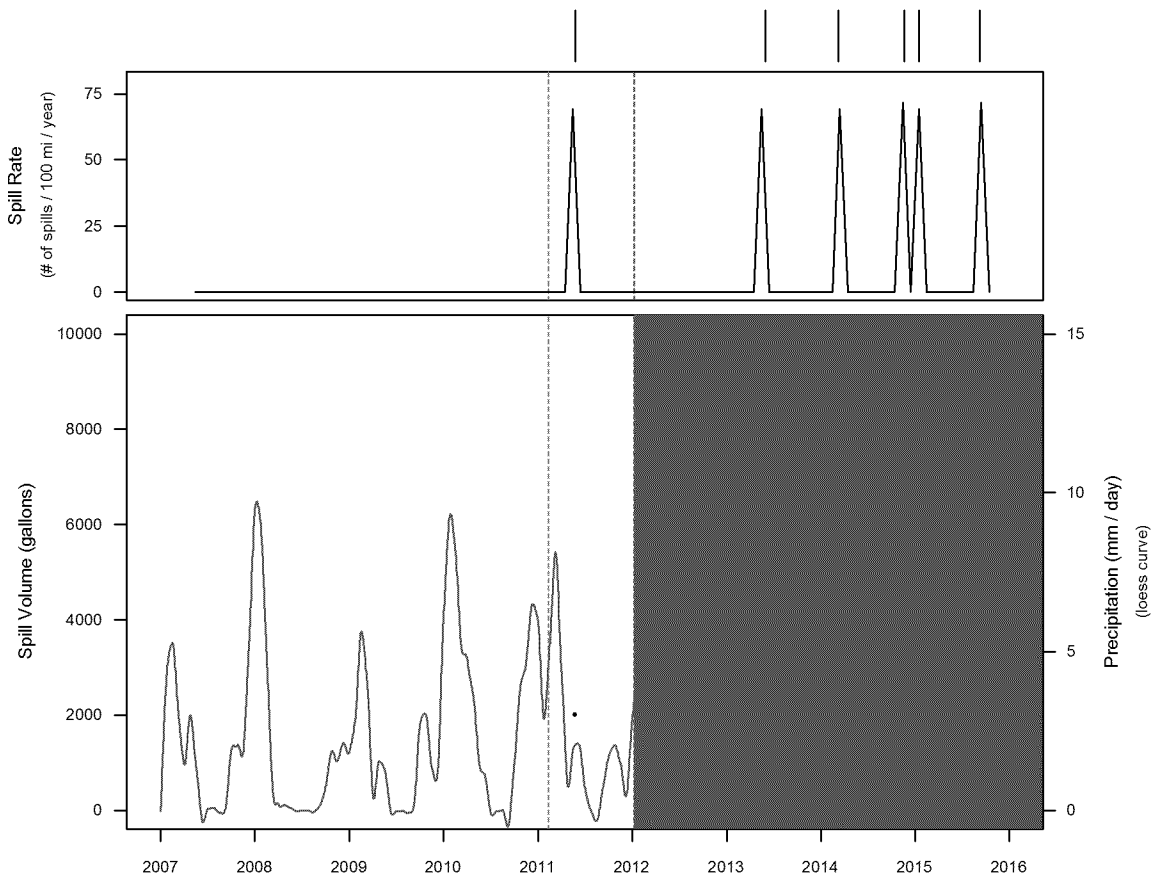
The City's spill rate had already started to climb before River Watch sent the NOI, andcould have been the impetus for citizen action. Following the NOI, the District's spill rate increased 60%, and its spill volume rate increased 5,883%. For SSOs reported as reaching surface water (♦), spill rate increased 32% and spill volume rate increased 2,761%. These large spill rate increases were due primarilyto 1 very large SSO in 2014.

Plaintiff: California River Watch
Collection system agency: Bodega Bay Public Utility District
Action type: Pre-litigation settlement (2/11/2011 NOI)

California River Watch sent Bodega Bay Public Utility District an NOI in early 2011(see **Figure 55**), alleging unreported SSOs, continuous exfiltration, overflows and seepage of treated wastewater to waters of the United States from hydrologically connected storage ponds, and discharges during land disposal to saturated soils causing runoff from February 2006 to February 2011. The NOI also included Endangered Species Act, Safe Drinking Water Act, and California Coastal Act claims. The parties settled without a lawsuit in early 2012. SSO-related provisions included development of protocols for gathering information from callers reporting SSOs, CCTV inspection of gravity lines within 150 feet of surface waters, and prioritizing repair of damaged segments found during the inspection. The District also agreed to other terms not specifically related to SSOs but to River Watch's other claims.[526] The agreement included $45,000 in attorneys' fees and costs. It will terminate in 2017.

Before it received the NOI, the District had reported no SSOs to the SSO Database. Shortly afterwards, it reported one, and has since reported 5 more. These 6 SSOs resulted in a post-NOI spill rate of 7.5 SSOs per 100 miles of collection system per year, and a post-NOI spill volume rate of 265 gallons per 1,000 people per year. Only 1 of the SSOs was reported as reaching surface water (♦), for a post-NOI spill rate of 1.2 and a post-NOI spill volume rateof 81.

**Figure 55. Summary chart for *California River Watch v. Bodega Bay Public Utility District.***



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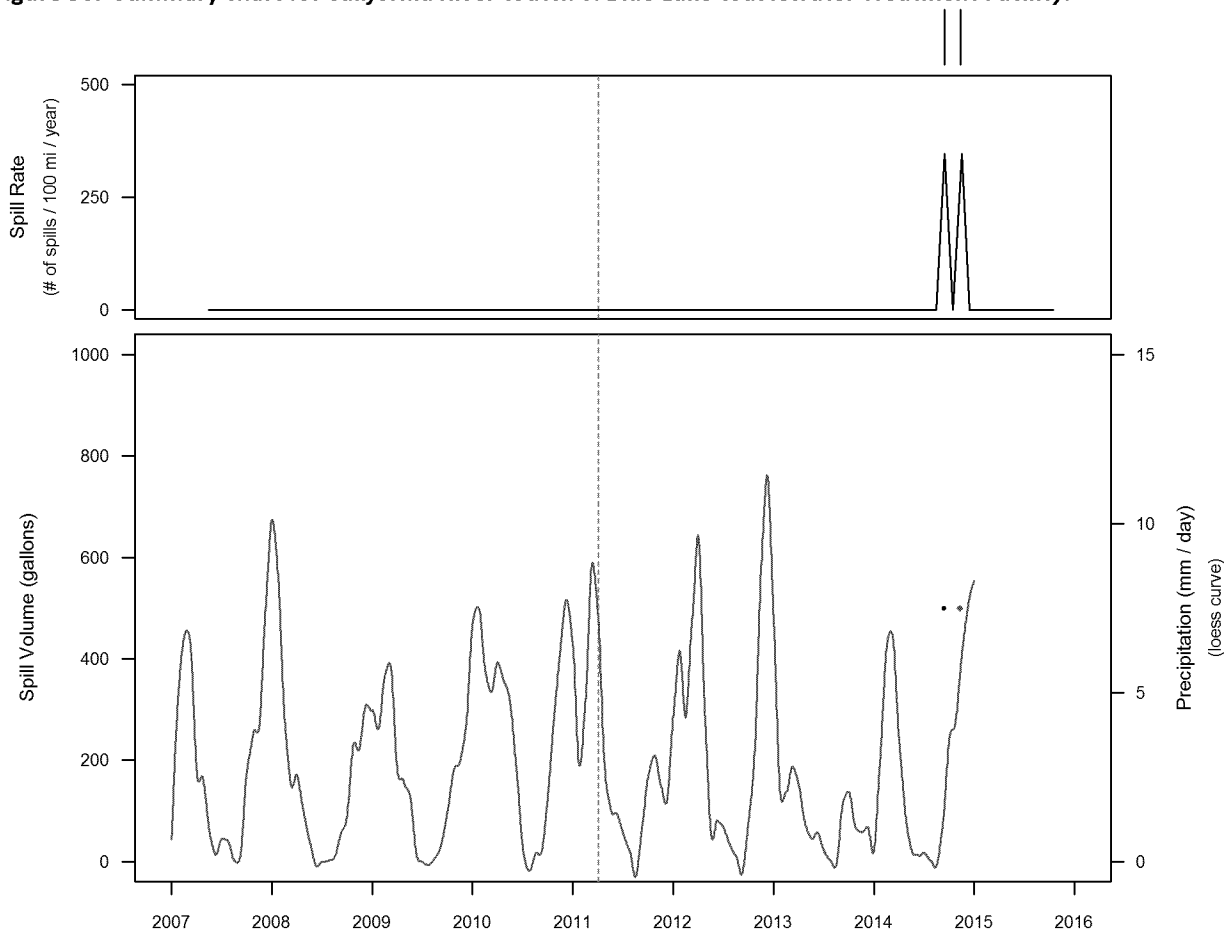
Plaintiff: California River Watch
Collection system agency: Blue Lake Wastewater Treatment Facility
Action type: Outstanding NOI (4/4/2011 NOI)

In addition to the above action, our dataset included one other situation in which the targeted agency reported no SSOs until after initiation of citizen enforcement action. It is possible that one or both agencies had been underreporting SSOs prior to citizen enforcement activity (see discussion, **Box 6**).

California River Watch sent Blue Lake Wastewater Treatment Facility an NOI in early 2011 (see **Figure 56**). That NOI primarily alleged discharges from the POTW's percolation ponds and exfiltration from the sanitary sewer system. It also mentioned surface SSOs, but did not specifically allege underreporting. However, underreporting of exfiltration is assumed. River Watch appears to have taken no further legal action.

Before it received the NOI, the District had reported no SSOs to the SSO Database. The Facility subsequently reported 2 SSOs in 2014. These SSOs resulted in a post-NOI spill rate of 12.5 SSOs per 100 miles of collection system per year, and a post-NOI spill volume rate of 174 gallons per 1,000 people per year. One of the SSOs was reported as reaching surface water (♦), for a post-NOI spill rate of 6.2 and a post-NOI spill volume rate of 87.

**Figure 56. Summary chart for *California River Watch v. Blue Lake Wastewater Treatment Facility.***



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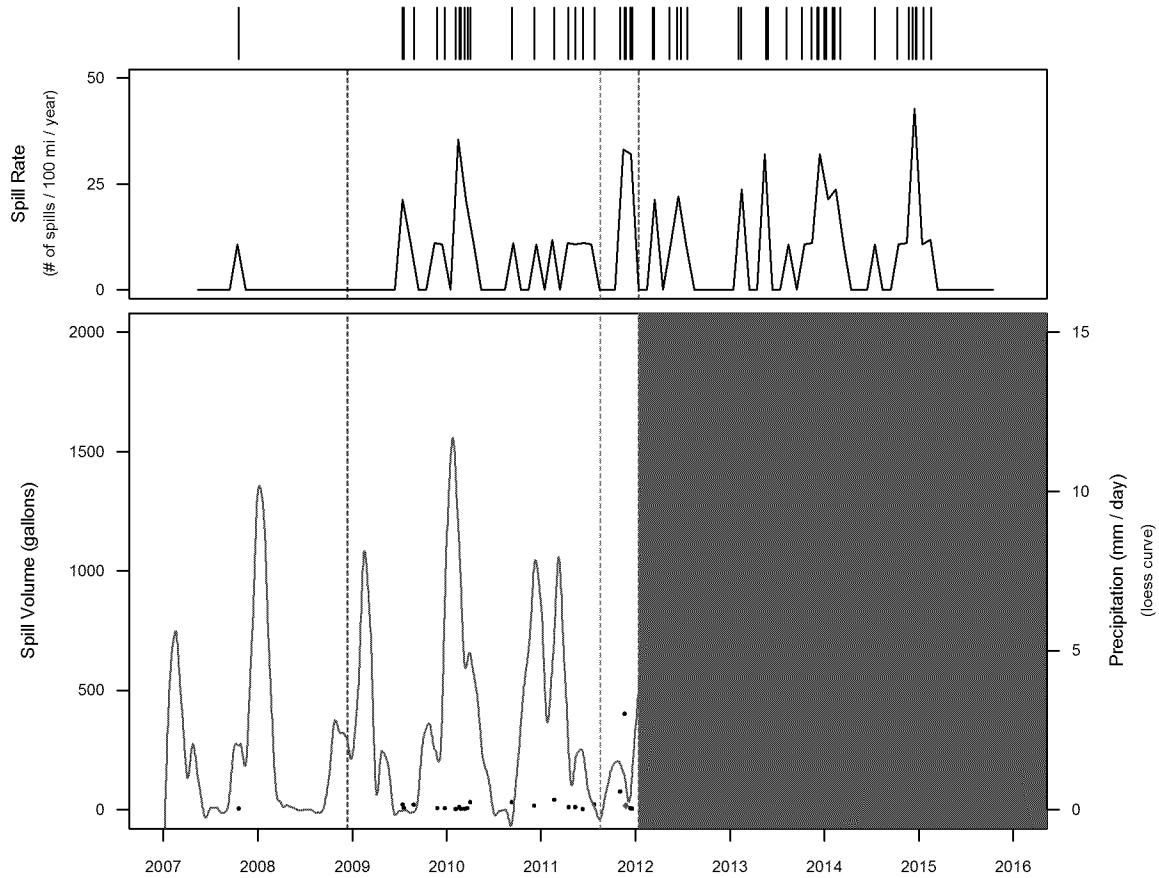
### 4. Early citizen enforcement actions

In a number of cases, citizen enforcement action was initiated before SSO Database reporting began (or less than 9 months after reporting began), so a before-and-after comparison of performance data was not feasible using our current dataset. Two examples follow.

Plaintiff: California River Watch
Collection system agency: City of Healdsburg
Action type: Settled lawsuit (9/17/2001 NOI) NOTE: California River Watch sent the City another SSO related NOI in 2011. That action was settled without litigation (see **Table 17**, above, and the **Online Supplement**, available at *http://www.law.berkeley.edu/SSO-citizen-enforcement*, for more information about that action).

California River Watch sent an NOI and sued the City of Healdsburg in 2001 (see **Figure 57**), alleging SSOs and other violations, including discharges of treated effluent without an NPDES permit from the City's wastewater treatment plant to Basalt Pond, adjacent to the Russian River. According to the case docket, the collection system claims were settled in early 2003, and, subsequently, the parties stipulated to their dismissal. However, the federal district court went on to grant partial summary judgment for River Watch on the remaining treatment plant claims, then held a bench trial (the only one in our dataset) to determine whether Basalt Pond was a "water of the United States." The court concluded it was and required the City to apply for an NPDES permit for its indirect discharges. The City appealed, the Ninth Circuit affirmed the district court's decision, and the U.S. Supreme Court denied certiorari. Although we could not find a copy of the collection system settlement agreement to analyze for this report and do not know how long it lasted, the district court awarded River Watch $480,000 in attorneys' fees and costs, and the Court of Appeals awarded an additional $180,000 related to the appeal. The court also imposed $20,000 in civil penalties.[527]

**Figure 57. Summary chart for *California River Watch v. City of Healdsburg.***



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For the 2007 to October 2015 time period, the City's spill rate was 6 SSOs per 100 miles per year, and its spill volume rate was 60 gallons per 1,000 people served per year. For SSOs reported as reaching surface water (♦), spill rate was 0.6, and spill volume rate was 26.

Plaintiff: Santa Monica Baykeeper (now LA Waterkeeper)
Collection system agency: City of Los Angeles
Action type: Settled lawsuit (NOI ?/?/1998; complaint 11/9/1998)

In January 1998, the Regional Board issued an ACL for the City of Los Angeles's Hyperion Wastewater Treatment Plant (see **Figure 58**) for 2 SSOs totaling 150,000 gallons in 1997. Santa Monica Baykeeper (now known as LA Waterkeeper) sent the City an NOI sometime in 1998, at least 60 days prior to filing suit on November 9, 1998. Between the time the NOI was sent and the complaint was filed, the Regional Board issued a CDO and an ACL complaint proposing $850,000 in penalties for SSOs in 1993, 94, 95, and 98 from the Hyperion System. Another ACL complaint in 1999 addressed a 1.2 million gallon SSO in the system, and, in 2000, the Regional Board adopted another CDO. In early 2001, the EPA and the Regional Board filed a separate lawsuit against the City, which the court subsequently consolidated with Santa Monica Baykeeper's case. The parties settled in 2004. The agreement contained provisions requiring inspection and condition assessment, hydraulic modeling; a variety of cleaning requirements; repair, rehabilitation, and replacement and capital improvement requirements; FOG inspections and ordinance enforcement; an odor program; and required the addition of sewer sizing language to a design manual. It included $8.5 million for a series of defined SEP projects, including creek restoration, stormwater treatment, and stormwater low-flow diversion projects. Subsequent amendments to the agreement substituted alternative projects. Additionally, the City paid $800,000 in civil penalties to the U.S. Treasury and attorneys' fees and costs of $1.6 million to Santa Monica Baykeeper, $425,000 to 5 intervening homeowner 's and citizen's groups, and $71,745 to the Regional Board. The City's spill rate decreased from >10 in fiscal year 2000–01[528] to an average of 2.4 over the 2007 to October 2015 time period.

In 2010, the Regional Board adopted a CAO regarding SSOs in the LA City Bureau of Sanitation Collection System, and in 2013 it assessed ACL penalties for a 2010 SSO.

The settlement terminated in May 2015.

For the 2007 to October 2015 time period, the Hyperion Collection System's spill rate was 2.4 SSOs per 100 miles per year, and its spill volume rate was 45 gallons per 1,000 people served per year, while the LA City Bureau of Sanitation Collection System's spill rate was 1.9, and its spill volume rate was 4.3. For SSOs reported as reaching surface water (♦), the Hyperion System 's spill rate was 0.2, and its spill volume rate was 19; the LA City Bureau of Sanitation System's spill rate was 0.1, and its spill volume rate was 0.1.



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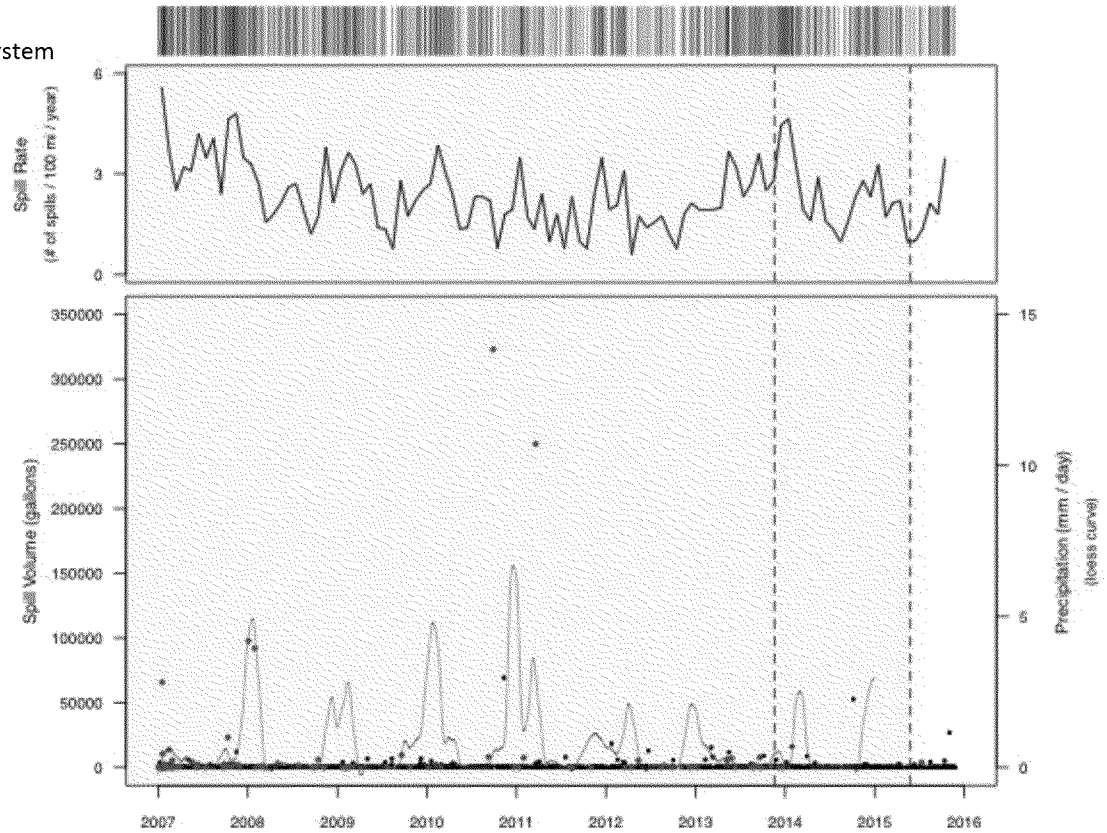
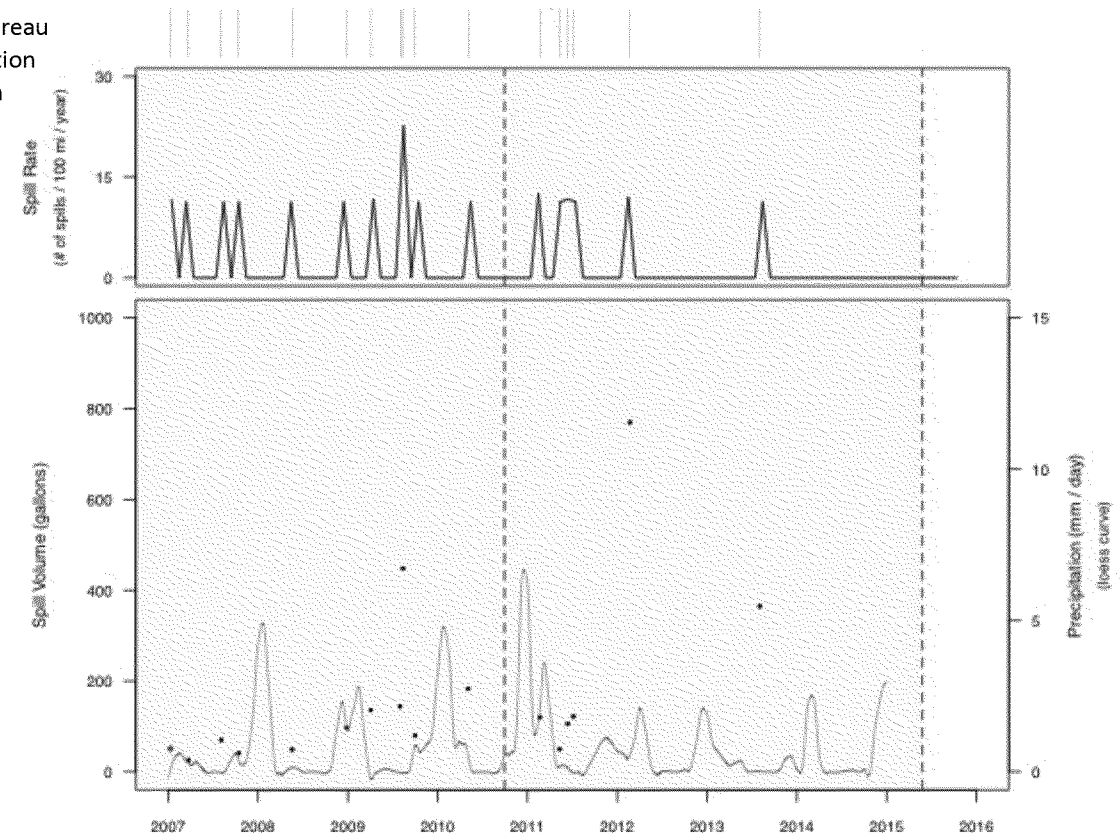
**Figure 58. Summary charts for *Santa Monica Baykeeper v. City of Los Angeles.***

Hyperion Collection System




LA City Bureau of Sanitation Collection System



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## 5. Recent citizen enforcement actions

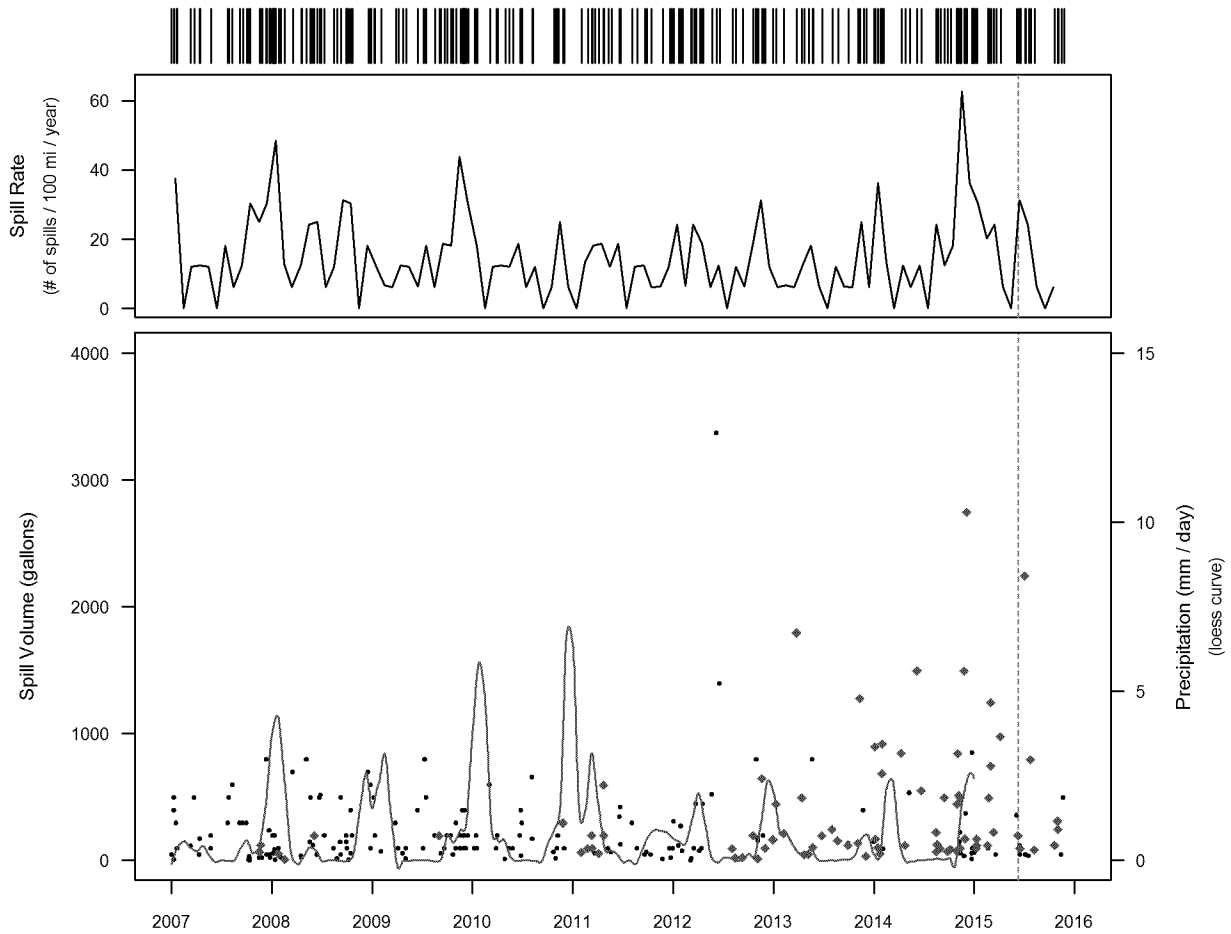
In some cases, citizen enforcement action was initiated only recently (less than 9 months before the end of October 2015), so a before-and-after comparison of performance data was not possible. An example is given below.

Plaintiff: California River Watch
Collection system agency: City of Whittier
Action type: Outstanding NOI, as of June 2015 (6/8/2015 NOI)

In June 2015, California River Watch sent the City of Whittier and NOI alleging 136 reported SSOs (totaling 43,719 gallons, 69 SSOs and 22,812 gallons reported as reaching surface water, 51 SSOs reported as reaching an MS4) and continuous exfiltration from June 2010 to April 2015. As of the end of June 2015, the NOI was outstanding.

For the 2007 to October 2015 time period, the City's spill rate was 15 SSOs per 100 miles per year, and its spill volume rate was 92 gallons per 1,000 people served per year. For SSOs reported as reaching surface water (♦), the spill rate was 5, and the spill volume rate was 35.

**Figure 59. Summary chart for *California River Watch v. City of Whittier.***



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**Chapter 9 summary:**

- We analyzed changes in individual collection system performance before and after citizen enforcement action for actions initiated at least 9 months after reporting was required and at least 9 months before the end of October 2015 with the following results for the 67 collection system / citizen action pairs falling within this time frame:
  - Spill rate performance:
    - Reported spill rate improved after citizen action commenced for 81% of collection system / citizen action pairs. For 19%, spill rate worsened after citizen enforcement action. For 2 pairs, collection systems that had reported zero SSOs before being targeted for enforcement action began reporting SSOs afterward.
    - For SSOs reported as reaching surface water, spill rate improved after citizen action commenced for 66% of collection system / citizen action pairs and worsened in 34%.
  - Spill volume rate performance:
    - Spill volume rate improved after citizen enforcement actions for 69% of collection system / citizen action pairs. For 31%, spill volume rate worsened after citizen enforcement action. Again, for 2 pairs, collection systems that had reported zero SSOs before being targeted for enforcement action began reporting SSOs afterward.
    - For SSO volume reported as reaching surface water, spill volume rate improved after citizen action commenced for 60% of collection system / citizen action pairs and worsened in 40%.
- These results demonstrate correlations, but do not prove causation. Many other factors may play a role in changing collection system performance metrics.
- This chapter provides examples of cases in which performance metrics during the 2007 to October 2015 time period showed the following trends:
  - Improvement after citizen enforcement action was initiated,
  - No change, or mixed results, after citizen enforcement action was initiated, and
  - Worsening after citizen enforcement action was initiated.
- It also gives examples of early and recent citizen enforcement actions, for which the 2007 to October 2015 SSO data window does not allow before-and-after performance comparison.



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# CHAPTER 10 — Observations from and limitations of the data

This chapter presents a summary of some of the major themes revealed by the empirical analyses developed in the preceding chapters, acknowledging again some of the limitations of the data and the analytical methods employed in this report.

To address our research questions about the nature and impacts of citizen enforcement related to SSOs in California, we assembled a dataset from publicly available records. These data included self-reported information about SSOs in the state SSO database and legal documents related to citizen enforcement actions. This dataset enabled us to conduct some basic analyses for trends and correlations over the study period.

## A. Observations on the nature of citizen enforcement

Citizens have been active in enforcement actions against California collection systems. We found data concerning 90 citizen enforcement actions related to SSOs from 1996 to mid-2015. These included 61 lawsuits filed by citizen plaintiffs, 2 additional lawsuits filed by regulators in which citizen plaintiffs intervened, 20 pre-litigation settlements, and 7 outstanding NOIs (**Chapter 5.B.1**). The data we have assembled reveals an overall increase in the frequency of citizen enforcement activity over the 1996 to mid - 2015 time period statewide (**Figure 8**). There is noise in the data—the trend is not constant, but has varied from year to year. The trend toward increasing citizen enforcement may be related to the increased transparency and availability of data from the state SSO database (**Chapter 5.B.4**).

Settlements were by far the most common outcome of litigation, and the court played a very small role in some of the 63 lawsuits we identified (**Table 11**). In general, both injunctive and monetary settlement terms were consistent with improved collection system maintenance, management, and performance, more effective SSO response, and projects meant to offset impacts to local or regional waters (**Chapter 6**).

Citizen enforcement actions targeted 88 collection systems, representing approximately 8% of the 1,093 systems enrolled under the Statewide Permit, managed by 83 different collection system agencies (**Chapter 5.B.2**, **Table 9**). Some collection system agencies (~ 13%) were targeted more than once (**Table 9**).

Three main plaintiff organizations carried out most (86%) of the enforcement actions (**Chapter 5.B.4**). Fifteen other plaintiffs also played a role in SSO-related citizen enforcement. Each of the main plaintiff groups has approached its role in citizen enforcement somewhat differently (**Chapter 5–9**). For example, the groups have had different activity levels over time (**Figure 9**) and have addressed different geographic areas (**Figure 7**). The paths and outcomes pursued by different plaintiff groups have also differed, with some seeming to emphasize pre-litigation settlements and others focusing on lawsuits (**Chapter 5.B.4**). Both injunctive and monetary terms in settlement agreements have varied among plaintiff groups (**Table 12**, **Figures 11–14**). Finally, the collection systems targeted by different plaintiff groups have experienced different changes in performance metrics after the initiation of citizen enforcement (**Table 17**, **Figures 40 through 43**).

## B. Observations on the impacts of citizen enforcement

The results of our analyses, presented in **Chapters 6 through 9**, are consistent with the interpretation that, on the whole, SSO-related citizen enforcement activity in California has helped improve collection system performance and further the CWA's goals.

- First, the terms included in settlement agreements that resulted from citizen enforcement are generally consistent with improving collection system infrastructure, management, and local water quality (**Chapter 6**).



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- Second, most citizen enforcement activity was not clearly duplicative of government enforcement efforts (**Chapter 7**).
- Third, targeting does not appear to have been random. Instead, citizen groups tended to target collection systems with poorer performance metrics for the time period from the date reporting to the SSO database was first required in 2007 to October 2015, both statewide and within most Regions (**Chapter 8**). Additionally, while there was a broad trend toward improved performance metrics across the industry from 2007 to 2015, on average, targeted collection systems improved more than untargeted systems during that time (**Chapter 8**).
- Finally, most targeted agencies showed improved performance according to the metrics we analyzed during the period following the initiation of citizen enforcement action (**Chapter 9**).

These results are also consistent with other possible interpretations. For example:

- The fact that settlement agreements related to citizen enforcement are generally consistent with improving collection system infrastructure, management, and local water quality is suggestive, but certainly not conclusive. Correlations do not prove causation, and we lack data that would confirm whether the terms of settlement requirements were actually carried out, whether collection system agencies would have done some or all of what settlement agreements required on their own initiative, or whether and how the actions responsive to settlements had positive impacts on water quality.
- Additionally, although citizen enforcement tended to target collection systems that had poorer overall performance metrics for the 2007 to 2015 time period and improved more over the course of that time, it is not clear that citizen enforcement was responsible for improvements seen. Collection systems experiencing higher numbers of SSOs and higher spill rates at the beginning of the period (which were more likely to be targeted), when the Statewide Permit was introduced, may have had more room to improve by complying with the Permit than other systems.
- Likewise, the improved performance metrics most targeted collection systems displayed for the period after citizen enforcement action was initiated could be explained by lag time in improvements related to compliance with the Statewide Permit, as systems with poorer performance metrics toward the beginning of the 2007 to 2015 time period worked to improve their management practices and infrastructure condition.

Additionally, while, on the whole, the broad trends described in this report are consistent with the hypothesis that citizen enforcement has helped improve collection system performance in California, on a case-by-case basis, there are exceptions. Because individual details matter, we have presented a case-by-case synthesis to show the range of relationships between citizen actions and performance outcomes, as revealed by an illustrative sample (**Chapter 9.C**) and extended summaries (see the **Online Supplement**, available at *http://www.law.berkeley.edu/SSO-citizen-enforcement*) of citizen enforcement actions against collection system agencies.

## C. Limitations of our data and analytical methods

As the above discussion of impacts demonstrates, strong causal claims linking particular variables and outcomes are not warranted by the results of our analyses. There are many limitations in the data and our ability to interpret them. Alternative explanations are possible for many of the qualitative conclusions that could be drawn from the data in this report. This would likely remain true even if we were able to perform more robust quantitative analyses on a broader dataset.

Citizen enforcement is one of many factors that might contribute to changes in collection system management and SSO performance. Weather, climate, land use, population, and water use changes can affect the amount and timing of collection system base flow, infiltration, and inflow. Collection system agencies may adopt different management practices on their own initiative as agency leadership, expertise, and

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information change. Other external pressures, like regulatory changes or changes in the local economic outlook can also play an important role. Adoption of the Statewide Permit, which created sewer system management planning requirements and a public reporting system, is an important confounding factor. Since 2007, the Statewide Permit has undoubtedly been a major driving force for collection system management improvements around the state.

Our data and analytical methods do not permit us to distinguish between changes driven by citizen enforcement, changes correlated with citizen enforcement but driven by other factors, and changes driven by multiple factors (including citizen enforcement). Nor do our data and analyses enable us to address related questions about the optimality or cost-effectiveness of citizen enforcement actions (see **Chapter 11**, below).

Assuming the effect of citizen enforcement on collection system management and SSO performance could be discerned, making the link to water quality changes would add yet another layer of challenges. As **Chapter 1.C** made clear, an SSO's impacts on receiving water quality depend on a host of different factors, and many other sources contribute pollutants to local waters.

While our examination has been as thorough as was feasible under the definition and constraints of this project, we also acknowledge, as we have throughout the text, that there are other areas which could be explored in greater depth. A few examples include the extent of compliance with settlement agreements, the influence of citizen enforcement on changes in sewer system management plans, water quality changes related to SSOs, and detailed statistical analysis of the relationships between variables.

Others can evaluate the extent to which these and other extensions would be useful for bringing clarity to a challenging area of inquiry. None should be approached without recognition of the differing perspectives brought to the issue by all of the stakeholders involved, as we discuss in the next chapter.

**Chapter 10 summary:**

- This chapter briefly summarizes the major themes revealed by the empirical analysis developed in Chapters 5 through 9 regarding the nature and impacts of citizen enforcement actions related to SSOs.
- We assembled data from multiple sources to enable exploration of a range of questions about the nature and impacts of SSO-related citizen enforcement activity in California.
- Given the limitations of our data and analytical methods, strong causal claims linking particular variables and outcomes are not warranted.
    - Citizen enforcement is one of many factors that might contribute to changes in collection system management and SSO performance, and SSOs are one of many sources that contribute pollutants to local waters.
- Our findings are consistent with the interpretation that, on the whole, SSO-related citizen enforcement activity in California has helped improve collection system performance and further the CWA's goals. However, the findings are also consistent with other possible interpretations.



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# CHAPTER 11 — An opportunity for productive dialogue

We were drawn to this project because we knew that stakeholders had widely divergent perceptions of the appropriateness and effectiveness of SSO-related citizen enforcement. We wanted to understand what citizen suits regarding SSOs have accomplished, and at what cost. As explained in **Chapter 10**, we discovered that the available data do not provide clear answers to these questions. We also recognize that the question of whether particular citizen suits are appropriate or not cannot be answered without defining and defending metrics for evaluation. That process is necessarily value-driven.

We believe that stakeholders' differing perceptions of citizen enforcement rest in significant part on their application of different metrics, based on differing value judgments. Stakeholders understandably have different views about the goals of enforcement, the role of citizen enforcement, the feasibility of compliance with CWA requirements, and the best path to compliance. Those views color their interpretations of the available data. Furthermore, some stakeholders distrust the motives and sincerity of others, which can make productive dialogue challenging.

We believe the data and analysis offered in this report could illuminate a path toward more productive dialogue. We think that path lies through more openly addressing questions about metrics for evaluating the data, and the value judgments that underlie those metrics. As a first step, this chapter offers suggestions for unpacking those questions.

## A. The basic controversy

Citizen enforcement efforts related to SSOs are controversial. That controversy cannot be fully resolved by more or better data; it is fundamentally grounded in the fact that collection system agencies, citizen groups, and regulators hold different views of the appropriate role of citizen enforcement under the CWA. Those views, in turn, stem from their values, goals, experiences, and perceptions.

A key motivation for and goal of this project was to improve general understanding of the nature and impacts of SSO-related citizen enforcement actions in California. In carrying out the research, we learned that available data are limited, can be challenging to track down, and are often incomplete or difficult to interpret (as explained in **Chapters 5 through 10**). We also learned that conversations between stakeholders are difficult. Each brings their own perspectives, language, and assumptions to the table, where they can easily end up talking past one another.

Stakeholders generally agree that it is desirable to reduce pollution, but there is disagreement over the appropriate amount of enforcement under the CWA, as well as about the proper role of citizen enforcement. Collection system agencies worry about over-enforcement; they are concerned that responding to enforcement based on minor violations could divert resources from dealing with their most serious challenges. They may perceive citizen plaintiffs as more difficult to work with or more likely to be motivated by personal gain than government regulators. Citizen plaintiffs, by contrast, are more likely to worry about under-enforcement. They may suspect that the government regulators are overly sympathetic to collection system agencies or lack the resources to track and respond to all significant violations. Those differences in perspective lead to disagreements between stakeholders about whether (and, if so, to what extent) citizen enforcement activity is problematic and whether (and, if so, in what ways) the legal landscape for citizen enforcement should be changed.

Ultimately, these are values-based judgments that data can inform but not resolve. Therefore, while the data provide a useful starting point to ground discussions, we think progress will require that stakeholders on all sides of the issue air the metrics by which they gauge when citizen enforcement action is appropriate, when it becomes problematic, and why they choose to draw the boundaries where they do.



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## B. Unpacking the issues

The question of whether and to what extent citizen enforcement actions are appropriate or problematic cannot be discussed in a meaningful way without more clearly defining the se terms. As a starting point for that conversation, we discuss three metrics that might be used to evaluate the appropriateness of a citizen enforcement action:

(1) Whether the action is "frivolous";
(2) Whether the action is likely to further the CWA's goals; and
(3) Whether the costs of the action outweigh its benefits.

We describe each of these potential metrics more fully below.

### 1. Is a citizen enforcement action frivolous?

In legal parlance, a lawsuit is considered frivolous if the plaintiff's claims have no legal or factual basis. Frivolous litigation includes both "cases in which a legal claim is entirely without merit" and cases in which "a claimant who has some measure of a legitimate claim" attempts to support it with "grossly exaggerated or totally false" factual assertions.[529] An action is not frivolous simply because a plaintiff ultimately loses. Indeed, even "creative" interpretations of the law are not necessarily frivolous—the law grows and changes in response to new legal arguments and factual situations. [530]

A number of checks exist to deter or punish frivolous litigation. Lawyers who file claims in federal court must certify that, to the best of their knowledge after reasonable inquiry, those claims are not presented for "any improper purpose;" that they are "warranted by existing law or by a nonfrivolous argument for extending, modifying, or reversing existing law or for establishing new law;" and that the factual claims have, or likely will have after discovery, supporting evidence.[531] Plaintiffs who knowingly bring frivolous claims or suits can be penalized, including by potentially forcing them to bear the defendant's attorneys' fees and costs.[532] Furthermore, lawyers who bring frivolous litigation may be fined or referred to the relevant professional organization for discipline.[533]

In our interviews, stakeholders expressed different opinions about the extent to which these checks deter the assertion of baseless claims in practice. Collection-system-aligned interests suggested that baseless claims have been made in citizen enforcement actions, as evidenced by the removal of some claims in amended complaints and instances of courts granting in part motions to dismiss. They argued that even if such claims are eventually withdrawn or dismissed, responding to them before that point can take substantial time and effort on the part of the agency and its lawyers. Citizen plaintiffs disagreed that they included baseless claims, or that removal of claims from amended complaints or dismissal of some claims meant that the eliminated claims were frivolous.

#### Observations based on our research

While we did not analyze every claim in our dataset in detail, we noted no obviously "frivolous, unreasonable, or groundless"[534] SSO-related claims or cases. One reason is the ready availability of agencies' self-reported records of SSOs.[535] In the few cases citizen groups targeted agencies with zero reported SSOs, plaintiffs offered some evidence that SSOs to waters of the United States had taken place, and these claims were accompanied by other CWA claims.[536]

Some collection-system-aligned interests suggested to us that, where a court required a plaintiff to file an amended complaint to address pleading deficiencies, or the plaintiff amended a complaint of its own accord to remove certain claims, the claims should be considered frivolous. The most frequent example mentioned was amending a complaint to remove claims related to exfiltration. Where NOIs and complaints included exfiltration claims, plaintiffs generally pointed to indirect evidence that exfiltration was likely happening in the collection system and likely reaching surface waters.[537]



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There is good reason to believe that some level of exfiltration occurs in most collection systems.[538] However, exfiltration claims are difficult to prove because instances of exfiltration are generally not noticed or reported, and it may be difficult to show that wastewater that leaks into surrounding soils reaches receiving waters either directly or via an MS4.[539] Some plaintiffs are concerned that systems that experience surface SSOs may also have exfiltration problems. When they assert exfiltration claims, they may believe both that they will be able to prove those claims and that exfiltration causes or threatens serious environmental harm. The fact that settlement agreements frequently do directly or indirectly address exfiltration[540] suggests that collection system agencies as well as plaintiffs agree that preventing exfiltration is desirable.

Without more information, however, we cannot say whether particular claims that were made and then later relinquished were unjustified in the first instance.

### 2. Is the citizen enforcement action likely to further the CWA's goals?

As we have noted, the CWA has the broad and ambitious goals of eliminating pollution of the nation's waters in order to restore and maintain their chemical, physical, and biological integrity. Wastewater collection and treatment systems are critical to this goal, and they—like other point sources of pollutants — are subject to the CWA's strict prohibition of unpermitted discharges to waters of the United States.

Because SSOs to waters of the United States are prohibited (see **Chapter 2.A.2**), and because public sewer systems are critical to protecting public health and water quality, it is conceivable that some enforcement efforts might be counterproductive. If an agency's violations were minimal, if regulators are taking effective enforcement action, or if an agency is already doing everything feasible to address the problem, citizen enforcement would be unlikely to provide significant net water quality benefit. We briefly address the difficulty of evaluating each of these factors, and what our data suggest about them, below. Whether collection system agencies are doing all they can to prevent SSOs in the absence of citizen enforcement is particularly difficult to determine, and views on that question are likely to depend critically on the viewer's perspective.

#### *a. Were the collection system's violations minimal?*

What constitutes a minimal violation is highly fact specific and depends on the observer's perspective. Some commentators have argued that citizen enforcement activity is problematic when based on "technical, de minimis or debatable violations" for which a regulatory agency has "consciously determined that an enforcement action is unnecessary."[541] However, stakeholders disagree about where the boundaries between "technical, de minimis, or debatable violations" and other violations lie. Furthermore, no publicly accessible database reveals to citizen plaintiffs whether regulatory agencies have consciously decided that enforcement is not necessary.[542]

##### Observations based on our research

Some enforcement actions in our dataset were initiated after a collection system agency reported a few small SSOs. Claims based on a small number of reported SSOs were often combined with allegations of under-reporting and other claims related to effluent limitations violations, unauthorized discharges of treated effluent, or MS4 permit violations.[543] We lacked information about whether regulators had affirmatively decided that enforcement was inappropriate in any of the cases we examined.

#### *b. Are government enforcement efforts adequate?*

Regardless of where the line falls legally on the question of what constitutes "diligent" government enforcement that would bar a citizen suit (see **Chapter 4.A.3**), collection-system-aligned interests have noted that citizen enforcement activity could be inappropriate if it effectively duplicates administrative or judicial enforcement action by regulators.[544] Duplicative citizen enforcement activity is undesirable as it makes inefficient use of limited resources and distracts from other priority needs.



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Whether a citizen enforcement action is redundant is difficult to evaluate (see **Chapter 7**). Where government enforcement occurs at roughly the same time, citizen enforcement activity could be considered redundant if it did not seek (or obtain) additional commitments likely to contribute to meaningful water quality or pollutant reduction improvements.

### Observations based on our research

We did not identify widespread evidence of substantially duplicative citizen SSO enforcement activity. Based on our research, 49% of targeted collection systems experienced no formal government SSO enforcement over the past two decades. Regulators took administrative action to address SSOs within 2 years before or after citizen action against 34% of targeted collection systems: 11% experienced joint regulator / citizen action, while the other 23% experienced separate government and citizen action.

Of the 21 different citizen enforcement actions addressing the latter group, 57% were initiated before similarly timed government enforcement action, which we define as occurring within 2 years of initiation of citizen action.

Degree of overlap in violations addressed: Of the 21 non-joint citizen enforcement actions with similarly timed government action, 29% were initiated at a time when there was a low degree of overlap in violations addressed by citizen and government action, while 14% were initiated when there was a medium degree of overlap in violations addressed. Considering all government enforcement actions with 2 years before or after initiation of citizen enforcement, 38% had a low degree of overlap in violations addressed, 19% had a medium degree of overlap, and 43% had a high degree of overlap.

Degree of overlap in remedies sought: Of the 21 non-joint citizen enforcement actions with similarly timed government action, 33% were initiated at a time when there was a low degree of overlap in the remedies sought, and 10% were initiated when there was a high degree of overlap in the remedies sought. Considering all government enforcement actions with 2 years before or after initiation of citizen enforcement, 62% had a low degree of overlap in remedies sought, and 38% had a high degree of overlap.

### *c. Is the violator doing everything feasible to address the problem?*

If a collection system agency is already committed to making all feasible improvements on a reasonable time schedule, citizen enforcement may be pointless. Some commentators have criticized citizen enforcement where long-term programs intended to address future SSOs are already being implemented.[545] While this view seems conceptually sound (why waste time and money on litigation that offers society no added benefit?), citizen-aligned interests expressed doubts that collection system agencies would follow through on voluntary commitments. They note that, without a judicial order or enforceable settlement agreement, there would be no legal repercussions for an agency that chose to relax its commitments or delay projects. Particularly where an agency has experienced significant SSO problems, a potential citizen plaintiff may doubt an agency's representations that planned improvements will be completed, maintained, and effective. No matter how sincere an agency is about making needed improvements, citizen plaintiffs may feel the need to pursue an enforceable agreement that memorializes, or improves upon, voluntary commitments.

Some collection-system-aligned interests suggested that commitments to actions that respond to requirements, such as those in the Statewide Permit, are already legally binding, so citizens gain nothing by including them in settlement agreements. However, the Statewide Permit does not impose consequences for an agency's failure to carry out the particular actions described in its sewer system management plan. Furthermore, not all commitments imposed by law, including the Statewide Permit, are enforceable by citizens. Plaintiffs who do not trust regulatory authorities to enforce appropriately are not likely to be comforted by commitments that can only be enforced by the government.

### Observations based on our research

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Our dataset does not reveal whether collection system agencies were already committed to carrying out some or all of the terms of settlement agreements before citizen enforcement actions were commenced. Nor does (or could) it reveal whether any individual agency would have met an particular commitment that was not enforceable by citizen plaintiffs. We cannot tell whether any of the citizen enforcement actions in our dataset targeted an agency that was already doing everything feasible to address the problem. We do note that the dataset includes situations in which citizen enforcement actions were followed by improvements in collection system performance but also some situations in which there was no apparent improvement (see **Chapter 9.B and C**).

### 3. Do the costs of the action outweigh its benefits?

Some collection-system-aligned interests offered a third potential metric for evaluating citizen enforcement. They suggested that, even if citizen enforcement leads to system improvements, it may not be an efficient means of doing so. In other words, they were concerned that the costs associated with responding to citizen enforcement actions might exceed the benefits of the resulting improvements.

We note that the current regulatory framework does not invite this question. The law is structured on two apparent assumptions that are inconsistent with cost-benefit comparisons. First, as explained in **Chapter 2.A.2**, any SSO that reaches waters of the United States is currently interpreted as a violation of the CWA. Second, as explained in **Chapter 3**, any violation of the CWA apparently calls for enforcement in some vein. Nonetheless, the status quo is never the last word in evaluating policy, and a robust showing that citizen suits tend to do more harm than good (or the converse) would be relevant to ongoing policy discussions.

A comprehensive evaluation of the costs and benefits of SSO-related citizen enforcement actions sounds enticing but would be extremely challenging to accomplish. Such an analysis would need to follow up on settlement agreements to find out whether agreed-to management changes were actually made, performance targets were actually met, and SEPs were actually carried out, then evaluate the impacts of these actions on water quality. As we have reiterated throughout this report, we did not attempt to do these things and each would have its own challenges. We were unable to locate any public data that could be used to directly quantify either the water quality impacts of citizen enforcement (see **Chapters 1.C and 5.C**) or the full costs of carrying out and responding to citizen enforcement efforts (see **Box 3** in **Chapter 6**). We did not identify a methodology that would allow us to estimate either with a high degree of confidence. Indeed, it is unclear whether it would be possible to discern to what extent improvements in system performance and, ultimately, water quality are attributable to citizen enforcement efforts (see **Chapter 1.C**) or to other confounding factors. It is also difficult to disentangle the impacts of citizen enforcement, government enforcement, and voluntary collection system changes.[546] The full costs of complying with citizen settlements would be extraordinarily difficult to track, since they may include or overlap with actions that might be taken for entirely independent reasons or may fulfill multiple obligations.

Except for attorneys' fees and costs, settlement compliance monitoring costs, and SEP or mitigation payments, it may be difficult to separate the costs of settlement compliance from the costs associated with Statewide Permit and CWA compliance. For example, the Statewide Permit requires collection system management that effectively monitors collection-system asset condition, prioritizes maintenance and repairs, and supports adequate FOG source controls. If an agency is not managing its system effectively, and citizen enforcement spurs needed changes, implementation costs could be considered part and parcel of compliance with the Statewide permit and the CWA.

Detailed injunctive requirements may drive agencies to take, or support agencies in taking, specific needed actions. However, overly restrictive requirements may force agencies to use inefficient means of achieving important goals. The local knowledge and expertise of collection system agencies can and should inform discussions with citizen plaintiffs about the best ways to prioritize resources and define specific, well-thought-out, and enforceable criteria to achieve shared goals.



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**BOX 8.** Incentives related to the availability of attorneys' fees in citizen enforcement actions

As we explained in **Chapter 5**, SSO-related citizen enforcement actions are generally settled, which means that the parties, rather than a judge, determine how much to award for attorneys' fees (see **Chapter 4.C**). These payments do not necessarily reflect the time spent by plaintiffs on the case to that point. Instead, negotiated "attorneys' fees" payments, together with the rest of a settlement package, reflect the parties' assumptions about how much more time and money the case would cost them if it continued and was eventually resolved by a court.

The financial incentive for citizen enforcement provided by the availability of attorneys' fees is intentional.[547] Without this safety net, fewer plaintiffs would be willing or able to take on the risk of stepping into the role of "private attorney general."

Collection-system-aligned interests expressed concerns that plaintiffs who enjoy partial success may recover their full litigation costs, encouraging them to pile on unjustified or unhelpful claims. They also perceive that citizen plaintiffs (and their lawyers) may pursue easily provable claims regardless of the seriousness of the violations and deliberately prolong litigation by padding cases with miscellaneous claims in order to inflate the amount of attorneys' fees they can potentially recover. (On the other hand, we heard from citizen-aligned interests that they believe some defense lawyers have employed intentional delay tactics, given their clients false hopes that they could win in court, and filed unjustified motions to run up their own fees.) If an action proceeds to court judgment or a judicially-supervised settlement, there is some judicial oversight of these concerns. Courts must consider the seriousness of violations in determining the amount of civil penalties imposed (see **Chapters 3.C.2** and **4.B.2**). They can sanction parties or attorneys who bring frivolous claims or otherwise inappropriately run up the costs of litigation (see **Part B.1** of this chapter above). Courts can also reduce awards of reasonable attorneys' fees based on the plaintiff's degree of success (see **Chapter 4.C**). However, since the bulk of these actions are settled, sometimes without the involvement of a court, these remedies are often not available to defendants.

Some commentators have suggested that the involvement of for-profit law firms in citizen enforcement is potentially problematic because those firms may be especially driven by the prospect of large attorneys' fee awards.[548] Others have pointed out that lawyers with specialized experience, such as a for-profit firm with an active practice in a specific area, may be better positioned to pursue cases efficiently.[549] Every citizen enforcement action we analyzed involved at least one for-profit attorney, generally with abundant CWA experience, on the plaintiff's side. Similarly, many of the citizen groups involved in SSO-related enforcement are fairly described as experienced CWA plaintiffs. None of the plaintiffs or lawyers involved in SSO-related actions are driven by the prospect of money damage awards (since those are not available) or "play a role in bringing about the injuries that serve as the foundation for their lawsuits," which may raise special concerns about motives.[550]

Together, the availability of attorneys' fees, strict liability for any SSO that reaches waters of the United States, and an easily accessible database of SSO violations combine to create potential incentives for unjustified or unnecessary citizen enforcement activity. However, these elements also form the basic recipe for effective citizen enforcement that furthers CWA goals. Any changes to the current system should be made based on clear, robust information about incentives and impacts accompanied by a thorough analysis of the potential repercussions of proposed changes for CWA enforcement and the achievement of CWA goals.

Another issue that prevents assessment of costs and benefits is the unknown extent to which negotiated attorneys' fees and costs reflect the actual time invested by citizen plaintiffs' attorneys, staff, and expert witnesses. Since attorneys' fees and costs for SSO-related citizen actions are rarely decided by the courts, a detailed accounting of time and resources expended is not generally readily available. It is therefore unclear whether negotiated payments commonly represent over- or under-estimates.

Finally, our data do not show whether the money set aside for settlement compliance monitoring is appropriately scaled to the task, or whether effective compliance monitoring actually occurs in many cases.



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## C. Moving forward

Different stakeholders have starkly different perceptions of citizen enforcement related to SSOs, but they all share a desire to further the public interest. We believe that allof the stakeholders we spoke with are operating in good faith. We also heard, loud and clear, that they do not always believe this about one another. We suggest that a broader conversation, reflecting the current state of knowledge about citizen enforcement's impacts and structured around stakeholders' values and priorities, would be beneficial. Any such conversation will have to begin with an honest, transparent discussion about the assumptions, data, and metrics underlying different viewpoints about what constitutes appropriate citizen enforcement. We have suggested a starting point for that conversation, but we do not by any means claim that it should be the last word. Instead, we invite comments and suggestions. We hope stakeholders and policymakers will use this report to inform productive dialogue about the directions future policy improvements should take.

**Chapter 11 summary:**

- This chapter discusses a key motivation for our research: stakeholders' sometimes widely divergent perceptions of the appropriateness and effectiveness of SSO-related citizen enforcement.
- The question of whether particular citizen suits are appropriate or not cannot be answered without defining and defending metrics for evaluation. Therefore, this chapter offers suggestions for unpacking some of the important issues to help move the dialogue forward.
- As a starting point for that conversation, we discuss three metrics that might be used to evaluate the appropriateness of a citizen enforcement action:
    1. Whether the action is frivolous;
    2. Whether the action is likely to further the CWA's goals; and
    3. Whether the costs of the action outweigh its benefits.
- We discuss each of these potential metrics and offer observations based on the results of our research.



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## ACKNOWLEDGEMENTS

We thank Rebecca Morse for assisting with legal research and the data collection process from legal documents, Jordan Diamond for editing and enhancing the readability of the report, and David Zinniker for assistance with figures and with many other aspects of the project. Patricia Holden provided useful input on a section of the report. Deborah Lambe provided early input in conceptualizing this project.

This work was funded by the California Association of Sanitation Agencies (CASA) and the Wheeler Water Institute of the Center for Law, Energy and the Environment at UC Berkeley School of Law. CASA did not control the questions we asked, the way we approached those questions, our analysis or conclusions, or the writing of this report. We sought input from stakeholders on all sides of this issue in gathering information and drafting the report. We circulated a draft widely, and have taken into consideration the thoughtful and extensive feedback we received. We are solely responsible for any remaining errors, and the interpretations, conclusions and opinions in this report are solely our own.

## REVIEW

The authors solicited reviews of an earlier draft from persons chosen for their diverse perspectives and technical expertise. The intent of this review was to generate candid and critical comments to help make the published report as sound as possible and to ensure that it meets standards of objectivity and evidence. Although the reviewers provided many constructive comments and suggestions, they were not asked to endorse the conclusions or recommendations, nor did they see the final draft of the report before its release. All review comments were carefully considered, and we are grateful to all the reviewers for their efforts. Naturally, responsibility for the final content of this report rests entirely with the authors

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## ABOUT CLEE

The Wheeler Water Institute develops interdisciplinary solutions to ensure clean water for California. Established in 2012 at the Center for Law, Energy & the Environment (CLEE) at Berkeley Law, the Institute conducts projects at the intersection of law, policy and science.

CLEE educates the next generation of environmental leaders and develops policy solutions to pressing environmental and energy issues. The Center's current initiatives focus on reducing greenhouse gas emissions, advancing the transition to renewable energy, and ensuring clean water for California's future.



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# ENDNOTES

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[1] *See, e.g.*, World Health Org., 10 Things You Need to Know About Sanitation (2008), *available at* http://www.unwater.org/downloads/media/sanitation/10Things.pdf (describing the extent of sanitation problems, diseases associated with poor sanitation, sanitation options and costs, etc.); Giovana O. Fisarol et al., *Environmental and Sanitary Conditions of Guanabara Bay, Rio de Janeiro*, 6 FRONTIERS IN MICROBIOLOGY 1232 (2015) (discussing the implications of inadequate wastewater treatment for pollution, ecosystem alteratio ns, and increased risks to human health at the site of the 2016 Olympic Games); Annette Prüss-Ustün et al., *Burden of Disease from Inadequate Water, Sanitation and Hygiene in Low- and Middle-Income Settings: A Retrospective Analysis of Data from 145 Countries*, 19 TROPICAL MED. & INT'L HEALTH 894 (2014); Rachel Baum et al., *Sanitation: A Global Estimate of Sewerage Connections Without Treatment and the Resulting Impact on MDG Progress*, 47 ENVTL. SCI. & TECH. 1994, 1994 (2013) (discussing the importance of treating sewage before discharge into waterways); Fabiola M. Akaishi, *Immunological Responses, Histopathological Finding and Disease Resistance of Blue Mussel (Mytilus edulis) Exposed to Treated and Untreated Municipal Wastewater*, 82 AQUATIC TOXICOLOGY 1 (2007) (finding that exposure to untreated wastewater reduced disease resistance in aquatic organisms); *see also* **Chapter 1.C.**

[2] *See* Matt Stevens, *Unintended Consequences of Conserving Water: Leaky Pipes, Less Revenue, Bad Odor*, L.A. TIMES, Sept. 1, 2015, *available at* http://www.latimes.com/local/california/la-me-drought-consequences-20150901-story.html (quoting the director of engineering at the Orange County Sanitation District as saying "Nobody likes to talk about sewage. Sewage isn't sexy.").

[3] *See* **Chapter 1.A.1.**

[4] *See infra* notes 178–183 and accompanying text. Litigation surrounding EPA's 2015 "Clean Water Rule," which aimed to clarify what waters are considered to be "waters of the United States," has left the definition in flux. *See* Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. 37,054, 37,114-15 (June 29, 2015) (codified at 40 C.F.R. § 122.2, effective Aug. 28, 2015) (updating the definition of "waters of the United States" for the purposes of the Clean Water Ac's NPDES permitting program); *In re EPA*, 803 F.3d 804, 809 (6th Cir. 2015) (staying the Clean Water Rule "nationwide, pending further order of the court"). While the stay is in effect, EPA is using its prior definition for "waters of the United States":

> (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
>
> (b) All interstate waters, including interstate "wetlands;"
>
> (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
>
> > (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
> >
> > (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
> >
> > (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
>
> (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
>
> (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
>
> (f) The territorial sea; and
>
> (g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

40 C.F.R. 122.2 (effective through Aug. 27, 2015); *see also infra* note 172; *Rapanos v. United States*, 547 U.S. 715, 779–80 (2006) (J. Kennedy, concurring in the plurality's judgment) (concluding that "jurisdiction over wetlands depends upon the existence of a significant nexus between the wetlands in question and navigable waters in the traditional sense," and that "wetlands possess the requisite nexus, and thus come within the statutory phrase 'navigable waters,' if the wetlands, either alone or in combinatio n with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covere d waters more readily understood as 'navigable'").

[5] *See* **Chapter 1.A.2.**

[6] *See* **Chapter 1.D.1.**

[7] *See* **Chapter 2.A.2–3.**

[8] *See* **Chapter 2.B.1.**

[9] *See* **Chapter 4.**

[10] Others have analyzed citizen enforcement under the CWA from various angles. *See generally, e.g.*, Karl S. Coplan, *Citizen Litigants, Citizen Regulators: Four Cases Where Citizen Suits Drove Development of Clean Water Law*, 25 COLO. NAT. RES., ENERGY & ENVTL. L. REV. 61 (2014); PAUL J. GARDNER, CITIZEN SUIT ENFORCEMENT IN A MIXED SYSTEM: EVIDENCE FROM THE CLEAN WATER ACT (2014); Ben Tyson, *An Empirical Analysis of Sue-and-Settle in Environmental Litigation*, 100 VA. L. REV. 1545 (2014) (analyzing citizen suits against federal regulatory agencies under the Clean Air Act, CWA, and Endangered Species Act agai nst); Kristi M. Smith, *Who's Suing Whom?: A Comparison of Government and Citizen Suit Environmental Enforcement Actions Brought Under EPA-Administered Statutes*, 1995–2000, 29

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COLUMBIA J. ENVTL. L. 359 (2004); James R. May, *Now More Than Ever: Environmental Citizen Suit Trends*, 33 ENVTL. L. REV. 10,704 (2003) (analyzing citizen suits from 1995 to 2002); Adeeb Fadil, *Citizen Suits Against Polluters: Picking Up the Pace*, 9 HARV. ENVTL. L. REV. 23 (1985) (reviewing "the extent to which citizen suits have been brought under four major environmental statutes," including the CWA); Barry Boyer & Errol Meidinger, *Privatizing Regulatory Enforcement: A Preliminary Assessment of Citizen Suits Under Federal Environmental Laws*, 34 BUFF. L. REV. 834 (1985); ENVTL. LAW INST., CITIZEN SUITS: AN ANALYSIS OF CITIZEN ENFORCEMENT ACTIONS UNDER EPA-ADMINISTERED STATUTES (1984) (analyzing citizen suits filed from 1978 to 1984); Jeffrey G. Miller, *Private Enforcement of Federal Pollution Control Laws: Part I*, 13 ENVTL. L. RPT. 10,309, 10,311 (1983).

[11] *See* **Chapter 3.C.**

[12] See **Chapter 11, Box 8.**

[13] See **Chapters 6.B.1 and 11.**

[14] See **Chapters 7 and 11.**

[15] See **Chapters 6.B.1 and 11.**

[16] WATER ENV'T FED'N, PREVENTION AND CONTROL OF SEWER SYSTEM OVERFLOWS 25–26 (2011).

[17] *See* EPA, COLLECTION SYSTEMS TECHNOLOGY FACT SHEET: SEWERS, CONVENTIONAL GRAVITY (2002), *available at* http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P10053D9.txt; *Glossary*, SACRAMENTO AREA SEWER DIST., http://www.sacsewer.com/glossary [hereinafter *Glossary*] (last visited Feb. 17, 2016).

[18] *See Glossary*, *supra* note 17 (defining laterals, main lines, trunk lines, and interceptors).

[19] *See id.* (defining a "manhole" as "[a] sewer access large enough for a person to enter to troubleshoot sewer service problems or perform maintenance work" and a "cleanout" as "[a] small sewer access hole through which equipment may be lowered for trouble shooting or maintenance work").

[20] *See* WATER ENV'T FED'N, *supra* note 16, at 26. EPA, WASTEWATER TECHNOLOGY FACT SHEET: SEWERS, FORCE MAIN (2000), *available at* http://www3.epa.gov/npdes/pubs/force_main_sewers.pdf (stating that "[f]orce mains are pipelines that convey wastewater under pressure from the discharge side of a pump or pneumatic ejector to a discharge point" and noting that "[p]umps or compressors located in a lift station provide the energy for wastewater conveyance in force mains").

[21] *See* WATER ENV'T FED'N, *supra* note 16, at 26.

[22] *See Enforcement to Address Sewer Overflows*, EPA REGION 1, http://www3.epa.gov/region1/sso/enforcement.html (last updated Jan. 26, 2016) ("Properly designed, operated, and maintained sanitary sewer systems are meant to collect and transport all of the sewage that flows into them to a publicly owned treatment works (POTW).").

[23] *See id.*; WATER ENV'T FED'N, *supra* note 16, at 26.

[24] See EPA, REPORT TO CONGRESS: IMPACTS AND CONTROL OF CSOS AND SSOS, at 4-26 (2004) [hereinafter 2004 EPA REPORT], *available at* http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=30006O5F.txt; *see also* EPA, EPA ENFORCEMENT ALERT: PREVENTING BACKUP OF MUNICIPAL SEWAGE INTO BASEMENTS 2 (Sept. 2006) [hereinafter EPA ENFORCEMENT ALERT], *available at* http://www.epa.gov/sites/production/files/documents/enfpreventingbackupsbasement0609.pdf.

[25] *See* 2013/2014 MARIN CNTY. CIVIL GRAND JURY, THE SCOOP ON MARIN COUNTY SEWER SYSTEMS: PART I 10 (2014), *available at* http://www.marincounty.org/~/media/files/departments/gj/reportsresponses/2013/sewerscoopi.pdf.

[26] *See, e.g.*, OFFICE OF WATER, EPA, FACT SHEET: WHY CONTROL SANITARY SEWER OVERFLOWS? (2012), *available at* http://www.epa.gov/sites/production/files/201510/documents/sso_casestudy_control.pdf; 2004 EPA REPORT, *supra* note 24, at ES-2 to ES-3; WATER ENV'T FED'N, *supra* note 16, at 14–15; STATE WATER RES. CONTROL BD., STATEWIDE SANITARY SEWER OVERFLOW REDUCTION PROGRAM: ANNUAL COMPLIANCE REPORT, FISCAL YEAR 2013–2014 14 n.3 (2015) [hereinafter 2013–14 COMPLIANCE REPORT], *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/compliance_report_fy1314.pdf (describing cause categories).

[27] *Cf.* Bram Sercu et al., *Sewage Exfiltration as a Source of Storm Drain Contamination During Dry Weather in Urban Watersheds*, 45 ENVTL. SCI. & TECH. 7151, 7151 (2011).

[28] *See* BROWN & CALDWELL, STATUS REPORT ON THE DEVELOPMENT OF A REPORTING METHODOLOGY FOR SUBSURFACE DISCHARGES OF SEWAGE 4, 7 (2005) (prepared for Orange County Sanitation District).

[29] *See id.* at 4; *see also generally* J. Bryan Ellis et al., *Factors Influencing Temporal Exfiltration Rates in Sewer Systems*, PROC. 11TH INT'L CONF. ON URBAN DRAINAGE, EDINBURGH, SCOTLAND, UK (2008); D.J. Blackwood et al., *Exfiltration from Sewers—Is It a Serious Problem?*, PROC. 10TH INT'L CONF. ON URBAN DRAINAGE, COPENHAGEN, DENMARK (2005); Ariamalar Selvakumar et al., *Exfiltration in Sanitary Sewer Systems in the US*, 1 URBAN WATER J. 227 (2004) (stating that "the combination of a relatively low groundwater table and shallow sewer systems creates the potential for widespread exfiltration, a situation more commonly found in communities located in the western US").

[30] *See* Do Gyun Lee et al., *Wastewater Compounds in Urban Shallow Groundwater Wells Correspond to Exfiltration Probabilities of Nearby Sewers*, 85 WATER RESEARCH 467, 468 (2015) (stating that "many aged sanitary sewer systems are defective," citing "exfiltration rates ranging from 1 to 13.1% of dry weather collection system flow," and finding that "the similarity of groundwater to sewage, based on multiple indicators, increased with increasing sanitary sewer exfiltration probability (modeled from infrastructure within ca. 300 m of each



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well)"); Robert D. Morrison, *A Forensic Analysis of Contaminant Releases from a Sewer Pipe*, ENVTL. FORENSICS: PROC. 2013 INEF CONF. 4 (2013); CREEKS DIVISION, CITY OF SANTA BARBARA, TOOLS FOR TRACKING HUMAN FECAL POLLUTION IN URBAN STORM DRAINS, CREEKS, AND BEACHES 4, 7–12 2012, *available at* http://www.santabarbaraca.gov/civicax/filebank/blobdload.aspx?BlobID=16722 (describing "leaking sewer lines . . . that cause untreated wastewater to reach storm drains," mentioning that EPA "estimates that up to 10% of wastewater flow can be lost to exfiltration where older pipes are located above groundwater levels," and suggesting methods of detecting direct and indirect connections between sanitary sewers and storm sewers); Leif Wolf et al., *Tracking Artificial Sweeteners and Pharmaceuticals Introduced into Urban Groundwater by Leaking Sewer Networks*, 430 SCI. TOTAL ENV'T 8, 8–9, 17–18 (2012) (concluding that "significant amounts of sewage exfiltration and, hence, the input of pharmaceuticals and food additives need to be expected in groundwater even in well-maintained sewer networks," and that "uncertainties in deriving leakage estimates based on sewer conditions result from (i) the highly variable clogging of leaks with colmation layers and (ii) poorly known sewer conditions"); Randall J. Hunt et al., *Assessment of Sewer Source Contamination of Drinking Water Wells Using Tracers and Human Enteric Viruses*, 44 ENVTL. SCI. & TECH. 7956, 7956 (2010); ROBERT S. AMICK & EDWARD H. BURGESS, EXFILTRATION IN SEWER SYSTEMS 15 tbl.5-1 (2000) (summarizing exfiltration rates from vitrified clay pipe segments above the groundwater level in Berkeley, California, equivalent to approximately 34 and 56% of sewer flow).

[31] *See* State Water Res. Control Bd., Order No. WQ 20130058-EXEC, Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Aug. 6, 2013, at 1 tbl.1, 4 [hereinafter 2013 MRP] (effective September 9, 2013), *available at* http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2013/wqo2013_0058exec.pdf (differentiating SSOs that "result[] from an enrollee's sanitary sewer system failure or flow condition," regardless of the point of discharge, from "[d]ischarges . . . resulting from blockages or other problems within a privately owned sewer lateral . . . or from other private sewer assets"); *see also* EPA ENFORCEMENT ALERT, *supra* note 24, at 2 (describing responsibility for cleanup and prevention of sewage backups caused by conditions in the municipal sewer system vs. conditions in privately owned portions of sewer pipes).

[32] *See SSO Data Flat Files: Questionnaire.txt*, STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/water_issues/programs/sso/docs/index.php (file last accessed June 8, 2015) [hereinafter *Questionnaire.txt*].

[33] *See Learn About the Two Types of Sewers in Your Home*, SEWER SMART, http://www.sewersmart.org/connection.html (last visited Feb. 17, 2016).

[34] *See Questionnaire.txt*, *supra* note 32.

[35] *See id.*

[36] We created this map with ArcGIS Online using a basemap sourced from: Esri, HERE, DeLorme, NGA, USGS | Esri, HERE, DeLorme. Regional Water Quality Control Board jurisdiction boundary shapefiles were downloaded from *State and Regional Water Boards*, STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/waterboards_map.shtml (linking to http://gispublic.waterboards.ca.gov/pub/rwqcb_bound_shp.zip). Points represent individual Statewide Permit enrollees. *See* **Chapter 2.B.1**.

[37] *See Stormwater Discharges from Municipal Sources*, EPA, http://www.epa.gov/npdes/stormwater-discharges-municipal-sources#overview (last updated Dec. 18, 2015); NELL GREEN NYLEN & MICHAEL KIPARSKY, ACCELERATING COST-EFFECTIVE STORMWATER INFRASTRUCTURE: LEARNING FROM LOCAL IMPLEMENTATION 4, 8 (2015), *available at* https://www.law.berkeley.edu/research/clee/research/wheeler/accelerating-cost-effective-green-stormwater-infrastructure-learning-from-local-implementation/.

[38] *See San Francisco Combined Sewers*, OAKLAND MUSEUM OF CAL., http://www.museumca.org/creeks/1690-OBSFSewers.html (last visited Feb. 17, 2016) (stating that San Francisco is the only California city "served predominantly by a combined sewer system" and that "portions of Old Sacramento" are also served by a combined system); *Wastewater Services and Rates*, CITY OF SACRAMENTO, http://portal.cityofsacramento.org/Utilities/Services/Wastewater-Service (last visited Feb. 17, 2015). Combined sewer systems are legacy systems created before the availability of wastewater treatment, when sewer systems simply collected waste and stormwater to direct it to local waters. *See San Francisco Combined Sewers*, *supra* this note.; *see also* 2004 EPA REPORT, *supra* note 24, at 2-2 to 2-3; *Combined Sewer Overflow Frequent Questions: What are CSOs and why are they important?*, EPA, http://www.epa.gov/npdes/combined-sewer-overflow-frequent-questions (last updated Nov. 16, 2015).

[39] *See Combined Sewer Overflows (CSOs)*, EPA, http://www.epa.gov/npdes/combined-sewer-overflows-csos (last updated Nov. 16, 2015).

[40] *See id.*

[41] *See* 33 U.S.C. § 1342(q) ("Each permit, order, or decree issued pursuant to this chapter . . . for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy . . . ."); Combined Sewer Overflow (CSO) Control Policy, 59 Fed. Reg. 18,688, 18,688-89 (Apr. 11, 1994) (requiring CSO permittees to implement nine minimum technology-based controls and to develop and implement long-term CSO control plans).

[42] Treated effluent is commonly discharged to local waters at permitted outfall points, but it is sometimes used in other ways. For example, it can be recycled for irrigation purposes or used to augment groundwater supplies. *See* DANIEL NEWTON ET AL., STATE WATER RES. CONTROL BD. & DEP'T OF WATER RES., RESULTS, CHALLENGES, AND FUTURE APPROACHES TO CALIFORNIA'S



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MUNICIPAL WASTEWATER RECYCLING SURVEY 2 fig.2 (2012), *available at* http://www.waterboards.ca.gov/water_issues/programs/grants_loans/water_recycling/docs/article.pdf.

[43] 40 C.F.R. § 122.41(m)(1)(i).

[44] 40 C.F.R. § 122.41(m)(2).

[45] 40 C.F.R. § 122.41(m)(4) (noting that 24-hour notice under 40 C.F.R. § 122.41(l)(6) fulfills the notice requirement for an unanticipated bypass).

[46] *See* WATER ENV'T FED'N, *supra* note 16, at 48.

[47] *See Peak Flows at Sewage Treatment Plants*, EPA, http://www.epa.gov/npdes/peak-flows-sewage-treatment-plants (last updated Jan. 12, 2016); WATER ENV'T FED'N, *supra* note 16, at 48–49.

[48] *See, e.g.*, S.F. Bay Reg'l Water Quality Control Bd., Order No. R2-2013-0016, NPDES No. CA0038539, at 21–22 (2013) (requiring the City of Richmond and the Richmond Municipal Sewer District to "implement all feasible alternatives to reduce blending resulting from inflow and infiltration into the collection system").

[49] 40 C.F.R. § 122.41(n)(1) (explaining further that "[a]n upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation").

[50] *See* 40 C.F.R. § 122.41(n)(2)–(4).

[51] *See Sierra Club v. City of Colo. Springs*, No. CIV.A. 05-CV-01994-WD, 2009 WL 2588696, at *5 (D. Colo. Aug. 20, 2009); *Foti v. City of Jamestown Bd. of Pub. Utilities*, No. 10-CV-575A, 2014 WL 3842376, at *1 n.2 (W.D.N.Y. Aug. 5, 2014).

[52] Southern California agencies (in Regions 4, 8, and 9) began reporting by January 2, north and central coast agencies (in Regions 1, 2, and 3) began reporting by May 2, 2007, and agencies in the Central Valley and Sierras (in Regions 5, 6, and 7) began reporting by September 2, 2007. *See* State Water Res. Control Bd., Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, May 2, 2006, at 17, Part D.15 [hereinafter Statewide Permit], *available at* http://www.swrcb.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2006_0003.pdf; *see also* STATE WATER RES. CONTROL BD., STATEWIDE GENERAL WDR FOR SANITARY SEWER SYSTEMS: REPORTING COMPLIANCE REPORT - MAY 2008 2 (2008) [hereinafter 2008 COMPLIANCE REPORT], *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/compliance_report2008.pdf.

[53] **Figures 2, 3** and **4** were created using data for September 2007 through October 2015, downloaded from the State Board's website as a tab-delimited text file (or "flat file"). *See SSO Data Flat Files: SSO.txt* (STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/water_issues/programs/sso/docs/index.php (file last accessed Dec. 18, 2015) [hereinafter *SSO.txt*]; *see also* **Chapter 8.A** for details on the acquisition and use of these data.

[54] Although the Enrollee's Guide to the SSO Database suggests that enrollees can select multiple causes when reporting an SSO, only one appears in the *SSO.txt* flat file. *See id.*; STATE WATER RES. CONTROL BD., ENROLLEE'S GUIDE TO THE SSO DATABASE, SANITARY SEWER OVERFLOW REDUCTION PROGRAM 24, 28, 33 (last updated Aug. 2013) [hereinafter ENROLLEE'S GUIDE], *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/discharger_workbook.pdf.

[55] Another potential issue is that the "actual root cause" of an SSO may differ from the cause reported by field staff. Scott Kelly et al., *Reducing Sanitary Sewer Overflows Without Breaking the Bank*, FLA. WATER RES. J., Jan. 2013, at 24, 24 fig.1 (describing how one collection system agency "established a Root Cause Committee that meets biweekly to review and act on each SSO," improving its ability to accurately determine the root cause of an SSO, which allows its staff to implement a program to minimize the possibility of the same event reoccurring" and demonstrating substantial disparities "between the reported preliminary cause and the actual root cause" of SSOs).

[56] *See* Stevens, *supra* note 2 ("Last December, when workers investigated a sewer spill, they found a 4- to 6-inch-wide tree root inside a pipe. Just 16 months earlier, an inspection found the sewer line "clean and clear," said Paul Bushee, general manager of the Leucadia Wastewater District.").

[57] *See id.*

[58] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 14 n.3 (describing cause categories). "Other" causes is a catch-all category that 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." *Id.*

[59] But note that the structural and operational/other categories may be slightly different, since the Annual Compliance Reports classify all pump station failures as structural. *See id.*

[60] *See* 2004 EPA REPORT, *supra* note 24, at 4-29 to 4-30.

[61] *See* WATER ENV'T FED'N, *supra* note 16, at 16–17; 2004 EPA REPORT, *supra* note 24, at 4-8, 5-27. Pollutant concentrations can vary over the course of a single overflow event. *See* Julien Passerat, et. al., *Impact of an Intense Combined Sewer Overflow Event on the Microbiological Water Quality of the Seine River*, 45 WATER RESEARCH 893, 897 (2011) (identifying variations in bacterial concentration over time).

[62] *See* 2004 EPA REPORT, *supra* note 24, at 4-9.



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[63] *See id.* at 4-3, 4-7.

[64] *See* 2004 EPA REPORT, *supra* note 24, at 4-8 to 4-9, 4-27, 5-9.

[65] A direct cause and effect relationship between SSOs and pollutant concentrations in water bodies has been difficult to establish. *See* SARAH J. MEYLAND, ET AL., MONITORING AND ASSESSING THE ENVIRONMENTAL AND HEALTH RISKS OF SEPARATE SANITARY SEWER OVEFLOWS (SSOS) (1998), *available at* http://acwi.gov/monitoring/conference/98proceedings/Papers/14MEYL.html (noting that "[i]t may be difficult to distinguish water quality changes caused by SSOs using traditional parameters of water quality (such as DO, TSS, $BOD_5$, etc.) from the many other contributions, both point and nonpoint, that streams and larger drainage areas receive," even though "pathogen loads and toxicants from SSOs may be very important in urban watershed quality").

[66] *See* 2004 EPA REPORT, *supra* note 24, at 4-9 to 4-13; JOHN F. GRIFFITH ET AL., THE CALIFORNIA MICROBIAL SOURCE IDENTIFICATION MANUAL: A TIERED APPROACH TO IDENTIFYING FECAL POLLUTION SOURCES TO BEACHES 2 (2013), *available at* ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/804_SIPP_MST_ManualPag.pdf.

[67] *See* Vikram Kapoor et al., *Distribution of Human-Specific Bacteroidales and Fecal Indicator Bacteria in an Urban Watershed Impacted by Sewage Pollution, Determined Using RNA and DNA-Based Quantitative PCR Assays*, 81 APPLIED & ENVTL. MICROBIOLOGY 91, 97 (2015).

[68] *See, e.g.*, Jared S. Ervin et al., *Microbial Source Tracking in a Coastal California Watershed Reveals Canines as Controllable Sources of Fecal Contamination*, 48 ENVTL. SCI. & TECH. 9043, 9045 (2014) (analyzing environmental samples for human, dog, gull, and horse-associated fecal markers); Oleksandr Panasiuk et al., *Contamination of Stormwater by Wastewater: A Review of Detection Methods*, 152 J. ENVTL. MGMT. 241 (2015); Jyotsna Jagai et al., Sanitary Sewer Overflows and Association with Gastrointestinal Illness: A case-crossover analysis of Massachusetts Data, 2006-2007, American Public Health Ass'n Annual Meeting, Chicago, IL, Nov. 2, 2015, *abstract available at* https://apha.confex.com/apha/143am/webprogram/Paper327947.html.

[69] *See* 2004 EPA REPORT, *supra* note 24, at 4-2. ("In general, adequate data were available to characterize treated and untreated wastewater, CSOs, and urban storm water. Monitoring data to characterize actual wet and dry weather SSO discharges, however, were less readily available.")

[70] *See infra* notes 287–289 and accompanying text.

[71] *See infra* note 299 and accompanying text.

[72] *See* 2004 EPA REPORT, *supra* note 24, at 4-2.

[73] SSOs do not occur at fixed locations or at expected times, while CSOs recur in association with precipitation events at designated locations. *See* MEYLAND, et al., *supra* note 65 ("The unpredictable and random nature of SSOs, in part, makes them very hard to monitor and study. Unlike a CSO, which often occurs at a predesignated location in the system, an SSO can happen almost anywhere along the sewer route."); 2004 EPA REPORT, *supra* note 24, at 5-6 to 5-7.

[74] CSOs are permitted under the CWA, giving permittees incentive to monitor water quality to demonstrate compliance with permit limitations. *See* 33 U.S.C. § 1342(q) ("Each permit, order, or decree issued pursuant to this chapter after December 21, 2000 for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy . . . ."); Combined Sewer Overflow (CSO) Control Policy, 59 Fed. Reg. 18688, 18688 (Apr. 11, 1994) (asking CSO permittees to "immediately undertake a process to accurately characterize their CSS and CSO discharges, demonstrate implementation of [nine] minimum technology-based controls identified in the Policy, and develop long-term CSO control plans which evaluate alternatives for attaining compliance with the CWA, including compliance with water quality standards and protection of designated uses," and "to implement the plans' recommendations as soon as practicable"). By contrast, SSOs that reach waters of the United States are interpreted to be flatly prohibited by the CWA (see **Chapter 2.A.2**). Therefore, demonstrating compliance does not involve measuring contaminant levels in effluent and receiving waters, so much as demonstrating success in avoiding SSOs in the first instance. *See* WATER ENV'T FED'N, *supra* note 16, at 211 (stating that "[t]he stated goal of CSO control is the attainment of WQS [water quality standards] in the receiving water" while SSOs "are prohibited by [the] CWA" so "[w]ater quality objectives or standards do not drive" their elimination; stating also that "[d]espite this regulatory limitation, some municipalities or collection authorities have invested in water quality assessment associated with SSO discharges," before proceeding to discuss receiving water monitoring and modeling in the context of CSOs only).

[75] *Cf.* 2004 EPA REPORT, *supra* note 24, at ES-8, 4-3 to 4-6 (discussing similarities in the occurrence and exposure risk of CSOs and wet weather SSOs and noting similar concentrations of bacteria, BOD, metals, in CSOs and wet weather SSOs, TSS); Bharat Doshi et al., Regional SSO Control: Key Elements and Examples from the City of Detroit's Long-Term Wastewater Master Plan, 6 PROC. WATER ENV'T FED'N 208 (2002) (stating that "CSO and SSO water quality is generally similar").

[76] Unless otherwise indicated, source is 2004 EPA REPORT, *supra* note 24, at 4-1 to 4-7, 5-3 tbl.5.1.

[77] These include *Enterococcus* species and *Escherichia coli*, which appear to be more closely correlated with disease risk than (and are replacing the use of) fecal coliform. *See* Russell D. Arnone & Joyce Perdek Walling, *Waterborne Pathogens in Urban Watershed*, 5 J. WATER & HEALTH 149, 149 (2007); Megan A. Rippy, et al., *Small Drains, Big Problems: The Impact of Dry Weather Runoff on Shoreline Water Quality at Enclosed Beaches*, 48 ENVTL. SCI. & TECH. 14,168, 14,169 (2014).

[78] *See* M.F. Rahman et al., *Endocrine Disrupting Compounds (EDCs) and Pharmaceuticals and Personal Care Products (PPCPs) in the Aquatic Environment: Implications for the Drinking Water Industry and Global Environmental Health*, 7 J. WATER & HEALTH 224, 225, 238 (2009).

[79] *See* WATER ENV'T FED'N, *supra* note 16, at 16–17; 2004 EPA REPORT, *supra* note 24, at 5-9, 5-27.



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[80] *See* WATER ENV'T FED'N, *supra* note 16, at 16–17; 2004 EPA REPORT, *supra* note 24, at 5-27.

[81] *See* 33 U.S.C. § 1313(c)(1), (c)(2)(A); 40 C.F.R. §§ 131.2, 131.4-131.6, 131.10–131.11, 131.12(a)(1).

[82] *See* 33 U.S.C. § 1313(d) (requiring the development of total maximum daily loads (TMDLs) to correct exceedences of particular pollutants).

[83] *See* Arnone & Perdek Walling, *supra* note 77, at 150.

[84] *See supra* notes 65–67 and accompanying text.

[85] *See* The Final New York State 2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy, Sept. 2014, at 6, *available at* http://www.dec.ny.gov/docs/water_pdf/303dlistfinal2014.pdf.

[86] *See* 2004 EPA REPORT, *supra* note 24, at 5-18.

[87] *See id.*

[88] *See id.*

[89] *See id.* at 5-25 to 5-26 (explaining that the closures continued "until shellfish tissue was clear of fecal coliform, viral, and metal contamination").

[90] *See* 2004 EPA REPORT, *supra* note 24, at 5-21 (citing STATE WATER RES. CONTROL BD., CALIFORNIA BEACH CLOSURE REPORT 2000 (2001)).

[91] *See* HEAL THE BAY, 2014–2015 ANNUAL BEACH REPORT CARD 11–20 (2015), *available at* http://www.healthebay.org/sites/default/files/BRC_2015_final.pdf.

[92] *See* 2004 EPA REPORT, *supra* note 24, at 5-7 tbl.5.4 (based on electronic impairment assessment data for 19 states with CSOs). A similar analysis for SSOs was not possible, since they occur at less predictable locations. *See id.* at 5-6 to 5-7.

[93] *See* Arnone & Perdek Walling, *supra* note 77, at 149.

[94] *See id.* at 149.

[95] 2004 EPA REPORT, *supra* note 24, at 6-12 to 6-13.

[96] Arnone & Perdek Walling, *supra* note 77, at 151.

[97] *Id.* at 151–52.

[98] *Id.* at 153.

[99] *Cf. id.* at 151 ("Discharges of stormwater runoff, CSO and SSO to receiving waters create the potential for disease outbreaks."). Since SSOs are generally unpredictable, unplanned events, "it is nearly impossible to conduct a controlled study to definitely identify a SSO as the source of a waterborne disease outbreak." OFFICE OF WATER PROGRAMS, CAL. STATE UNIV. SACRAMENTO, IMPACTS OF SANITARY SEWER OVERFLOWS AND COMBINED SEWER OVERFLOWS ON HUMAN HEALTH AND ON THE ENVIRONMENT: A LITERATURE REVIEW 4 (2008), *available at* https://www.owp.csus.edu/research/wastewater/papers/SSOLit-Review.pdf (noting that challenges include lack of baseline ("before") contaminant data, the use of non-pathogenic indicator organisms, incomplete tracking of waterborne illness, and pollutant contributions from other sources).

[100] *See* 2004 EPA REPORT, *supra* note 24, at 6-9 to 6-10, 6-10 tbl.6.6. In comparison to other sources of illness, these numbers are relatively small. *See e.g.*, *Estimates of Foodborne Illness in the United States*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/foodborneburden/ (last updated Jan. 8, 2014) (estimating that foodborne diseases sicken 48 million Americans each year). However, EPA's estimates may low. Another study, examining all sources of water contamination, estimated 627,800 to 1,479,200 annual cases of gastrointestinal disease at select beaches in Los Angeles and Orange County alone. Susan Given, et al., *Regional Public Health Cost Estimates of Contaminated Coastal Waters: A Case Study of Gastroenteritis at Southern California Beaches*, 40 ENVTL. SCI. TECHNOL. 4851, 4856 (2006). If SSOs were responsible for just a fraction of these cases, this model would account for more illnesses in this small area than EPA estimated nationwide.

[101] 2004 EPA REPORT, *supra* note 24, at 6-9 to 6-15.

[102] *Id.*

[103] *See id.* at 6-14; W.T. Vonstille et al., *Hepatitis A Epidemics from Utility Sewage in Ocoee, Florida*, 48 ARCHIVES OF ENVTL. HEALTH 120–24 (1993) (describing Hepatitis A outbreaks in a trailer park repeatedly inundated with sewage after power outages at nearby lift station).

[104] *See* BLACK & VEATCH, LLP, FOR AMER. SOC'Y OF CIVIL ENG'RS, OPTIMIZATION OF COLLECTION SYSTEM MAINTENANCE FREQUENCIES AND SYSTEM PERFORMANCE 1–2 (1999) [hereinafter BLACK & VEATCH 1999], *available at* http://www3.epa.gov/npdes/pubs/optimization-finalreport.pdf (describing collection systems as "out of sight, out of mind").

[105] *See* BLACK & VEATCH 1999, *supra* note 104, at 1-2; OFFICE OF WASTEWATER MANAGEMENT, EPA, FACT SHEET: ASSET MANAGEMENT FOR SEWER COLLECTION SYSTEMS 1 (2002), *available at* http://www3.epa.gov/npdes/pubs/assetmanagement.pdf.

[106] *See* BLACK & VEATCH, LLP, FOR AMER. SOC'Y OF CIVIL ENG'RS, PROTOCOLS FOR IDENTIFYING SANITARY SEWER OVERFLOWS 1-2 (2000), *available at* http://www3.epa.gov/npdes/pubs/ascessofinal.pdf.

[107] *Id.*



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[108] BLACK & VEATCH 1999, *supra* note 104, at 2.

[109] *See id.* at 2, 3, 7-17 (noting that "[t]he data for this study were difficult to collect, were guessed in some cases, and were not readily available from many of the agencies surveyed" and theorizing "that many agencies across the country also lack good data").

[110] *Id.* at 2. Other key activities were: (1) flow monitoring, (2) manhole inspection, (3) smoke testing, (4) CCTV, (5) private sector inspections, (6) manhole rehabilitation, (7) main line rehabilitation, (8) relief construction, and (9) private sector I/I removal. *Id.* at 5-2, tbl.2.

[111] *See id.* at 5, 1-2 ("Getting adequate maintenance budgets is dependent on justifying the level of maintenance required."). 

[112] *See* Kelly et al., *supra* note 55, at 28 (describing a "goal of zero preventable SSOs" for a collection system agency that had been working hard to reduce its SSOs using an active asset management approach); BLACK & VEATCH 1999, *supra* note 104, at 6-5 tbl.6-3, 6-9 tbl.6-7 (showing non-zero spill rates for agencies with high overall system performance ratings). Examples of factors beyond managers' reasonable control include exceptionally heavy precipitation events, earthquakes, construction accidents, and difficult to anticipate vandalism. Note that agencies can, and do, take steps to prevent repeat vandalism. For example, collection system staff told us that they have plugged holes in manhole covers or welded them on to prevent would-be vandals from inserting objects or debris into manholes.

[113] *See* WATER ENV'T FED'N, *supra* note 16, at 17–18.

[114] *See id.* at 18.

[115] *See* Hamid Zaman et al., *Improving the Productivity of Drainage Operations Activities Through Schedule Optimisation*, URBAN WATER J., DOI: 10.1080/1573062X.2015.1112409, at 1 (2015).

[116] *See* 2004 EPA REPORT, *supra* note 24, at 8-2 to 8-5; H. Plihal et al., *Innovative Sewer Inspection as a Basis for an Optimised Condition-Based Maintenance Strategy*, 9 WATER PRACTICE & TECH. 88 (2014) (presenting data to support a selective cleaning strategy based on operational condition assessment with a manhole-zoom camera instead of a cleaning at predefined intervals); Zaman et al., *supra* note 115, at 1.

[117] *See* 2004 EPA REPORT, *supra* note 24, at 8-2 to 8-5.

[118] *See, e.g.*, Kelly et al., *supra* note 55, at 29 (explaining that a "continual improvement management approach has resulted in a 79 percent reduction in SSO occurrences" between 2007 and 2011, "with no significant increase in O&M and capital investment," while "[t]he average life of the more than $1.75 billion in collection system assets has been extended from less than 30 years to approximately 60 years through enhanced O&M").

[119] *See* NAT'L ASS'N OF CLEAN WATER AGENCIES, OPPORTUNITIES & CHALLENGES IN CLEAN WATER UTILITY FINANCING AND MANAGEMENT: FINANCIAL SURVEY HIGHLIGHTS 25, 25 fig.13 (Feb. 2015) [hereinafter FINANCIAL SURVEY HIGHLIGHTS], *available at* http://www.nacwa.org/images/stories/public/2015-07-31finsurvey-execsum.pdf.

[120] The information in this table is based on the following sources: 2004 EPA REPORT, *supra* note 24, at 8-1 to 8-13; Kelly et al., *supra* note 55; WATER ENV'T FED'N, *supra* note 16, at 82–108; NAT'L ASS'N OF CLEAN WATER AGENCIES ET AL., CORE ATTRIBUTES OF EFFECTIVELY MANAGED WASTEWATER COLLECTION SYSTEMS (2010), *available at* http://stage.wef.org/CoreAttributesofWWCS/.

[121] *See, e.g.*, ELLEN HANAK, ET AL., PUB. POL'Y INST. OF CAL., PAYING FOR WATER IN CALIFORNIA 12 (2014), *available at* http://www.ppic.org/content/pubs/report/R_314EHR.pdf (noting that "[s]ignificant federal subsidies . . . accompanied the transformation of urban sewer systems following the passage of the Clean Water Act in 1972, with the federal government covering up to 85 percent of the required investments in the first generation of new wastewater treatment plants and associated facilities like pump stations"); 2004 EPA REPORT, *supra* note 24, at 9-2, 9-3, fig.9.1 (noting that the CWA's Construction Grants Program was slashed in 1981 and eliminated by 1995, with the Clean Water State Revolving Fund serving as a partial replacement). 

[122] *See* 2004 EPA REPORT, *supra* note 24, at 9-2, 9-3, fig.9.1.

[123] *See* FINANCIAL SURVEY HIGHLIGHTS, *supra* note 119, at 26 ("Unlike the early days of the CWA when the Federal government made significant investments in the nation's water infrastructure, today's repairs, legacy replacement needs and upgrades are almost entirely paid for by the utilities' ratepayers."). The report estimates that "[o]ver 75 percent of utility revenues are generated directly from system users via user charges, taxes, fees, and assessments," another 20% of revenue is debt financing repayable by system users. *Id.* at 27.

[124] *See* ELLEN HANAK ET AL., PUB. POL'Y INST. OF CAL., PAYING FOR WATER IN CALIFORNIA: TECHNICAL APPENDIX B: ESTIMATES OF WATER SECTOR EXPENDITURES, REVENUES, AND NEEDS 6 tbl.B3 (2014), *available at* http://www.ppic.org/main/publication.asp?i=1086 (estimating that 94% of the revenue for local wastewater agencies comes from service charges or other local revenue sources, 5% comes from property taxes, assessments, and special taxes, and 1% comes from government grants).

[125] *See* EPA, CLEAN WATERSHEDS NEEDS SURVEY 2012: CALIFORNIA, *available at* http://www.epa.gov/sites/production/files/2015-10/documents/cwns_fs-ca.pdf; *see also* EPA, CLEAN WATERSHEDS NEEDS SURVEY 2012: REPORT TO CONGRESS, at 1 (2016), *available at* http://www.epa.gov/sites/production/files/2015-12/documents/cwns_2012_report_to_congress-508-opt.pdf ("While this Report might capture needs over a period of up to 20 years, nearly all needs it includes are for projects that will be completed within 5 years (i.e., 2012–2017). States do not generally have documentation for needs over a 20-year time frame. Forty percent of CWNS 2012



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needs are documented using capital improvement plans (CIPs). CIPs include only projects that can be accomplished within the municipalities' budgets and within a specified number of years (typically 3-5 years).").

[126] *See Questionnaire.txt*, *supra* note 32.

[127] *See Questionnaire.txt*, *supra* note 32. This is generally consistent with a 2013 national survey, which found that wastewater utilities were spending more on operation and maintenance than on capital improvements. *See* FINANCIAL SURVEY HIGHLIGHTS, *supra* note 119, at 10, 10 fig.4.

[128] According to a 2014 report by the Public Policy Institute of California, wastewater agencies "have generally been able to raise . . . sewer bills to cover their operational costs and invest at a healthy pace." HANAK, ET AL., *supra* note 121, at 26.

[129] Proposition 218, enacted November 5, 1996; Proposition 13 (enacted June 6, 1978); Proposition 26 (enacted November 2, 2010).

[130] *See* HANAK, ET AL., *supra* note 121, at 2.

[131] *See id.*; *see also* CAL. CONST. art. XIII D, § 6 (requiring an election on a property-related fee or fee increase for services other than "sewer, water, and refuse collection services" with approval by either (1) two-thirds of the registered voters or (2) a simple majority of the affected property owners).

[132] *See* HANAK, ET AL., *supra* note 121, at 32, 59 (discussing affordability concerns and noting that "the best [funding] options are not always feasible because of legal or political constraints").

[133] In many cases, a collection system agency is also responsible for the wastewater treatment facility it feeds into. *See Questionnaire.txt*, *supra* note 32; *see also* 2004 EPA REPORT, *supra* note 24, at 4-19 to 4-21. The 2012 Needs Survey estimated that $10.4 billion would be needed for wastewater treatment facility improvements between about 2012 and 2017. *See* Clean Watersheds Needs Survey 2012: California, *supra* note 125.

[134] *See* FINANCIAL SURVEY HIGHLIGHTS, *supra* note 119, at 28.

[135] For example, aging sewer infrastructure that is particularly susceptible to SSOs is common in older urban areas where these communities are often concentrated. *See* Loren Denton, Sanitary Sewer Overflow Enforcement: A National Perspective, at 9 (2015), *available at* http://www.weat.org/Presentations/2015CMOM1_Denton_CMOM.pdf. As a result of federal enforcement efforts, some agencies are beginning to include environmental justice concerns as one of several criteria for prioritizing collection system assessment and rehabilitation. *See* U.S. DEP'T OF JUSTICE, 2013 IMPLEMENTATION PROGRESS REPORT ON ENVIRONMENTAL JUSTICE 17–18 (2013), *available at* http://www.justice.gov/sites/default/files/ej/legacy/2014/02/11/env_enforcement-2427806-v2-ej_doj_annual_report_fy2013.pdf (describing such prioritization in Chattanooga, Tennessee, and Jackson, Mississippi); *City of Memphis – Tennessee Sanitary Sewer Overflow Settlement*, EPA, http://www2.epa.gov/enforcement/city-memphis-tennessee-sanitary-sewer-overflow-settlement (last updated Jan. 29, 2016) (identifying 4 criteria for prioritizing assessment and rehabilitation: (1) infrastructure age, (2) SSO frequency and volume, (3) "proximity to Clean Water Act 303(d) listed streams," and (4) "proximity to environmental justice communities").

[136] *See* Denton, *supra* note 135, at 12–15.

[137] Recognizing the importance of sustainable approaches to meeting CWA objectives, EPA has developed a Financial Capability Assessment Framework to inform integrated wastewater and stormwater permitting and enforcement implementation schedules. It "provides for consideration of the impact on residential rate payers and the financial capability of the permittee using a suite of indicators, . . . allowing schedules to be responsive to circumstances unique to that community, while advancing the mutual goal to protect clean water." *See* EPA, Financial Capability Assessment Framework, Nov. 24, 2014, at 2, *available at* http://www.epa.gov/envirofinance/financial-capability-assessment-framework; *see also* EPA, Office of Water, Office of Wastewater Management, Combined Sewer Overflows—Guidance for Financial Capability Assessment and Schedule Development, EPA 832B-97-004, February 1997, http://www.epa.gov/npdes/pubs/csofc.pdf. *But see* Claudia Copeland, CONGRESSIONAL RESEARCH SERVICE, EPA POLICIES CONCERNING INTEGRATED PLANNING AND AFFORDABILITY OF WATER INFRASTRUCTURE (Oct. 8, 2015) (noting that, "[w]hile integrated planning may be helpful in identifying communities' relative priorities, a longstanding concern for local governments is EPA's process for evaluating how much communities can afford for CWA-mandated and other water infrastructure improvements"). If adopted, H.R. 1705, introduced in March 2015, would codify this approach. *See* H.R. 1705, 114th Cong., § 101 (2105).

[138] For example, the City of Los Angeles Bureau of Sanitation offers a Low Income Discount Program to qualifying customers that reduces their sewer service charge by 31%. *See SSC Low Income Discount, SRF Reduction and Other Programs*, CITY OF LOS ANGELES BUREAU OF SANITATION, http://www.lacitysan.org/fmd/SSClid.htm (last updated Sept. 20, 2012).

[139] *See* 2004 EPA REPORT, *supra* note 24, at 7-5 (stating that "there is no national regulatory program specific to SSOs").

[140] EPA has the authority to develop SSO-specific requirements. *See* 33 U.S.C. § 1361 (authorizing the EPA Administrator "to prescribe such regulations as are necessary to carry out his functions under this chapter"); 33 U.S.C. § 1314(i) (requiring the EPA Administrator to "promulgate guidelines establishing the minimum procedural and other elements of any State [NPDES] program," including monitoring and reporting requirements and enforcement provisions); 33 U.S.C. § 1318 (requiring the EPA Administrator to impose mandates necessary for carrying out Clean Water Act objectives, including for (1) establishing and maintaining records, (2) making reports, (3) installing, using, and maintaining "monitoring equipment or methods," (4) sampling effluent, and (5) providing additional, "reasonably require[d]," information; requiring related "records, reports, or information" to be made available to the public, unless confidential); 33 U.S.C. § 1342(a) (authorizing the EPA Administrator to issue NPDES permits and requiring the inclusion of



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"conditions . . . to assure compliance . . . , including conditions on data and information collection, reporting, and such other requirements as . . . appropriate").

[141] *See* Stakeholder Input; National Pollutant Discharge Elimination System (NPDES) Permit Requirements for Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, Sanitary Sewer Overflows, and Peak Wet Weather Discharges from Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems, 75 Fed. Reg. 30395, 30399 (June 1, 2010) [hereinafter 2010 Notice]; *see also* Office of Water, EPA, Sanitary Sewer Overflows and Peak Flows Listening Sessions (2010), *available at* http://www.epa.gov/npdes/pubs/sso-listening%20session-2010.pdf.

[142] *See* 2010 Notice, *supra* note 141, at 30398; 2004 EPA REPORT, *supra* note 24, at 7-3; *see also Sierra Club v. Hamilton Cnty. Bd. of Cnty. Comm'rs*, 504 F.3d 634, 637 (6th Cir. 2007) (stating that SSOs "are a violation of the Act and have been since 1972).

[143] *See* 2004 EPA REPORT, *supra* note 24, at 7-11 to 7-12 (identifying 26 judicial actions for SSOs between 1995 and 2004 and, between 1994 and 2003, 78 Administrative Orders and 12 Administrative Penalty Orders related to SSOs); *Water*, U.S. DOJ, http://www.justice.gov/enrd/water (last updated Apr. 13, 2015) (identifying a renewed emphasis on sewage collection systems [b]y the mid-1990s").

[144] *See* Combined Sewer Overflow (CSO) Control Policy, 59 Fed. Reg. 18,688 (Apr. 19, 1994).

[145] *See* Consolidated Appropriations Act for Fiscal Year 2001, Pub. L. No. 106-554 (codified at 33 U.S.C. § 1342(q)(1)).

[146] 2004 EPA REPORT, *supra* note 24, at 2-11.

[147] *See* Notification of Establishment of an Advisory Committee to Address Urban Municipal Wet Weather Issues, 60 Fed. Reg. 21,189, 21,190 (May 1, 1995).

[148] Memorandum on Enforcement Efforts Addressing Sanitary Sewer Overflows from Steven A. Herman, Assistant Administrator, Office of Water, EPA, to Regional Water Management Division Directors and Counsels and State Directors (Mar. 7, 1995), *available at* http://www3.epa.gov/npdes/pubs/owm0146.pdf.

[149] EPA, ENFORCEMENT MANAGEMENT SYSTEM: NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM, ch. X (1996) [hereinafter EMS CHAPTER X], *available at* http://www2.epa.gov/sites/production/files/documents/ssodoc.pdf.

[150] *See* EPA, CASE STUDY: CLEARWATER, FL, ABATES SANITARY SEWER OVERFLOWS USING THE EPA REGION 4 MANAGEMENT, OPERATIONS AND MAINTENANCE APPROACH 1, 2 (2002), *available at* http://www3.epa.gov/npdes/pubs/clearwater.pdf (describing Clearwater, which "agreed to perform a seven-month self-assessment in November of 1998," as "one of the first communities contacted by the Region to participate in the program").

[151] *See* 2010 Notice, *supra* note 141, at 30398, 30399; *see also* 2004 EPA REPORT, *supra* note 24, at 2-10 to 2-11.

[152] *See* City of Ontario, Old Model Colony and New Model Colony Sewer Master Plan Update, at 2-7 (2012) (discussing "Future Regulations—Capacity, Management, Operation, and Maintenance (CMOM)").

[153] Memorandum on Compliance and Enforcement Strategy Addressing Combined Sewer Overflows and Sanitary Sewer Overflows from Steven A. Herman, Assistant Administrator, EPA, to Regional Water Management Division Directors, Enforcement Divisi on Directors, and Counsels, at 1, 3 (Apr. 27, 2000), *available at* http://www2.epa.gov/sites/production/files/documents/strat312.pdf.

[154] *See* City of Ontario, *supra* note 152, at 2-7 to 2-8.

[155] *See* Memorandum for the Heads and Acting Heads of Executive Departments and Agencies, 66 Fed. Reg. 7,702 (Jan. 24, 2001) (withdrawing proposed or final regulations sent to th e Office of the Federal Register but not yet published for review and approval by "a department or agency head appointed by the President after noon on January 20, 2001").

[156] *See* City of Ontario, *supra* note 152, at 2-8.

[157] *See What's New: 2001/11/08*, CMOM.NET, http://www.cmom.net/whatsnew.htm (last visited Feb. 18, 2016); City of Ontario, *supra* note 152, at 2-8.

[158] *See* 2004 EPA REPORT, *supra* note 24, at ES-1.

[159] EPA, GUIDE FOR EVALUATING CAPACITY, MANAGEMENT, OPERATION, AND MAINTENANCE (CMOM) PROGRAMS AT SANITARY SEWER COLLECTION SYSTEMS (2005) [hereinafter CMOM GUIDE], *available at* http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf.

[160] *See* Memorandum on Guidelines for Federal Enforcement in CSO/SSO Cases from Thomas V. Skinner, Acting Assistant Administrator, Office of Enforcement and Compliance Assurance, EPA, to EPA Regions & ECOS Compliance Committee, at 2 (Apr. 10, 2005) [hereinafter 2005 Memorandum], *available at* http://www.epa.gov/sites/production/files/documents/csosso-guidelines-enf.pdf.

[161] *See* EPA, NPDES PERMIT REQUIREMENTS FOR MUNICIPAL SANITARY SEWER COLLECTION SYSTEMS AND SSOS – DRAFT (Aug. 20, 2007) [hereinafter DRAFT SSO PERMIT REQUIREMENTS], *available at* http://www.epa.gov/npdes/pubs/sso_fact_sheet_model_permit_cond.pdf; EPA, MODEL NPDES PERMIT LANGUAGE FOR SANITARY SEWER OVERFLOWS – DRAFT (Aug. 20, 2007) [hereinafter MODEL LANGUAGE], *available at* http://www.epa.gov/npdes/pubs/sso_model_permit_conditions.pdf.



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[162] 2010 Notice, *supra* note 141, at 30399; *see also NPDES Permit Requirements for Municipal Sanitary Systems, Municipal Satellite Collection Systems, Sanitary Sewer Overflows, and Peak Excess Flow Treatment Facilities*, EPA, http://yosemite.epa.gov/opei/rulegate.nsf/byRIN/2040-AD02 (last updated June 10, 2015).

[163] *See* Notice of EPA Workshop on Sanitary Sewer Overflows and Peak Wet Weather Discharges, 76 Fed. Reg. 35,215 (June 16, 2011) (announcing July 14–15 workshop).

[164] Memorandum on Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans from Nancy Stoner, Acting Assistant Administrator, Office of Water, & Cynthia Giles, Assistant Administrator, OECA, EPA, to EPA Regional Administrators, OW & OECA Office & Division Directors, Oct. 27, 2011, *available at* http://www.epa.gov/npdes/pubs/memointegratedmunicipalplans.pdf; *see also Integrated Planning for Municipal Stormwater and Wastewater*, EPA, http://www.epa.gov/npdes/integrated-planning-municipal-stormwater-and-wastewater (last updated Nov. 16, 2015).

[165] Memorandum on Integrated Municipal Stormwater and Wastewater Planning Approach Framework from Nancy Stoner, Acting Assistant Administrator, Office of Water, & Cynthia Giles, Assistant Administrator, OECA, EPA, to EPA Regional Administrators & Regional Permit and Enforcement Division Directors (June 5, 2012), *available at* http://www.epa.gov/sites/production/files/2015-10/documents/integrated_planning_framework.pdf.

[166] *See* NPDES Electronic Reporting Rule, 78 Fed. Reg. 46,006, 46,029 (July 30, 2013).

[167] *See* 33 U.S.C. § 1251(a)(1). Although Congress originally envisioned meeting this goal by 1985, actual results have fallen well short of even the interim target of achieving surface waters that are universally swimmable and fishable. *See* 33 U.S.C. § 1251(a)(1), (2) (describing the interim goal of "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water").

[168] 33 U.S.C. § 1251(a). The 1972 Act revised the 1948 Federal Water Pollution Control Act to achieve "a stronger regulatory, water chemistry-focused basis to deal with acute industrial and municipal effluents that existed in the 1970s." NAT'L RESEARCH COUNCIL, URBAN STORMWATER MANAGEMENT IN THE UNITED STATES 47 (2009), *available at* http://www.nap.edu/catalog/12465/urban-stormwater-management-in-the-united-states. Among other things, the CWA requires states to adopt and update water quality standards that include the designated beneficial uses of particular water bodies and water quality criteria sufficient to protect those designated uses. *See* 33 U.S.C. § 1313(c)(1) (requiring governors or state water pollution control agencies to "hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards" at least every three years); 33 U.S.C. § 1313(c)(2)(A) (describing general water quality standard requirements). Potential beneficial uses include "public water supplies, propagation of fish and wildlife, [and] recreational purposes," among others. 33 U.S.C. § 1313(c)(2)(A).

[169] *See* 33 U.S.C. § 1313(c)(1) (requiring governors or state water pollution control agencies to "hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards" at least every three years); 33 U.S.C. § 1313(c)(2)(A) (describing general water quality standard requirements).

[170] 33 U.S.C. § 1313(c)(2)(A).

[171] The Ninth Circuit has called the NPDES permitting program "the 'centerpiece' of the CWA and the primary method for enforcing the effluent and water-quality standards established by the EPA and state governments." *Natural Res. Def. Council, Inc. v. Cnty. of Los Angeles*, 673 F.3d 880, 891 (9th Cir. 2011).

[172] *See* 33 U.S.C. § 1311(a) ("Except as in compliance with this section and sections 1312, 1316, 1317, 1328, 1342, and 1344 of this title, the discharge of any pollutant by any person shall be unlawful."); 33 U.S.C. § 1362(12). "Discharge of a pollutant" or "discharge of pollutants" is "any addition of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12). A "pollutant" is "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water." 33 U.S.C. § 1362(6) (emphasis added). "Navigable waters" are "the waters of the United States, including the territorial seas." 33 U.S.C. § 1362(7); *see also supra* note 4 (discussing litigation over EPA regulations defining "waters of the United States). A "point source" is "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). A "person" includes a "State, municipality, commission, or political subdivision of a State." 33 U.S.C. § 1362(5).

[173] *See* 33 U.S.C. § 1342(a)(1), (b). The maximum permit term is 5 years. 33 U.S.C. § 1342(b)(1)(B).

[174] The CWA sets out technology-based effluent limitations for different types of sources at 33 U.S.C. § 1311(b).

[175] *See* § 1311(b)(1)(C) (requiring "any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations . . . or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this chapter"); 40 C.F.R. § 122.44(d)(1) ("Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.").

[176] *See, e.g.*, 33 U.S.C. §§ 1318, 1342(a)(2); 40 C.F.R. §§ 122.44(i), 122.48.

[177] *See* 33 U.S.C. § 1342(k) ("Compliance with a permit issued pursuant to this section shall be deemed compliance, for purposes of sections 1319 [enforcement] and 1365 [citizen suits] of this title, with sections 1311 [effluent limitations], 1312 [water quality related



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effluent limitations], 1316 [national standards of performance], 1317 [toxic and pretreatment effluent standards], and 1343 [ocean discharge criteria] of this title, except any standard imposed under section 1317 of this title for a toxic pollutant injurious to human health."); *see also* EMS CHAPTER X, *supra* note 149, at 2.

[178] *See* 33 U.S.C. § 1311(b)(1)(B), (C) ("In order to carry out the objective of this chapter there shall be achieved . . . for publicly owned treatment works . . . effluent limitations based upon secondary treatment as defined by the Administrator . . . ; or, . . . any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations . . . or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this chapter.").

[179] *See* 33 U.S.C. § 1311(b)(1)(A) ("[T]here shall be achieved . . . effluent limitations for point sources, other than publicly owned treatment works, (i) which shall require the application of the best practicable control technology currently available as defined by the Administrator pursuant to section 1314(b) of this title, or (ii) in the case of a discharge into a publicly owned treatment works . . . , which shall require compliance with any applicable pretreatment requirements and any requirements under section 1317 of this title.").

[180] Secondary Treatment Information, 48 Fed. Reg. 52272, 52273 (Nov. 16, 1983) (referring to language in the Senate and House Committee Reports for the 1972 Act).

[181] *See* 33 U.S.C. §§ 1311(b)(1)(B) (requiring POTWs to meet "effluent limitations based upon secondary treatment as defined by the [EPA] Administrator"); 33 U.S.C. 1314(d)(1) (requiring the EPA Administrator to publish "information, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, on the degree of effluent reduction attainable through the application of secondary treatment"); 33 U.S.C. § 1314(d)(4) (deeming "such biological treatment facilities as oxidation ponds, lagoons, and ditches and trickling filters . . . the equivalent of secondary treatment" and requiring the Administrator to "provide guidance under paragraph (1) of this subsection on design criteria for such facilities, taking into account pollutant removal efficiencies and, consistent with the objectives of this chapter, assuring that water quality will not be adversely affected by deeming such facilities as the equivalent of secondary treatment"). The EPA secondary treatment regulations can be found at 40 C.F.R. Part 133.

[182] *See* 40 C.F.R. §§ 133.101 (definitions), 133.102 (secondary treatment), 133.103 (special considerations), 133.105 (treatment equivalent to secondary treatment).

[183] *Iowa League of Cities v. E.P.A.*, 711 F.3d 844, 856 (8th Cir. 2013) (quoting the EPA NPDES PERMIT WRITERS' MANUAL 5-1 (2010)); *see also* Secondary Treatment Information, 48 Fed. Reg. 52,258, 52,259 (Nov. 16, 1983).

[184] *Montgomery Envtl. Coal. v. Costle*, 646 F.2d 568, 590 (D.C. Cir. 1980).

[185] *See* 33 U.S.C. § 1292 (beginning "[a]s used in this subchapter . . .").

[186] *Montgomery Envtl. Coal.*, 646 F.2d at 590–91 (noting that Congress could have cross-referenced or duplicated the definition if it intended that definition, which was broader than "the common meaning of the word," to apply).

[187] *Id.* at 590–91.

[188] *Id.* at 589–91.

[189] OFFICE OF WATER, EPA, COMBINED SEWER OVERFLOWS: GUIDANCE FOR PERMIT WRITERS 2-1 (1995), *available at* http://www.epa.gov/sites/production/files/2015-10/documents/csopermitwriters_full.pdf; *see also* Combined Sewer Overflow (CSO) Control Policy, 59 Fed. Reg. 18,688, 18,695, Apr. 19, 1994) (citing *Montgomery Envtl. Coal.* to support the statement that "CSOs are not subject to secondary treatment regulations applicable to [POTWs]" and calling for CSO permits to "require the nine minimum controls as a minimum best available technology economically achievable and best conventional technology (BAT/BCT) established on a best professional judgment (BPJ) basis by the permitting authority (40 C.F.R. 125.3)").

[190] *See generally*, Alexandra Dapolito Dunn, Sanitary Sewer Overflows: Legal Issues, SM020 ALI-ABA 297 (2006).

[191] 2010 Notice, *supra* note 141, at 30,398. In 2001, proposed SSO regulations would have codified this interpretation, but "the incoming Bush Administration withdrew the proposal before it was published in the Federal Register." Dapolito Dunn, *supra* note 190, at 299, 302 (2006) (stating also that "EPA's discussion of the legal status of SSOs in the Draft SSO Rule preamble . . . appears to have been heavily influenced by input from the enforcement side of the Agency and from those Regions that have taken the position that all SSOs are illegal and cannot be authorized unless they comply with Secondary Treatment" (citing pre-2000 EPA guidance document language as evidence of prior alternative views)).

[192] *See generally* Dapolito Dunn, *supra* note 190.

[193] *See* Water Resources Reform and Development Act of 2014, Pub. L. No. 113-121, 128 Stat. 1193, 1328, tit. V § 5012(b) (codified at 33 U.S.C. § 1362(26)); 33 U.S.C. § 1362(26) (stating in full: "The term 'treatment works' has the meaning given the term in section 1292 of this title.").

[194] 33 U.S.C. § 1292(2)(A).

[195] *See* Amendments to Streamline the National Pollutant Discharge Elimination System Program Regulations: Round Two, 65 Fed. Reg. 30,886-01 (May 15, 2000) (amending the definition of POTW to point to 40 C.F.R. § 403.3); General Pretreatment Regulations for Existing and New Sources, 46 Fed. Reg. 9,404 (Jan. 28, 1981) (introducing the current definition to 40 C.F.R. § 403.3). The current (2000 to present) regulatory definition specifically references § 1292:



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> [t]he term Publicly Owned Treatment Works or POTW means a treatment works *as defined by section 212 of the Act* [33 U.S.C. § 1292], which is owned by a State or municipality. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant.

40 C.F.R. § 403.3(q) (emphasis added). From 1980 to 2000, EPA's definition used similar language, but lacked reference to § 1292:

> POTW means 'publicly owned treatment works.' . . . Publicly owned treatment works ('POTW') means any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a 'State' or 'municipality.' This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Consolidated Permit Regulations: RCRA Hazardous Waste; SDWA Underground Injection Control; CWA National Pollutant Discharge Elimination System; CWA Section 404 Dredge or Fill Programs; and CAA Prevention of Significant Deterioration, 45 Fed. Reg. 33,290, 33,423 (May 19, 1980).

[196] 40 C.F.R. § 403.3(q) (emphasis added), *referenced by* 40 C.F.R. § 122.2 (stating that "POTW is defined at § 403.3 of this chapter"). The current regulations provide that

> [t]he term Publicly Owned Treatment Works or POTW means a treatment works as defined by section 212 of the Act [33 U.S.C. § 1292], which is owned by a State or municipality. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant.

40 C.F.R. § 403.3(q).

[197] *See Enforcement to Address Sewer Overflows*, EPA, http://www3.epa.gov/region1/sso/enforcement.html (last updated Jan. 26, 2016) ("Properly designed, operated, and maintained sanitary sewer systems are meant to collect and transport all of the sewage that flows into them to a publicly owned treatment works (POTW)."). 

[198] *See, e.g.*, National Combined Sewer Overflow Control Strategy Document Availability, 54 Fed. Reg. 37,370, 37,371 (Sept. 8, 1989) ("Discharges from separate sanitary sewer systems with less than secondary treatment are prohibited."); *see also, e.g.*, EPA, SOURCE WATER PROTECTION PRACTICES BULLETIN: MANAGING SANITARY SEWER OVERFLOWS AND COMBINED SEWER OVERFLOWS TO PREVENT CONTAMINATION OF DRINKING WATER 2 (2001) ("SSOs . . . typically are not permitted and are generally prohibited."); OFFICE OF COMPLIANCE, EPA, DRAFT PROFILE OF TRIBAL GOVERNMENT OPERATIONS 3-78 (2005), *available at* http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=900C0K00.txt ("SSOs are unpermitted, illegal discharges under the CWA and may subject the tribal government to enforcement action by EPA or the tribal regulatory authority.").

[199] *See* 33 U.S.C. § 1342(a)(1), (b).

[200] *See* 40 C.F.R. § 122.41 (stating that "[a]ll conditions applicable to NPDES permits shall be incorporated into the permits either expressly or by reference").

[201] 40 C.F.R. § 123.25(a).

[202] 40 C.F.R. § 122.41(e). When it first introduced this standard permit condition, EPA noted that a requirement for proper operation and maintenance was "clearly authorized . . . by section 402(a)(2) of CWA which requires the Administrator to prescribe permit conditions which will assure compliance with the requirements of CWA section 402(a)(1)." Consolidated Permit Regulations: RCRA Hazardous Waste; SDWA Underground Injection Control; CWA National Pollutant Discharge Elimination System; CWA Section 404 Dredge or Fill Programs; and CAA Prevention of Significant Deterioration, 45 Fed. Reg. 33,290, 33,303 (May 19, 1980).

[203] 2010 Notice, *supra* note 141, at 30399; *see also Sierra Club v. Hamilton Cnty. Bd. of Cnty. Comm'rs*, 504 F.3d 634, 637 (6th Cir. 2007) (stating that SSOs "are a violation of the Act and have been since 1972").

[204] 40 C.F.R. § 122.41(d).

[205] 2010 Notice, *supra* note 141, at 30,400.

[206] *See* DRAFT SSO PERMIT REQUIREMENTS, *supra* note 161, at 2.

[207] *See* CMOM GUIDE, *supra* note 159.

[208] 40 C.F.R. § 122.41(l)(6)(i).

[209] 40 C.F.R. § 122.41(l)(7).

[210] 40 C.F.R. § 122.41(l)(6)(ii), (7).

[211] *See* 2010 Notice, *supra* note 141, at 30,399.

[212] *See* DRAFT SSO PERMIT REQUIREMENTS, *supra* note 161.

[213] MODEL LANGUAGE., *supra* note 161.

[214] *See* ASS'N OF METRO. SEWERAGE AGENCIES, SANITARY SEWER OVERFLOWS: LEGAL ISSUES 9–11 (2004), *available at* http://archive.nacwa.org/getfilefe24.pdf?fn=200401-12SSOWhitePaper.pdf

[215] *See* 2010 Notice, *supra* note 141, at 30,400–01 (requesting "input on the appropriate criteria that should be used in such a provision").



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[216] 2010 Notice, *supra* note 141, at 30400.

[217] 40 C.F.R. § 122.41(m)(1)(i).

[218] 40 C.F.R. § 122.41(m)(2); *see also Iowa League of Cities v. EPA*, 711 F.3d 844, 876–878 (8th Cir. 2013) (stating that EPA does not have the statutory authority to "appl[y] effluent limitations to a facility's internal secondary treatment processes, rather than at the end of the pipe," suggesting that EPA regulations could not disallow bypass as long as water quality standards were met).

[219] 40 C.F.R. § 122.41(m)(4) (noting that 24hour notice under 40 C.F.R. § 122.41(l)(6) fulfills the notice requirement for an unanticipated bypass).

[220] *See, e.g.*, WATER ENV'T FED'N, THE O & M IN CMOM: "OPERATION & MAINTENANCE": A REFERENCE GUIDE FOR UTILITY OPERATORS, 30 (2004), *available at* http://www.cmom.net/wef_cmom_o&m_v23a.doc ("In the 1989 National Combined Sewer Overflow Control Policy, EPA interprets the bypass provisions under 40 CFR 122.41 to apply only to those flows which reach the headworks of the treatment facility, but do not receive full treatment. Flows which discharge prior to reaching the headworks are not bypasses and cannot be authorized under the bypass provisions in EPA's regulations. Rather, such discharges must be authorized separately by an NPDES permit. Because SSO's, like CSOs, never reach the headworks, the analysis would be the same for SSO's."); ASS'N OF METRO. SEWERAGE AGENCIES, *supra* note 214, at 10; John C. Hall et al., *A Lack of Coordination*, Keystone Water Quality Manager May/June 2002, at 14, 16, 18, *available at* http://www.hall-associates.com/publications/epawetweather/epawetweather.html; Sanitary Sewer Overflow Bypass System Help: Definitions, MO. DEP'T NATURAL RES., http://www.dnr.mo.gov/env/wpp/bypass/index.htm (last visited Feb. 18, 2016) (defining "bypass" as occurring "at the wastewater treatment plant" and "overflow" as occurring "in the collection system"). Additionally, the bypass regulation itself contains examples of specific feasible alternatives—all of which are relevant to treatment facilities, but not to collection systems. *See* 40 C.F.R. § 122.41(m)(4)(i)(B) ("Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless . . . [t]here were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance . . . ."). [221] *See Eliminating Sanitary Sewer Overflows in New England: Sanitary Sewer Overflows, USEPA Office of Water*, EPA REGION 1, http://www3.epa.gov/region1/sso/ (last updated Jan. 26, 2016) (describing SSOs as "occasional unintentional discharges of raw sewage from municipal sanitary sewers").

[222] *See, e.g.*, Jerry Soto, *Bypass with Care*, MUN. SEWER & WATER, Oct. 2009, *available at* http://www.mswmag.com/editorial/2009/10/bypass-with-care (discussing the equipment, planning, and expertise needed to perform a successful sewage bypass).

[223] 2010 Notice, *supra* note 141, at 30,400.

[224] 40 C.F.R. § 122.41(n)(1) (explaining further that "[a]n upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation").

[225] *See* 40 C.F.R. § 122.41(n)(2)–(4).

[226] *See Sierra Club v. City of Colo. Springs*, No. CIV.A. 05-CV-01994WD, 2009 WL 2588696, at *5 (D. Colo. Aug. 20, 2009); *Foti v. City of Jamestown Bd. of Pub. Utils.*, No. 10CV575A, 2014 WL 3842376, at *1 n.2 (W.D.N.Y. Aug. 5, 2014).

[227] *See Sierra Club v. Union Oil Co.*, 813 F.2d 1480, 1483–84, 1489 (9th Cir. 1987), *vacated on other grounds*, 485 U.S. 931 (1988), *judgment reinstated*, 853 F.2d 667 (9th Cir. 1988); Consolidated Permit Regulations; Revision in Accordance with Settlement, 47 Fed. Reg. 52,072, 52,079 (Nov. 18, 1982).

[228] State Water Res. Control Bd., Fact Sheet: Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, May 2, 2006, at 6 [hereinafter Statewide Permit Fact Sheet], *available at* http://www1.cityoflompoc.com/utilities/wastewater/pdf/WDR_Fact_Sheet.pdf.

[229] EPA, SSO Proposed Regulations Comparison Paper, at 11 (2000), *available at* http://archive.nacwa.org/getfile9451.pdf?fn=ra01-2b.pdf.

[230] All of the regulators we interviewed (and many of the other stakeholders) offered this view.

[231] *See* 33 U.S.C. § 1342(b); 40 C.F.R. Part 123; *see also State Program Authority*, EPA, http://www.epa.gov/npdes/npdes-state-program-information (last updated Feb. 10, 2016) (listing California as having an authorized state NPDES permit program since 1973).

[232] *See National Pollutant Discharge Elimination System (NPDES) – Wastewater*, STATE WATER RES. CONTROL BD., http://www.swrcb.ca.gov/water_issues/programs/npdes/ (last updated Feb. 12, 2016).

[233] *See S.F. Baykeeper, Inc. v. Tosco Corp.*, 309 F.3d 1153 (9th Cir. 2002); *S.F. Baykeeper v. W. Bay Sanitary Dist.*, 791 F.Supp.2d 719, 729 (N.D. Cal. 2011); CAL. WATER CODE § 13267.

[234] *See* CAL. WATER CODE §§ 13000, 13050(e) (defining "waters of the state" as "any surface water or groundwater, including saline waters, within the boundaries of the state"). The act defines "waste" broadly to encompass "sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation." CAL. WATER CODE § 13050(d).



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[235] *See*, e.g., CAL WATER CODE §§ 13001, 13140–13142, 13160, 13164, 13170, 13245, 13245.5.

[236] *See* CAL. WATER CODE §§ 13225, 13240, 13241, 13243, 13263.

[237] *See* CAL. WATER CODE § 13050(j).

[238] Statewide Permit, *supra* note 52, at 4, finding 16.

[239] *See* CAL. WATER CODE §§ 13170, 13240, 13241; STATE WATER RES. CONTROL BD., POLICY FOR IMPLEMENTATION AND ENFORCEMENT OF THE NONPOINT SOURCE POLLUTION CONTROL PROGRAM 3 (2004) (noting that the RWQCB's can choose to waive waste discharge requirements for certain categories of discharges through basin plan amendments).

[240] *See supra* note 233 and accompanying text.

[241] STATE WATER RES. CONTROL BD., *supra* note 239, at 3–4.

[242] *See* CAL. WATER CODE § 13374 ("The term "waste discharge requirements" as referred to in this division is the **equivalent** of the term "permits" as used in the Federal Water Pollution Control Act, as amended." (emphasis added)); *Tahoe-Sierra Pres. Council v. State Water Res. Control Bd.*, 210 Cal.App.3d 1421, 1430–31 (Cal. Ct. App. 1989).

[243] Statewide Permit, *supra* note 52, at 4, finding 16.

[244] Statewide Permit Fact Sheet, *supra* note 228, at 1, 2.

[245] Statewide Permit Fact Sheet, *supra* note 228, at 3 (referring to *Waterkeeper Alliance v. EPA*, 399 F.3d 486, 504–06 (2nd Cir. 2005)).

[246] *See* Statewide Permit Fact Sheet, *supra* note 228, at 3–4.

[247] Statewide Permit Fact Sheet, *supra* note 228, at 3.

[248] *See generally* State Water Res. Control Bd., Resolution Regarding the Development of a Sanitary Sewer Overflow Reduction Program, Res. No. 2004-0080, Nov. 18, 2004, *available at* http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2004/rs20040080.pdf.

[249] *See* Statewide Permit, *supra* note 52, at 17, Part D.15; 2008 COMPLIANCE REPORT *supra* note 52, at 2.

[250] *SSO Reduction Program Review and Update*, STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/water_issues/programs/sso/review_update.shtml (last updated Mar. 29, 2013).

[251] STATE WATER RES. CONTROL BD., STATEWIDE SANITARY SEWER OVERFLOW REDUCTION PROGRAM COMPLIANCE AND ENFORCEMENT PLAN, at 4 (2010), *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/sso_reduction_plan.pdf.

[252] *See SSO Reduction Program Review and Update*, *supra* note 250.

[253] *See* State Water Res. Control Bd., Monitoring and Reporting Program No. 2014XXXX-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems – Draft, Mar. 22, 2011, at 3, *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/pubhrng040511/review_update/4_draft_ssswdr_mrp.pdf.

[254] *See* STATE WATER RES. CONTROL BD., FACT SHEET: AMENDED MONITORING AND REPORTING PROGRAM FOR THE STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS, at 1 (2013), *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/fs_wqo20130058.pdf.

[255] *See SSO Reduction Program Review and Update*, *supra* note 250.

[256] *See id.*

[257] 2013 MRP, *supra* note 31, at 2, 9.

[258] *See* Statewide Permit, *supra* note 52, at 20.

[259] According to the State Board, it establishes "consistent statewide requirements for notification and reporting of sewage spills and sewer system management" with the aim of reducing the number and volume of SSOs in California. 2013–14 COMPLIANCE REPORT, *supra* note 26, at 2.

[260] Statewide Permit, *supra* note 52, at 1 finding 1 (describing applicability to "public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility").

[261] *See Questionnaire.txt*, *supra* note 32 (listing 1,093 active systems); *see also* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 2 (listing 1,092 active systems).

[262] Statewide Permit, *supra* note 52, at 5, Part A.1.

[263] Statewide Permit, *supra* note 52, at 5, Part A.2.

[264] Statewide Permit, *supra* note 52, at 7, Part C (referring to the definition of "nuisance" in CAL. WATER CODE § 13050(m)). A "nuisance" is anything that meets the following three requirements:

> (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.



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(2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

(3) Occurs during, or as a result of, the treatment or disposal of wastes.

CAL. WATER CODE § 13050(m).

[265] Statewide Permit, *supra* note 52, at 1–2 findings 3–5; *see also id.* at 9–15, Parts D.8–13, D.14.

[266] Statewide Permit, *supra* note 52, at 9, Part D.13.

[267] Statewide Permit, *supra* note 52, at 9, Part D.13, 13.i–xi.

[268] 2013 MRP, *supra* note 31, at 8–9.

[269] Statewide Permit, *supra* note 52, at 9, Part D.11.

[270] Statewide Permit, *supra* note 52, at 9, Part D.11.

[271] Telephone interview with Jim Fischer, Special Investigations Unit, Office of Enforcement, State Water Res. Control Bd. (Jan. 7, 2016).

[272] *See* Statewide Permit, *supra* note 52, at 18, Part G.2; State Water Res. Control Bd., Monitoring and Reporting Program No. 2006-0003-DWQ Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, May 2, 2006, at 1 [hereinafter 2006 MRP], *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/wqo2013006_mrp.pdf; *see also* State Water Res. Control Bd., Order No. WQ-2008-0002-EXEC, Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Feb. 20, 2008, *available at* http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2008/wqo/wqo2008_0002_exec.pdf; 2013 MRP, *supra* note 31, at 1. This has happened twice — in 2008 and 2013. The 2008 amendments altered notification requirements, while the 2013 amendments were more extensive and included a realignment of SSO categories (see **Table 6**) and the addition of water quality monitoring requirements for large SSOs to surface water.

[273] *See* Statewide Permit, *supra* note 52, at 8, Part D.5; *id.* at 18, Part G; 2013 MRP, *supra* note 31, at 1–2, Part A.

[274] 2013 MRP, *supra* note 31, at 1, Part A tbl.1; *id.* at 4, Part C.3.

[275] 2013 MRP, *supra* note 31, at 1, Part A tbl.1 (clarifying that "[a]ny volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond)"); *id.* at 4, Part C.3.i.

[276] 2013 MRP, *supra* note 31, at 1, Part A tbl.1 (emphasis in original); *id.* at 4, Part C.3.ii.

[277] 2013 MRP, *supra* note 31, at 1, Part A tbl.1; *id.* at 4, Part C.3.iii.

[278] Category information from 2013 MRP, *supra* note 31, at 1, Part A tbl.1; *id.* at 4, Part C.3; 2006 MRP, *supra* note 272, at 1, Part A.1–3.

[279] 2013 MRP, *supra* note 31, at 1, Part A tbl.1 (describing "[d]ischarges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee's sanitary sewer system or from other private sewer assets" (emphasis omitted)); *id.* at 6, Part C.6.

[280] 2013 MRP, *supra* note 31, at 1, Part A tbl.1; *id.* at 6, Part C.6. *But see infra* note 302 and accompanying text.

[281] A draft report is due within 3 business days of the time an enrollee becomes aware of a Category 1 or 2 SSO, followed up by a final report within 15 days after the SSO ends. 2013 MRP, *supra* note 31, at 2, Part A tbl.2; *id.* at 4, Part C.4.i. The timeframe for reporting Category 3 spills is longer — enrollees have 30 days after the end of the month in which the SSO occurred to submit a certified report. 2013 MRP, *supra* note 31, at 2, Part A tbl.2; *id.* at 5, Part C.4.ii. An enrollee can amend an SSO report up to 120 days after the SSO ends. *See* 2013 MRP, *supra* note 31, at 5, Part C.4.iv.

[282] 2013 MRP, *supra* note 31, 2, Part A tbl.2; *id.* at 5, Part C.4.iii.

[283] *See* Statewide Permit, *supra* note 52, at 18, Part G.3; ENROLLEE'S GUIDE, *supra* note 54, at 3, 10–18.

[284] *See* Statewide Permit, *supra* note 52, at 17, Part D.15; 2008 COMPLIANCE REPORT *supra* note 52, at 2.

[285] *See* 2013 MRP, *supra* note 31, at 2, Part A tbl.2 ("Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify the California Office of Emergency Services (Cal OES) and obtain a notification control number."); *id.* at 3, Part B.1.

[286] *See* 2013 MRP, *supra* note 31, at 3, Part B.4.

[287] *See* 2013 MRP, *supra* note 31, at 9, Part D.

[288] 2013 MRP, *supra* note 31, at 9, Part D.

[289] 2013 MRP, *supra* note 31, at 2, Part A tbl.2; *id.* at 5–6, Part C.5; *id.* at 9, Part D.5.

[290] Statewide Permit, *supra* note 52, at 2–3 finding 11; *see also id.* at 7, Part D.2.

[291] Statewide Permit, *supra* note 52, at 2–3 finding 11; *see also id.* at 7, Part D.2.

[292] Statewide Permit, *supra* note 52, at 2–3 finding 11; *see also id.* at 7, Part D.2.



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[293] *See* Statewide Permit Fact Sheet, *supra* note 228, at 3–4.

[294] *See, e.g.*, Renewal of Waste Discharge Requirements for Eastern Municipal Water District's Region-Wide Water Recycling System to Temescal Creek, Riverside County, Order No. R8-2009-0014, NPDES No. CA8000188, May 22, 2009, at Part III.C ("Discharge of wastewater at a location or in a manner different from those described in this Order is prohibited."). In general, permit effluent limitations, standards, and prohibitions must be established for each outfall or discharge point. *See* 40 C.F.R. § 122.45(a); Waste Discharge Requirements for East Bay Municipal Utility District Main Wastewater Treatment Plant and Interceptor Conveyance System, Order No. R2-2015-0018, NPDES No. CA0037702, Fact Sheet, May 15, 2015, at F-9, *available at* http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2015/R2-2015-0018.pdf ("Discharge Prohibition III.A (No discharge other than as described in this Order): This prohibition is based on 40 C.F.R. section 122.21(a) and Water Code section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the application and Report of Waste Discharge, and subsequently in this Order, are prohibited.").

[295] *See, e.g.*, R4-2015-0119, Part III.A ("The bypass or overflow of untreated wastewater or wastes to surface waters or surface water drainage courses is prohibited . . . ."); Waste Discharge Requirements for East Bay Municipal Utility District Main Wastewater Treatment Plant and Interceptor Conveyance System, Order No. R2-2015-0018, NPDES No. CA0037702, Part III.F, *available at* http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2015/R2-2015-0018.pdf ("Any sanitary sewer overflow that results in a discharge of untreated or partially-treated wastewater to waters of the United States is prohibited.").

[296] *See* Statewide Permit Fact Sheet, *supra* note 228, at 8–9.

[297] *See* Waste Discharge Requirements for East Bay Municipal Utility District Main Wastewater Treatment Plant and Interceptor Conveyance System, Order No. R2-2015-0018, NPDES No. CA0037702, Part VI.C.4.c, available at http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2015/R2-2015-0018.pdf ("While the Discharger must comply with both the General Collection System WDRs and this Order, the General Collection System WDRs more clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementation of the General Collection System WDRs for proper operation and maintenance and mitigation of sanitary sewer overflows will satisfy the corresponding federal NPDES requirements specified in Attachment D (as supplemented by Attachment G).").

[298] *See* STATE WATER RES. CONTROL BOARD, STATEWIDE SANITARY SEWER OVERFLOW REDUCTION PROGRAM ANNUAL COMPLIANCE REPORT, FISCAL YEAR 2012-2013 7 (2014) [hereinafter 2012–13 COMPLIANCE REPORT], *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/compliance_report_fy1213.pdf.

[299] *See, e.g.*, R4-2015-0119, Waste Discharge Requirements for the City of Los Angeles Terminal Island Water Reclamation Plant, Los Angeles County Discharge to Los Angeles Outer Harbor Via Outfall 001, June 11, 2015, at Part VII.C.6.b (requiring "grab samples from the receiving water (if feasible, accessible, and safe) for all spills, overflows or bypasses of any volume that reach any waters of the state (including surface and ground waters)" and directing that "[t]he Permittee shall analyze the samples for total coliform, fecal coliform, E. coli (if fecal coliform tests positive), enterococcus, and relevant pollutants of concern, upstream and downstream of the point of entry of the spill (if feasible, accessible, and safe) . . . on a daily basis from the time the spill is known until the results of two consecutive sets of bacteriological monitoring indicate the return to the background level or the County Department of Public Health authorizes cessation of monitoring").

[300] *See generally* San Diego Regional Water Quality Control Bd., Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region, Order No. R9-2007-0005 (2007) [hereinafter R9-2007-0005] (building on earlier WDRs, Order No. 96-04, for collection systems in the region); *see also* San Diego Regional Water Quality Control Bd., General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies, Order No. 96-04 (1996).

[301] R9-2007-0005, *supra* note 300, at Part C.B.

[302] *See* R9-2007-0005, *supra* note 300, at Part C.3.

[303] *See* 2012–13 COMPLIANCE REPORT, *supra* note 298, at 7; *see also* San Francisco Regional Water Quality Control Bd., Staff Summary Report: Sanitary Sewer Overflow Reduction Program Status Report, Nov. 12, 2008, at 1, *available at* http://www.swrcb.ca.gov/sanfranciscobay/board_info/agendas/2008/november/sso/final_sso_status_report_ssr.pdf (describing the history of developments in the Region's SSO reduction program); *Available Documents*, STATE WATER RES. CONTROL BD., http://www.swrcb.ca.gov/sanfranciscobay/publications_forms/avail_doc.shtml (last visited Feb. 18, 2016) (see Sanitary Sewer Overflow Reduction Program links (in several places on the webpage) regarding SSO reporting requirements, SSMP requirements and development guide, support for private sewer lateral inspection and rehabilitation, etc.).

[304] *See* 2012–13 COMPLIANCE REPORT, *supra* note 298, at 8.

[305] *See* 33 U.S.C. § 1319(a)(1). This section states:

> **Whenever**, on the basis of any information available to him, **the Administrator finds that any person is in violation of any condition or limitation** which implements section 1311, 1312, 1316, 1317, 1318, 1328, or 1345 of this title in a permit issued by a State under an approved permit program under section 1342 or 1344 of this title, he **shall proceed** under his authority in paragraph (3) of this subsection or he shall notify the person in alleged violation and such State of such finding. If beyond the thirtieth day after the Administrator's notification the State has not commenced appropriate enforcement action, the Administrator



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> **shall issue** an order requiring such person to comply with such condition or limitation or shall bring a civil action in accordance with subsection (b) of this section.

*Id.* (emphasis added); *see also id.* § 1319(a)(2), (3). However, courts have concluded that there is no requirement to make findings in the first instance. *See, e.g.*, *Sierra Club v. Whitman*, 268 F.3d 898, 901–903 (9th Cir. 2001).

[306] *See* 33 U.S.C. § 1319(a) (regarding compliance orders); 33 U.S.C. § 1319(b) (regarding civil actions); 33 U.S.C. § 1319(d) (regarding civil penalties); 33 U.S.C. § 1319(g) (regarding administrative penalties). In addition to civil and administrative remedies, criminal penalties potentially apply for "negligent," "knowing," or "knowing endangerment" violations of effluent limitations and other requirements. *See* 33 U.S.C. § 1319(c).

[307] *See* 2005 Memorandum, *supra* note 160, at 4.

[308] *See* 33 U.S.C. § 1319(d); 40 C.F.R. § 19.1, 2, 4. Pursuant to the Debt Collection Improvement Act of 1996, EPA regulations have adjusted the originally enacted statutory maximum civil and administrative penalties for inflation as follows:

| U.S. Code Citation | Statutory penalties, as enacted | Penalties effective 1/31/1997 to 3/15/2004 | Penalties effective 3/16/2004 to 1/12/2009 | Penalties effective 1/13/2009 to 12/6/2013 | Penalties effective after 12/6/2013 |
|---|---|---|---|---|---|
| 33 U.S.C. § 1319(d) (civil penalties) | $25,000 per day per violation | $27,500 per day per violation | $32,500 per day per violation | $37,500 per day per violation | $37,500 per day per violation |
| 33 U.S.C. § 1319(g)(2)(A) (class I administrative penalties) | • $10,000 per violation<br>• $25,000 total class I penalty | • $11,000 per violation<br>• $27,500 total class I penalty | • $11,000 per violation<br>• $32,500 total class I penalty | • $16,000 per violation<br>• $37,500 total class I penalty | • $16,000 per violation<br>• $37,500 total class I penalty |
| 33 U.S.C. § 1319(g)(2)(B) (class II administrative penalties) | • $10,000 per day per violation<br>• $125,000 total class II penalty | • $11,000 per day per violation<br>• $137,500 total class II penalty | • $11,000 per day per violation<br>• $157,500 total class II penalty | • $16,000 per day per violation<br>• $177,500 total class II penalty | • $16,000 per day per violation<br>• $187,500 total class II penalty |

*See* 40 C.F.R. § 19.4 tbl.1; Civil Monetary Penalty Inflation Adjustment Rule, 78 Fed. Reg. 66,643, 66,643 (Nov. 6, 2013).

[309] 33 U.S.C. § 1319(d). "For purposes of this subsection, a single operational upset which leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation." *Id.*

[310] *See* 33 U.S.C. § 1319(g)(2)(A); table and sources cited *supra* note 308.

[311] 33 U.S.C. § 1319(g)(3).

[312] *See Sierra Club v. Chevron U.S.A., Inc.*, 834 F.2d 1517, 1522 (9th Cir. 1987) ("Although citizen plaintiffs may seek civil penalties only in the context of suits brought to enjoin or otherwise abate ongoing violations, in those suits citizen plaintiffs effectively stand in the shoes of the EPA. The citizen plaintiff's role is to assert permit violations and to request that a fine be imposed; the citizen plaintiff does not personally benefit from bringing the action." (citing *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*, 484 U.S. 49, 58 (1987) (citation omitted)); *Gwaltney*, 484 U.S. at 58–59 (holding that the CWA's enforcement provisions allow "citizens, unlike the Administrator, [to] seek civil penalties only in a suit brought to enjoin or otherwise abate an ongoing violation").

[313] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 6.

[314] Telephone interview with Jim Fischer, Special Investigations Unit, Office of Enforcement, State Water Res. Control Bd. (Jan. 7, 2016); *see also Sanitary Sewer Overflow Reduction Program*, STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/water_issues/programs/sso/ (last updated Oct. 8, 2015) (see "SSO Reduction Program Library" link under "Announcements"); *Sanitary Sewer Overflow (SSO) Reduction Program: Available Documents*, STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/water_issues/programs/sso/sso_reduct_lib.shtml (last updated Feb. 10, 2016) (providing links to guides to the SSO Database and developing and updating sewer system management plans; an example 2-year sewer system management plan audit, an SSO estimation guide, and SSO response field documentation; information about SSO reduction practices and sewer system management program audits; presentations on various SSO topics; and compliance and enforcement information, including the State Board's Water Quality Enforcement Policy, example inspection reports, example notice of violation and 132 67 orders, example ACL cases; and example enforcement referrals).

[315] *See* STATE WATER RES. CONTROL BD., WATER QUALITY ENFORCEMENT POLICY 8 (2009) (explaining that the Regional Boards "have primary responsibility for matters directly affecting the quality of waters within their region" but that the State Board can "take enforcement action in lieu of the Regional Water Board . . . [t]o enforce statewide or multi-regional general permits" and in other circumstances, generally in coordination with Regional Board staff).

[316] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 9.

[317] *See* WATER QUALITY ENFORCEMENT POLICY, *supra* note 315, at 32–33.



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[318] *See id.* at 33–36.

[319] CAL. WATER CODE §§ 13267(b), 13383.

[320] *Id.* § 13304.

[321] *Id.* §§ 13300, 13308 (TSOs, TSOs triggered by violation of CAOs or CDOs).

[322] *Id.* § 13301, 13303. A Board may issue CDOs "after notice and hearing." *Id.* § 13301.

[323] *See id.* § 13323; *see also id.* § 13268 (providing for ACL for failure to furnish reports or falsifying information); *id.* § 13308 (providing for ACL for violating a time schedule order); *id.* § 13350(a), (e) (providing for ACL for violating a CDO, CAO, or WDR); *id.* § 13385 (c), (d) (regarding ACL for an SSO to waters of the United States where "the volume discharged but not cleaned up exceeds 1,000 gallons").

[324] *See* STATE WATER RES. CONTROL BD., POLICY ON SUPPLEMENTAL ENVIRONMENTAL PROJECTS 1 (2009) [hereinafter STATE SEP POLICY], *available at* http://www.swrcb.ca.gov/water_issues/programs/enforcement/docs/rs2009_0013_sep_finalpolicy.pdf (explaining that, "[w]hile many other jurisdictions require that penalties and administrative liabilities be paid into a general fund, administrative civil liabilities and civil penalties assessed under the Water Code are paid into special funds for specific environmental purposes"); *Cleanup and Abatement Account*, STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/water_issues/programs/grants_loans/caa/ (last updated Jan. 15, 2016); *Site Cleanup Program (SCP): Types of Funding Mechanisms for Cleanup Sites*, STATE WATER RES. CONTROL BD., http://www.swrcb.ca.gov/water_issues/programs/scp/index.shtml (last updated Sept. 12, 2014) (noting that "any public agency with the authority to clean up waste or abate the effects of a waste on waters of the state may utilize the account").

[325] *See supra* note 305 and accompanying text.

[326] *National Enforcement Initiatives*, EPA, http://www.epa.gov/enforcement/national-enforcement-initiatives (last updated Feb. 18, 2016) (title capitalization omitted) (title capitalization removed); *see also id.* "How are enforcement initiatives selected?" hyperlink in the "Frequent Questions" box) ("After careful consideration of all comments, the EPA has decided that the current set of FY 2011-2013 National Enforcement Initiatives will continue for FY 2014-2016."); 2005 Memorandum, *supra* note 160, at 2 (explaining that, for 2005 to 2007, "EPA again designated CSOs and SSOs as . . . enforcement priorities"). EPA identifies national enforcement initiatives every three years with stakeholder input. *National Enforcement Initiatives*, *supra*, this note.

[327] *See* 2005 Memorandum, *supra* note 160, at 3.

[328] *See* 2005 Memorandum, *supra* note 160, at 3.

[329] 2005 Memorandum, *supra* note 160, at 4–6 (citing the 1986 Revised Policy Framework for State/EPA Enforcement Agreements).

[330] *See* 2005 Memorandum, *supra* note 160, at 5–6 (explaining that whether a sewer system is considered "large" is determined by "(i) the cost and complexity of the injunctive relief necessary to correct the violations; (ii) the length of the compliance schedule; (iii) the average daily flow of the system; or (iv) the population served by the system").

[331] *See National Enforcement Initiative: Keeping Raw Sewage and Contaminated Stormwater Out of Our Nation's Waters*, EPA, http://www.epa.gov/enforcement/national-enforcement-initiative-keeping-raw-sewage-and-contaminated-stormwater-out-our (last updated Feb. 18, 2016) (click "Chart showing EPA's progress toward addressing large sanitary sewer systems with untreated sewage overflows" hyperlink, explaining that the "initiative focuses on large municipalities whose sanitary sewer systems produce >10 million gallons per day (mgd) of wastewater").

[332] *See* EPA, CLEAN WATER ACT ACTION PLAN 6 (2009), *available at* http://www.epa.gov/sites/production/files/documents/actionplan101409.pdf ("The program's existing focus on the biggest facilities and the associated policies for designating and addressing violations do not consider the full range of the NPDES regulated universe and may not always allow for responses to be tailored to the type of violation and its impact. New approaches, policies and procedures to focus enforcement on the most serious violations adversely affecting water quality are long overdue.").

[333] *See id.* at 7.

[334] *See* WATER QUALITY ENFORCEMENT POLICY, *supra* note 315, 4–7.

[335] *Id.* at 4.

[336] *Id.* at 5.

[337] *Id.* at 6.

[338] *Id.* ("To the greatest extent possible, Regional Water Board[s] shall target entities with class I priority violations for formal enforcement action.").

[339] *Id.* at 6–7. The criteria, many of which overlap, are:

1. Class of the entity's violations;
2. History of the entity . . . ;
3. Evidence of, or threat of, pollution or nuisance caused by violations;
4. The magnitude or impacts of the violations;



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5. Case-by-case factors that may mitigate a violation;
6. Impact or threat to high priority watersheds or water bodies . . . ;
7. Potential to abate effects of the violations;
8. Strength of evidence in the record to support the enforcement action; and
9. Availability of resources for enforcement.

*Id.* at 7.

[340] *See* **Box 4** in **Chapter 8**.

[341] *See* WATER QUALITY ENFORCEMENT POLICY, *supra* note 315, at 10 (requiring ACLs to be assessed fairly and consistently, to "[f]ully eliminate any economic advantage [or unfair competitive advantage] obtained from noncompliance," to "[b]ear a reasonable relationship to the gravity of the violation and the harm to beneficial uses or regulatory program resulting from the violation," and to deter both "the specific person(s) identified in the ACL" and "similarly situated person(s) in the regulated community from committing the same or similar violations").

[342] *See id.* at 4–7, 9–22. The methodology includes 10 steps, progressing from calculating each violation's potential for harm, determining per gallon and/or per day assessments, adjusting the initial amounts based on the violator's conduct (degree of culpability, voluntary cleanup and cooperation, and history of violations), adding the adjusted amount to derive the total base liability amount, adjusting the amount downward based on ability to pay and ability to continue in business, considering other factors that would justify increasing or decreasing the amount (including staff costs), ensuring that the amount exceeds the economic benefit of the violations, adjusting the amount to ensure it falls within statutorily allowable limits, and, finally, arriving at the final liability amount. *Id.* at 10–22.

[343] Statewide Permit, *supra* note 52, at 2–3 (finding 11); *see also id.* at 8, Part D.6.

[344] *Id.* at 9, Part D.6.

[345] *See* WATER QUALITY ENFORCEMENT POLICY, *supra* note 315, at 10.

[346] *See* 33 U.S.C. § 1319(d) ("In determining the amount of a civil penalty the court shall consider the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good faith efforts to comply with the applicable requirements, the economic impact of the penalty on the violator, and such other matters as justice may require."); 33 U.S.C. § 1319(g)(3) ("In determining the amount of any penalty assessed under this subsection, the Administrator or the Secretary, as the case may be, shall take into account the nature, circumstances, extent and gravity of the violation, or violations, and, with respect to the violator, ability to pay, any prior history of such violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require.").

[347] *See* WATER QUALITY ENFORCEMENT POLICY, *supra* note 315, at 36.

[348] *See id.* at 22, 36. There is a 30-day public comment period for the settlement or imposition of an ACL or the settlement of judicial civil liabilities. *See id.* at 36.

[349] STATE SEP POLICY, *supra* note 324, at 1.

[350] *Id.* at 1–2.

[351] *Id.* at 2.

[352] *Id.* at 3, 4. The order that includes the SEP must include a scope of work that includes a budget, a time schedule for implementation including one or more milestones. *Id.* at 5.

[353] *Id.* at 5 ("A nexus exists if the project remediates or reduces the probable overall environmental or public health impacts or risks to which the violation at issue contributes, or if the project is designed to reduce the likelihood that similar violations will occur in the future.").

[354] *Id.* at 4.

[355] *Id.* at 5.

[356] *Id.* at 7.

[357] WATER QUALITY ENFORCEMENT POLICY, *supra* note 315, at 30.

[358] *Id.* at 30.

[359] *Id.* at 30.

[360] *See generally* EPA, SUPPLEMENTAL ENVIRONMENTAL PROJECTS POLICY: 2015 UPDATE 1, 6 (2015) [hereinafter EPA SEP POLICY], *available at* http://www.epa.gov/sites/production/files/201504/documents/sepupdatedpolicy15.pdf.

[361] *See* WATER QUALITY ENFORCEMENT POLICY, *supra* note 315, at 2; *see also Environmental Complaint Form*, CALEPA, http://www.dtsc.ca.gov/database/CalEPA_Complaint/index.cfm (last updated June 2, 2014) (accepting complaints of suspected "illegal or unauthorized conduct impacting, or threatening to impact, California's environment or the public health").

[362] CAL. WATER CODE § 13320(a) (emphasis added) ("Within 30 days of any action or failure to act by a regional board under . . . Article 4 (commencing with Section 13260) of Chapter 4 [defining requirements related to Waste Discharge Requirements] . . . , an



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aggrieved person may petition the state board to review that action or failure to act. In case of a failure to act, the 30-day period shall commence upon the refusal of the regional board to act, or 60 days after request has been made to the regional board to act.")

[363] *See id.* § 13330(a) (allowing an aggrieved party to file a petition for writ of mandate for review with the superior court and describing when a petition for reconsideration must first be filed to exhaust the party's administrative remedies).

[364] *See, e.g.*, David G. Samuels, *Precluding Preclusion: A Proposal for a New Way of Addressing Citizen Suit Overfiling*, 26 TULANE ENVTL. L. J. 259, 264–66 (2013); Memorandum on Procedures for Agency Responses to Clean Water Act Citizen Enforcement Suit Activity from Glenn L. Unterberger, Associate Enforcement Counsel for Water, EPA, to Regional Counsels et al., at 2 (June 15, 1988) [hereinafter Procedures for Agency Responses], *available at* http://www2.epa.gov/sites/production/files/documents/agcyrespcwacitsuit-mem.pdf.

[365] *See, e.g.*, *Nw. Envtl. Advocates v. City of Portland*, 56 F.3d 979, 989 (9th Cir. 1995) ("Citizen suits to enforce water quality standards effectuate complementary provisions of the CWA and the underlying purpose of the statute as a whole. Citizen suit enforcement of [both qualitative and quantitative] water quality standards is necessary to the effective enforcement of effluent limitations . . .").

[366] *See* 33 U.S.C. §§ 1365(a)(1), 1362(5).

[367] *See* 33 U.S.C. § 1365(a), (a)(1) (providing that "any citizen may commence a civil action on his own behalf . . . against any person . . . who is alleged to be in violation of (A) an effluent standard or limitation under this chapter or (B) an order issued by the Administrator or a State with respect to such a standard or limitation").

[368] 33 U.S.C. § 1365(g).

[369] *See* 33 U.S.C. § 1365(a)(1) (allowing suit "against any person . . ."). "Any person" can be "an individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body." 33 U.S.C. § 1362(5).

[370] *See* 33 U.S.C. § 1365(f)(6) and CWA sections referenced therein (defining violation of an "effluent standard or limitation" to include, among other things, (1) the discharge of any pollutant not in compliance with effluent limitations, national performance standards, toxic and pretreatment effluent standards, aquaculture permits, NPDES permits, and permits for dredged or fill material]; (2) violation of a technology-based or water-quality based effluent limitation; (3) violation of "a permit or condition thereof issued under" the NPDES program"). The U.S. Supreme Court has confirmed that federal courts have subject-matter jurisdiction over citizen suits that allege violations of state-issued NPDES permits and permit conditions that "arise from . . . stricter standards established by the State." *Parker v. Scrap Metal Processors, Inc.*, 386 F.3d 993, 1006 (11th Cir. 2004) (citing *EPA v. California*, 426 U.S. 200, 224 (1976)); *see also Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*, 484 U.S. 49, 52–54 (1987) (involving violations of an NPDES permit issued by the state of Virginia); *Nw. Envtl. Advocates v. City of Portland*, 56 F.3d at 985–90 (discussing congressional intent and case law supporting broad citizen enforcement authorization for NPDES permit violations and stating that "[t]he plain language of CWA § 505 authorizes citizens to enforce all permit conditions").

[371] *See S.F. Baykeeper v. W. Bay Sanitary Dist.*, 791 F. Supp. 2d 719, 754 (N.D. Cal. 2011) (citing *Comm. to Save Mokelumne River v. E. Bay Mun. Util. Dist.*, 13 F.3d 305, 308 (9th Cir. 1993).

[372] *See* Coplan, *supra* note 10, at 71 ("Courts have held that discharge monitoring reports, filed by the NPDES permittee, admitting violations are admissible as proof of violation of the CWA." (citing cases from the Third and Fourth Circuits)); *see also Inland Empire Waterkeeper v. Uniweb, Inc.*, 2008 WL 6098645, *9 (C.D. Cal. 2008) ("A defendant may not impeach its own publicly filed reports which are submitted under penalty of perjury." (internal quotation marks omitted)); *S.F. Baykeeper*, 791 F. Supp. at 758 (finding that "no genuine dispute exist[ed] as to SSOs" listed as reaching specific waters of the United States in the defendant's reports).

[373] *Gwaltney*, 484 U.S. at 60.

[374] *See id.* at 60; *Cmty. Ass'n for Restoration of the Env'n. Henry Bosma Dairy*, 305 F.3d 943, 951 (9th Cir. 2002) ("The point [of the citizen suit provision] is to trigger agency enforcement and avoid a lawsuit. Congress did not intend to unduly burden citizens by requiring them to basically carry out the job of the agency.").

[375] *See* 33 U.S.C. §1365(b)(1)(A). Proper notice has certain service and substantive requirements defined in EPA regulations. *See* 40 C.F.R. §§ 135.2 (service of notice), 135.3 (contents of notice). It must be mailed by certified mail or served personally, and include information like the name of the alleged violator, and the date, time, location, and type of the alleged violation. 40 C.F.R. §§ 135.2, 135.3(a); 33 U.S.C. § 1365(b). Specifically, the regulation at 40 C.F.R. § 135.3(a) establishes: "Notice regarding an alleged violation of an effluent standard or limitation or of an order with respect thereto, shall include sufficient information to permit the recipient to identify the specific standard, limitation, or order alleged to have been violated, the activity alleged to constitute a violation, the person or persons responsible for the alleged violation, the location of the alleged violation, the date or dates of such violation, and the full name, address, and telephone number of the person giving notice." The Ninth Circuit has held that "[t]he key language in the notice regulation is the phrase 'sufficient information to permit the recipient to identify' the alleged violations," so that, "as long as a notice letter is reasonably specific as to the nature and time of the alleged violations, the plaintiff has fulfilled the notice requirement." *S.F. Baykeeper v. Tosco Corp.*, 309 F.3d 1153, 1155 (9th Cir. 2002); *see also Henry Bosma Dairy*, 305 F.3d at 951 (notice must be specific enough "to give the accused company the opportunity to correct the problem.").

[376] *Henry Bosma Dairy*, 305 F.3d at 952 (quoting *Atlantic States Legal Found., Inc. v. Strobl Die Casting Co.*, 116 F.3d 814, 819–20 (7th Cir. 1997).

[377] *S.F. Baykeeper v. W. Bay Sanitary Dist.*, 791 F. Supp. 2d 719, 752 (N.D. Cal. 2011) (quoting *Hallstrom v. Tillamook Cnty.*, 493 U.S. 20, 33 (1989)).



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[378] *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc.* 528 U.S. 167, 182 (2000) ("[E]nvironmental plaintiffs adequately allege injury in fact when they aver that they use the affected area and are persons for whom the aesthetic and recreational values of the area will be lessened by the challenged activity." (internal quotation marks and citations omitted)).

[379] *Friends of the Earth*, 528 U.S. at 180-81 (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992)). "The Ninth Circuit has held that the 'CWA's citizen suit provision extends standing to the outer boundaries set by the "case or controversy" requirement of the Constitution.'" *S.F. Baykeeper*, 791 F. Supp. at 744 (citing *Ecological Rights Found. v. Pac. Lumber Co.*, 230 F.3d 1141, 1147 (9th Cir. 2000)).

[380] *Ecological Rights Found. v. Pacific Lumber Co.*, 230 F.3d 1141, 1147, 1149 (9th Cir. 2000) (noting also that "[f]actors of residential contiguity and frequency of use may certainly be relevant to that determination, but are not to be evaluated in a one-size-fits-all, mechanistic manner"). As the Supreme Court has emphasized, "the relevant showing…is not injury to the environment but injury to the plaintiff." *Friends of the Earth*, 528 U.S. at 181 (explaining that "to insist upon the former rather than the latter as part of the standing inquiry is to raise the standing hurdle higher than the necessary showing for success on the merits in an action alleging noncompliance with an NPDES permit").

[381] Organizations can use the CWA's citizen suit provision if individual members "would have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit." *Ecological Rights Found.*, 230 F.3d at 1147 (citing *Hunt v. Wash. State Apple Advertising Comm'n*, 432 U.S. 333, 343 (1977)); *see also* 33 U.S.C. § 1365(g) (defining "citizen," as "a person or persons having an interest which is or may be adversely affected").

[382] *S.F. Baykeeper*, 791 F. Supp. 2d at 749 ("A plaintiff who seeks injunctive relief satisfies the requirement of redressability by alleging a continuing violation . . . of an applicable statute or standard." (quoting *Natural Res. Def. Council v. Sw. Marine, Inc.*, 236 F.3d 985, 995 (9th Cir. 2000)); *see also* 33 U.S.C. § 1365(a)(1) (requiring that the defendant is "*alleged to be in violation* of (A) an effluent standard or limitation . . . or (B) an order issued by the Administrator or a State with respect to such a standard or limitation" (emphasis added)).

[383] *See Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*, 484 U.S. 49, 59 (1987) (explaining that "the interest of the citizen-plaintiff is primarily 'forward-looking' if 'the harm sought to be addressed by the citizen suit lies in the present or the future, not in the past').

[384] *Gwaltney*, 484 U.S. at 63; *see also Natural Res. Def. Council*, 236 F.3d at 998 ("The CWA 'does not permit citizen suits for wholly past violations'; rather, the statute 'confers jurisdiction over citizen suits when the citizen-plaintiffs make a good-faith allegation of continuous or intermittent violation.'"). The Supreme Court has emphasized that, in "conscious sensitivity to the practical difficulties of detecting and proving chronic episodic violations of environmental standards," the CWA's citizen suit provision "does not require that a defendant 'be in violation' of the Act at the commencement of suit; rather, the statute requires that a defendant be 'alleged to be in violation.'" *Gwaltney, 484 U.S.* at 64-65.

[385] *Gwaltney*, 484 U.S. at 65.

[386] *Id.* (citing FED. R. CIV. P. 11). In order to establish jurisdiction in federal court under Section 505 of the CWA, "Congress intended a good faith allegation to suffice." *Gwaltney, 484 U.S.* at 64-65.

[387] *S.F. Baykeeper*, 791 F. Supp. 2d at 749 (quoting *Natural Res. Def. Council*, 236 F.3d at 995).

[388] *Id.*

[389] *Gwaltney*, 484 U.S. at 60; *see also N. & S. Rivers Watershed Ass'n v. Scituate*, 949 F.2d 552, 555 (1st Cir. 1991) (stating that citizen suits are intended to let private parties "assist in enforcement efforts where Federal and State authorities appear unwilling to act").

[390] 33 U.S.C. § 1365(b)(1)(B); *id.* § 1319(g)(6)(A), (B)(i).

[391] *See, e.g.*, Thomas R. Head, III, & Jeffrey H. Wood, *No Comparison: Barring Citizen Suits in Dual Enforcement Actions*, 18 NATURAL RES. & ENV'T 57, 57 (2004); *Gwaltney*, 484 U.S. at 60; *cf.* Procedures for Agency Responses, *supra* note 364, at 2.

[392] *See, e.g.*, Jonathan S. Campbell, *Has the Citizen Suit Provision of the Clean Water Act Exceeded its Supplemental Birth?*, 24 WM. & MARY ENVTL. L. & POL'Y REV. 305 (2000).

[393] 33 U.S.C. § 1365(b)(1)(B); *see also Cal. Sportfishing Prot. Alliance v. Chico Scrap Metal, Inc.*, 728 F.3d 868, 873, 874 (9th Cir. 2013) (holding that the statutory bar "applies only if the government's action seeks to" "require compliance with the standard, limitation, or order" that is the subject of the citizen suit").

[394] *See* 33 U.S.C. § 1365(b)(1)(B); FED. R. CIV. P. 24(a).

[395] *See* 33 U.S.C. § 1319(g)(6)(A)(i)–(ii). A final administrative order regarding the violation at issue constitutes diligent prosecution when the violator has paid an administrative penalty assessed under the CWA or a comparable state law. *See id.* § 1319(g)(6)(A)(iii). If the citizen files suit before the 120th day after providing notice, an action for administrative penalties will serve as diligent prosecution only if that action began prior to the date of notice; however, if the citizen files suit later (120 or more days after providing notice), the administrative penalty action need only begin before the citizen files the complaint. *See id.* § 1319(g)(6)(A)(ii), (B)(ii); *see also Lockett v. EPA*, 319 F.3d 678, 687–88 (5th Cir. 2003) (concluding that this exception to the diligent prosecution bar was not satisfied where the plaintiffs filed their lawsuit within 120 days of their second notice, which corrected a minor defect, but not the first notice, and the state sent a compliance order, initiating an administrative penalty action, in the time between the first and second notice).

[396] *See* Samuels, *supra* note 364, at 268, 268 n.61 (calling "[w]hether citizens may maintain a suit for injunctive relief . . . an open question"). The language of the statute could be interpreted either way. *See* 33 U.S.C. § 1319(g)(6). Legislative history and EPA's



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own policy statements seem to suggest the latter. *See* Samuels, *supra* note 364, at 268 n.61 (stating that, "[f]or its part, the legislative history of the administrative penalty section clearly states that injunctive relief remains a viable request"; and quoting H.R. REP. No. 99-1004, at 133 (1986) (Conf. Rep.) as stating "[T]his limitation would not apply to . . . an action seeking relief other than civil penalties (e.g., an injunction or declaratory judgment) . . . ."); Procedures for Agency Responses, *supra* note 364, at 3 ("New CWA § 309(g)(6)(A) and (B) provide that citizens may not bring civil penalty actions under Section 505 for the same violations for which (1) the Secretary (Army Corps of Engineers) or the Administrator has commenced and is diligently prosecuting an administrative action under Section 309(g); (2) the State has commenced and is diligently prosecuting an action under a comparable state law; or (3) the Secretary, Administrator or State has issued a final order and the violator has paid a penalty under § 309(g) or comparable state law . . . ."). While the Tenth Circuit has held that a state administrative penalty action "bars only civil penalty claims and not claims requesting declaratory or injunctive relief," *Paper, Allied-Indus., Chem. & Energy Workers Int'l Union v. Cont'l Carbon Co.*, 428 F.3d 1285, 1300 (10th Cir. 2005), other Circuits have treated it as a complete bar to citizen action, *see* Lisa Donovan, *Power to the Peoples: The Tenth Circuit and the Right of Citizens to Sue for Equitable Relief Under Section 309(G)(6)(A) of the Clean Water Act*, 34 B.C. ENVTL. AFF. L. REV. 143, 144, 144 n.4 (2007) (citing decisions in the First and Eighth Circuits).

397 *Cf. California Sportfishing Prot. Alliance*, 728 F.3d at 877–78 ("Because California has commenced no administrative penalty proceeding that is comparable to a proceeding by the EPA under § 1319(g), the statutory bar of § 1319(g)(6)(A)(ii) does not apply to Plaintiff's claims."); *Knee Deep Cattle Co. v. Bindana Inv. Co.*, 94 F.3d 514, 516–17 (9th Cir. 1996) (holding that a settlement and final order that assessed no penalties did not bar citizen suit); *Citizens for a Better Env't-Cal. v. Union Oil Co. of Cal.*, 83 F.3d 1111, 1115–16 (9th Cir. 1996), *as amended* (July 16, 1996) (holding that payments made pursuant to "a settlement made to avoid an enforcement action by the Regional Board" did not bar citizen suit); *Wash. Pub. Interest Research Grp. v. Pendleton Woolen Mills*, 11 F.3d 883, 886–87 (9th Cir. 1993) (holding that EPA compliance order did not bar citizen suit and specifically stating, "[b]ecause we hold that the compliance order pursued by the EPA does not bring into play the citizen suit preclusion provision of section 1319(g)(6), we need not reach the question of whether a citizen suit seeking injunctive relief would ever be barred by section 1319(g)").

398 *See N. Cal. River Watch v. Sonoma Cnty. Water Agency*, 1998 WL 886645 *1–2, 1 n.1, Dec. 16, 1998. In that case, the court stated:

> On April 20, 1998, this Court dismissed, without prejudice, the portion of plaintiff's complaint which sought civil penalties against the defendants, on the grounds that it was barred by the provision in the CWA prohibiting such claims regarding any violation for which "a State has commenced and is diligently prosecuting an action under a State law comparable to this subsection." 33 U.S.C. § 1319(g)(6)(A)(ii). In that ruling, the Court held that because RWQCB had prosecuted actions against defendants and fined them for the violations complained of by plaintiff, section 1319(g)(6)(A)(ii) of the CWA did not allow plaintiff to pursue its claim for civil penalties. . . . The Court also found that this provision of the CWA did not bar plaintiff's request for injunctive and declaratory relief.

*Id.*

399 Procedures for Agency Responses, *supra* note 364, at 2.

400 *Id.* at 2–3.

401 *See* 33 U.S.C. § 1365(b)(1)(A).

402 *See id.* § 1365(c)(3); 40 C.F.R. § 135.4.

403 *See* 33 U.S.C. § 1365(c)(2); FED. R. CIV. P. 24(a).

404 *See* 33 U.S.C. § 1365(c)(3); 40 C.F.R. § 135.5.

405 *See* 33 U.S.C. § 1365(c)(3); 40 C.F.R. § 135.5(b).

406 Procedures for Agency Responses, *supra* note 364, at 6.

407 For example, the United States views a document stipulating to dismissal of a case or any part thereof would be within the scope of this language. Such documents and any associated instruments (even if not submitted to the Court) must be submitted to the United States for review, notwithstanding any provisions purporting to maintain the confidentiality of such materials." Letter from Judy Harvey, Attorney, U.S. DOJ, to Clerk's Office, U.S. District Court for the Northern District of California (May 6, 2013) (regarding *N. Cal. River Watch v. City of Santa Clara*, Case No. 3:12-cv-5974).

408 *See* Letter from Judy Harvey, Attorney, U.S. Department of Justice, to Clerk of Court, U.S. District Court for the Northern District of California (Feb. 27, 2012) (regarding *San Francisco Baykeeper v. West Bay Sanitary District*, Case No. 09-cv-05676) ("In its review, the United States seeks to ensure that the proposed consent judgment complies with the requirements of the relevant statute and is consistent with its purposes . . . . For example, if the defendant has been out of compliance with statutory or permit requirements, the proposed consent judgment should require the defendant to come into prompt compliance and should include a civil penalty, enforceable remedies, injunctive relief, and/or a supplemental environmental project (SEP) payment sufficient to deter future violations, or combinations of the above." (citing *Local 93, Int'l Ass'n of Firefighters v. City of Cleveland*, 478 U.S. 501, 525–26 (1986))). The U.S. DOJ maintains that "[a] settlement that does not undergo this federal review process is at risk of being void," however, with or without review, the settlement is not binding on government agencies that are not also parties to it. Letter from Scott Bauer, Attorney, U.S. DOJ, to Clerk of Court, U.S. District Court for the Northern District of California (Sept. 4, 2009) (regarding *S.F. Baykeeper v. Town of Hillsborough*, Case No. 08-cv-03760).

409 In general, a court "should enter a proposed consent judgment if the court decides that it is fair, reasonable and equitable and does not violate the law or public policy." *See Citizens for a Better Env't v. Gorsuch*, 718 F.2d 1117, 1125–26 (D.C. Cir. 1983), *cert. denied*, 467



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U.S. 1219 (1984). "As long as the consent decree comes within the general scope of the case made by the pleadings, furthers the objectives upon which the law is based, and does not violate the statute upon which the complaint was based, the parties' agreement may be entered by the court." *Sierra Club v. Elec. Controls Design*, 909 F.2d 1350, 1355 (9th Cir. 1990) (quoting *Local No. 93*, 478 U.S. at 525–26) (internal quotation and omission marks removed).

[410] *See* Anthony DiSarro, *Six Decrees of Separation: Settlement Agreements and Consent Orders in Federal Civil Litigation*, 60 AM. U. L. REV. 275, 277 (2010) (citing *FTC v. Enforma Natural Prods., Inc.*, 362 F.3d 1204, 1218 (9th Cir. 2004)); Shriver Center, Federal Practice Manual for Legal Aid Attorneys: Negotiated Settlements and Injunctive Relief 9.2.B.1 (updated 2013), *available at* http://federalpracticemanual.org/node/52. The term "consent judgment" is more commonly used when the settlement involves only the payment of money. *See* DiSarro, *supra* this note, at 277 n.2 (citing *Limbright v. Hofmeister*, 566 F.3d 672, 673 (6th Cir. 2009)).

[411] *See United States v. Armour & Co.*, 402 U.S. 673, 681–83 (1971).

[412] *See* DiSarro, *supra* note 410, at 277 n.2 (citing *Local No. 93*, 478 U.S. at 518).

[413] *See Richard S. v. Dep't of Developmental Servs. of State of Cal.*, 317 F.3d 1080, 1086 (9th Cir. 2003) ("a plaintiff 'prevails' when he or she enters into a legally enforceable settlement agreement against the defendant") (quoting *Barrios v. Cal. Interscholastic Fed'n*, 277 F.3d 1128, 1134 (9th Cir. 2002), *cert. denied*, 537 U.S. 820 (2002)). Other Circuits have somewhat different interpretations.

[414] *See United States v. Armour & Co.*, 402 U.S. at 681–83.

[415] *See Janus Films, Inc. v. Miller*, 801 F.2d 578, 585 (2d Cir. 1986).

[416] Telephone interview with Laurie Kermish, CWA Section Chief, Office of Regional Counsel, EPA Region 9 (DATE).

[417] *See* 33 U.S.C. § 1365(a) ("The district courts shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce such an effluent standard or limitation, or such an order . . . ."). 

[418] *See* 28 U.S.C. § 2201(a) ("In a case of actual controversy within its jurisdiction, . . . any court of the United States . . . may declare the rights and other legal relations of any interested party seeking such declaration, whether or not further relief is or could be sought.").

[419] *See e.g.*, *Natural Res. Def. Council v. Sw. Marine*, 236 F.3d 985, 1000 (9th Cir. 2000) ("[A] district court's equitable powers under the CWA are limited to enforcing standards, limitations, and orders that have been violated. . . . The authority to "enforce" an existing requirement is more than the authority to declare that the requirement exists and repeat that it must be followed. So long as the district court's equitable measures are reasonably calculated to "remedy an established wrong," they are not an abuse of discretion.").

[420] *See Sierra Club v. Chevron U.S.A., Inc.*, 834 F.2d 1517, 1522 (9th Cir. 1987) ("Although citizen plaintiffs may seek civil penalties only in the context of suits brought to enjoin or otherwise abate ongoing violations, in those suits citizen plaintiffs effectively stand in the shoes of the EPA. The citizen plaintiff's role is to assert permit violations and to request that a fine be imposed; the citizen plaintiff does not personally benefit from bringing the action." (citing *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*, 484 U.S. 49, 58 (1987)));; *Gwaltney*, 484 U.S. at 58–59 (holding that the CWA's enforcement provisions allow "citizens, unlike the Administrator, [to] seek civil penalties only in a suit brought to enjoin or otherwise abate an ongoing violation"). *See supra*, notes 308–312 and accompanying text, for more on civil penalties. Although the CWA's citizen suit provision does not include one, courts have applied a 5-year statute of limitations for CWA civil penalty claims. *See Sierra Club*, 834 F.2d at 1521–22 (identifying 28 U.S.C. § 2462, as the relevant federal statute of limitations for actions for civil penalties); 28 U.S.C. § 2462 (requiring the commencement of action "within five years from the date when the claim first accrued"). Therefore, most citizen complaints address all violations that have occurred within the 5 years prior to the date of the NOI. Sometimes, citizens send a supplemental NOI and amend their complaints to include additional violations that have accrued since the date of the initial NOI.

[421] *See Friends of the Earth, Inc., v. Laidlaw Envtl. Servs.*, 528 U.S. 167, 185 (2000) ("Congress has found that civil penalties in Clean Water Act cases do more than promote immediate compliance by limiting the defendant's economic incentive to delay its attainment of permit limits; they also deter future violations.").

[422] OFFICE OF ENFORCEMENT, STATE WATER RES. CONTROL BD., CITIZEN SUIT ENFORCEMENT UNDER THE FEDERAL CLEAN WATER ACT: A SNAPSHOT OF THE CALIFORNIA EXPERIENCE BASED ON NOTICES OF INTENT TO SUE, MARCH 2009 THROUGH JUNE 2010 at 5 (2011) [hereinafter SNAPSHOT], *available at* http://www.waterboards.ca.gov/water_issues/programs/enforcement/docs/citizen_suits/citizen_suit_report.pdf.

[423] Although the only type of non-consensual monetary relief a court can order in a citizen suit is a civil penalty, a defendant can agree to make payments to an entity other than the U.S. Treasury as part of a settlement agreement. *See Sierra Club v. Elec. Controls Design*, 909 F.2d 1350, 1354–55 (9th Cir. 1990).

[424] *Id.* at 1356.

[425] *Cf.* EPA SEP POLICY, *supra* note 360, at 1, 17 ("General public educational or public environmental awareness projects" are not acceptable as SEPs.).

[426] EPA's SEP policy "applies to all civil judicial and administrative enforcement actions taken under the authority of the environmental statutes and regulations that the EPA administers," and "may be used by the EPA and the Department of Justice (DOJ) in reviewing proposed SEPs in settlement of citizen suits." *Id.* at 2.

[427] In the latter case, the U.S. DOJ requests that the third party "provide a letter to the Court and to the United States representing that it is a 501(c)(3) tax-exempt entity and that it (1) has read the proposed consent judgment; (2) will spend any monies it receives



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under the proposed judgment for the purposes specified in the judgment; (3) will not use any money received under the proposed consent judgment for political lobbying activities; and (4) will submit to the Court, the United States, and the parties a letter describing how the SEP funds were spent." Letter from Scott Bauer, *supra* note 408.

[428] 33 U.S.C. § 1365(d). "When passing § 505(d), Congress found that '[t]he Courts should recognize that in bringing legitimate actions under this section citizens would be performing a public service and in such instances, the court should award costs of litigation to such party.'" *S.F. Baykeeper v. W. Bay Sanitary Dist.*, No. C-09-5676 EMC, 2011 WL 6012936, at *1 (N.D. Cal. Dec. 1, 2011) (citing S. REP. NO. 92-414, at 79 (1971), FWPC72 Leg. Hist. 19, at *3747 (LEXIS)). These provisions provide explicit exceptions to the standard "American rule," which makes parties to litigation responsible for their own litigation cost. *See Alyeska Pipeline Serv. Co. v. Wilderness Soc'y*, 421 U.S. 240, 247 (1975) ("In the United States, the prevailing litigant is ordinarily not entitled to collect a reasonable attorneys' fee from the loser.").

[429] *Saint John's Organic Farm v. Gem Cnty. Mosquito Abatement Dist.*, 574 F.3d 1054, 1058 (9th Cir. 2009) (quoting *Buckhannon Bd. & Care Home, Inc. v. W. Va. Dep't of Health & Human Res.*, 532 U.S. 598, 604 (2001)) (internal quotation maks and alteration signals omitted).

[430] "Binding settlement agreements over which the district court retains jurisdiction to enforce are judicially enforceable." *Saint John's Organic Farm*, 574 F.3d at 1059 (citing *Richard S. v. Dep't of Developmental Servs. of State of California*, 317 F.3d 1080, 1088 (9th Cir. 2003)).

[431] *Saint John's Organic Farm*, 574 F.3d at 1059–60; *see also Buckhannon Bd. & Care Home*, 532 U.S. at 603–05 ("[E]nforceable judgments on the merits and court-ordered consent decrees create the 'material alteration of the legal relationship of the parties' necessary to permit an award of attorney's fees."); *Kokkonen v. Guardian Life Ins. Co. of Am.*, 511 U.S. 375, 380–81 (1994) ("If the parties' obligation to comply with the terms of the settlement agreement had been made part of the order of dismissal —either by separate provision (such as a provision 'retaining jurisdiction' over the settlement agreement) or by incorporating the terms of the settlement agreement in the order[—] . . . a breach of the agreement would be a violation of the order, and ancillary jurisdiction to enforce the agreement would therefore exist.").

[432] *Saint John's Organic Farm*, 574 F.3d at 1061–62 (describing the court's adoption of "the 'special circumstances' standard first elaborated in [a Civil Rights Act case] 'Newman v. Piggie Park Enterprises, Inc.', 390 U.S. 400, 88 S.Ct. 964, 19 L.Ed.2d 1263 (1968), [a]s the proper standard for determining whether an award of attorney's fees to a prevailing plaintiff is 'appropriate' under § 1365(d)"); *see also Resurrection Bay Conservation Alliance v. City of Seward, Alaska*, 640 F.3d 1087, 1091 (9th Cir. 2011); *S.F. Baykeeper v. W. Bay Sanitary Dist.*, No. C-09-5676 EMC, 2011 WL 6012936, at *1 (N.D. Cal. Dec. 1, 2011).

[433] The Ninth Circuit described the circuit split as follows:

> Our sister circuits have not agreed on a uniform standard for determining appropriateness for a prevailing plaintiff under § 1365(d). The First Circuit has stated that district courts have "wide discretion" to determine the appropriateness of fees under the CWA, but it has not articulated a standard to guide the exercise of this discretion. The Third Circuit has effectively read "appropriate" out of the statute, holding that the CWA "places no restriction on the award other than that the party entitled to the award be 'prevailing or substantially prevailing.'" The Fourth and Fifth Circuits have held that fees are appropriate whenever a prevailing party's suit has served the public interest or advanced the goals of the statute. The Eleventh Circuit has held that "good cause" is needed to deny attorney's fees to a prevailing party.

*Saint John's Organic Farm*, 574 F.3d at 1061–62 (citations omitted).

[434] Mary Cile Glover-Rogers, *Who's Footing the Bill for the Attorneys' Fees?: An Examination of the Policy Underlying the Clean Water Act's Citizen Suit Provision - Saint John's Organic Farm v. Gem County Mosquito Abatement District*, 18 MO. ENVTL. L. & POL'Y REV. 64, 75 (2010).

[435] *Christianburg Garment Co. v. EEOC*, 434 U.S. 412, 422 (1978); *Marbled Murrelet v. Babbitt*, 182 F.3d 1091, 1096 (9th Cir. 1999); *see also Saint John's Organic Farm*, 574 F.3d at 1063 n.1 ("The question of when it is 'appropriate' to award fees under the CWA to a prevailing defendant is not before us today, but we see no reason why the standard from *Christiansburg* applied to the ESA in *Marbled Murrelet*, would not apply equally to the CWA as well.").

[436] *Fischer v. SJB-P.D. Inc.*, 214 F.3d 1115, 1119 (9th Cir. 2000); *see also* Michel Lee, *Attorneys' Fees In Environmental Citizen Suits and the Economically Benefited Plaintiff: When Are Attorneys' Fees and Costs Appropriate?*, 26 PACE ENVTL. L. REV. 495, 507–508 (2009).

[437] *Fischer*, 214 F.3d at 1119.

[438] *Resurrection Bay Conservation Alliance*, 640 F.3d at 1095 ("As this Court has explained, the usual approach to evaluating the reasonableness of an attorney fee award requires application of the lodestar method and *Kerr* factors." (citing *Fischer*, 214 F.3d at 1119)); *see also Fischer*, 214 F.3d at 1119 ("Second, the court must decide whether to enhance or reduce the lodestar figure based on an evaluation of the *Kerr* factors that are not already subsumed in the initial lodestar calculation.").

[439] *See* Boyer & Meidinger, *supra* note 10, at 906-07; *see also* Samuels, *supra* note 364, at 271. Although the Boyer & Meidinger article is decades old, our research suggests that this is still the case. We found no examples of EPA intervening in an SSO-related citizen enforcement action. However, the U.S. DOJ was listed as an amicus (6 cases), an interested party (15 cases), a neutral party (5 cases), a movant (2 cases), or a miscellaneous party (1 case) in 29 SSO-related citizen lawsuits. These listings appear to be generally related to the U.S. DOJ's role in reviewing settlement agreements (see **Part 4.A.4** of this Chapter, above).

[440] *See* SNAPSHOT, *supra* note 422, at 7 ("On rare occasions, the Water Boards themselves will utilize citizen suit provisions to pursue enforcement actions against particular defendants or to intervene in an existing citizen lawsuit to work with a citizen organization to



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obtain remedies of mutual interest."). We found no examples of the State or Regional Board intervening in an SSO-related citizen enforcement action.

441 "Claim preclusion, or res judicata, applies where: (1) the same parties, or their privies, were involved in the prior litigation, (2) the prior litigation involved the same claim or cause of action as the later suit, and (3) the prior litigation was terminated by a final judgment on the merits." *Cent. Delta Water Agency v. United States*, 306 F.3d 938, 952 (9th Cir. 2002). The Seventh Circuit has framed its analysis of the first requirement in terms of whether the subsequently-filed government action was a diligent prosecution. *See Friends of Milwaukee Rivers v. Milwaukee Metro. Sewerage Dist.*, 382 F.3d 743, 759 (7th Cir. 2004) (applying *res judicata* in an SSO context where EPA filed a lawsuit against the defendant later the same day the citizen group filed its complaint and entered into a stipulation with the defendant); *see also Friends of Milwaukee's Rivers & Alliance for Great Lakes v. Milwaukee Metro. Sewerage Dist.*, 556 F.3d 603, 606–07 (7th Cir. 2009). Authors have identified some potential problems with overfiling that precludes citizen suits. *See, e.g.*, Samuels, *supra* note 364, at 277–280 (identifying four main potential problems: (1) missed opportunities for citizen oversight of government diligence and public exposure, (2) perverse incentives for violators to "bide their time in the hopes of a better settlement offer from the government," (3) "defendants get stuck with the bill for their own litigation costs in two actions—*and* the plaintiff's costs," and (4) waste of judicial resources if agencies "do not bring a timely enforcement action, choose not to intervene in a citizen suit, and then bring their own subsequent action").

442 In the SSO context, we found 2 instances of consolidated citizen and government enforcement cases. These involved the City of Los Angeles and the City of San Diego. *See supra* note 482 and accompanying text.

443 *River Watch Cases*, CAL. RIVER WATCH, http://www.ncriverwatch.org/legal/index.php (last visited Feb. 19, 2016). While we were doing the primary research for this project, the "Current Cases" and "Resolved Cases" hyperlinks on this webpage led to webpages with fairly comprehensive lists of active and resolved cases, many with links to NOIs, complaints, and settlements. However, sometime within the past several months, the more comprehensive list of resolved cases has been replaced with a shorter list of "examples of cases that have been resolved by River Watch." *See Resolved Cases*, CAL. RIVER WATCH, http://www.ncriverwatch.org/legal/resolved/index.php (last visited Feb. 19, 2016).

444 *Sick of Sewage Campaign*, S.F. BAYKEEPER, https://baykeeper.org/our-work/sick-sewage-campaign (last visited Dec. 16, 2015); *Baykeeper's Legal Actions to End Sewage Spills*, SAN FRANCISCO BAYKEEPER, https://baykeeper.org/articles/baykeepers-legal-actions-end-sewage-spills (last visited Feb. 19, 2016).

445 *Collection System Settlement Agreement*, LA SEWERS, http://san.lacity.org/lasewers/cssa/index.htm. Note that, this webpage, and the links it contained, is no longer available. Sometime after the settlement agreement terminated in 2015, the City appears to have removed the many documents and compliance reports that were previously accessible from its website.

446 *See Dockets*, BLOOMBERG LAW, https://www.bloomberglaw.com/dockets (requires subscription for access).

447 *See supra* note 443.

448 Some NOIs sent to EPA are addressed to the agency's Washington, D.C., headquarters, others are addressed to the EPA regional offices, and some are addressed to both. The different offices try to share the NOIs that only they receive. When Region 9 receives an NOI, complaint, settlement agreement, or other citizen suit related document, it is triaged to identify any red flags that would indicate EPA's active involvement might become necessary, then entered into the tracking spreadsheet for the current fiscal year. Each spreadsheet entry includes the date the document was received by Region 9, the type of document, the plaintiff and defendant, and the facility name and location. Every few years, EPA archives the paper documents. When people make Freedom of Information Act (FOIA) requests, EPA scans the requested documents and makes them available via FOIA online. Region 9 hopes to eventually scan and make available all NOIs as a matter of course. Telephone interview with Laurie Kermish, CWA Section Chief, Office of Regional Counsel, EPA Region 9 (DATE).

449 Note that this figure treats administrative penalty actions as barring only citizen civil penalty claims (see discussion **Chapter 4.A.3**), although it is not clear that the Ninth Circuit would interpret them this way.

450 If settlement negotiations are underway, the citizen may delay serving the complaint on the defendant for up to 90 days. *See* FED. R. CIV. P. 4(m). Until recently, a delay of up to 120 days was acceptable. *See* U.S. Supreme Court Order, Apr. 29, 2015, *available at* http://www.supremecourt.gov/orders/courtorders/frcv15_5h25.pdf (reducing the presumptive time for service from 120 to 90 days effective December 1, 2015).

451 *See* FED. R. CIV. P. 41(a). Rule 41(a) allows a plaintiff to "dismiss an action without a court order by filing: (i) a notice of dismissal before the opposing party serves either an answer or a motion for summary judgment; or (ii) a stipulation of dismissal signed by all parties who have appeared." FED. R. CIV. P. 41(a)(1). Alternatively, a plaintiff can request dismissal by court order "on terms that the court considers proper." FED. R. CIV. P. 41(a)(2).

452 The Federal Rules of Civil Procedure provide for involuntary dismissal under a number of circumstances, including when:

- The court lacks subject-matter jurisdiction. FED. R. CIV. P. 12(b)(1). Federal courts are courts of limited jurisdiction that can only hear cases involving (1) a federal question or (2) parties with diversity of citizenship where the amount in controversy exceeds $75,000. *See* 28 U.S.C. §§ 1331, 1332.
- The plaintiff has failed "to state a claim upon which relief can be granted." FED. R. CIV. P. 12(b)(6). Dismissal for failure to state a claim is proper only if "it appears beyond doubt that the plaintiff can prove no set of facts in support of his claim



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which would entitle him to relief." *Schowengerdt v. Gen. Dynamics Corp.*, 823 F.2d 1328, 1332 (9th Cir. 1987) (quoting *Conley v. Gibson*, 355 U.S. 41, 45–46 (1957)), *cert. denied*, 112 S.Ct. 1514 (1992).

- There are no material facts in dispute and the pleadings reveal that the plaintiff's claims and defenses lack substantive merit. FED. R. CIV. P. 12(c). "Judgment on the pleadings is properly granted when [, accepting all factual allegations in the complaint as true,] there is no issue of material fact in dispute, and the moving party is entitled to judgment as a matter of law." *Chavez v. U.S.*, 683 F.3d 1102, 1108 (9th Cir. 2012) (quoting *Fleming v. Pickard*, 581 F.3d 922, 925 (9th Cir. 2009)) (addition in original). The analyses under Rule 12(c) and 12(b) are "substantially identical." *Id.*
- "[T]he plaintiff fails to prosecute or to comply with the [] rules or a court order. FED. R. CIV. P. 41(b).

[453] "Many citizen enforcement actions require no more than an open records request, a visit to the state environmental office to review DMR [discharge monitoring report] records, and a complaint followed swiftly by a summary judgment motion based on the defendant's own written, signed reports." Coplan, *supra* note 10, at 71.

[454] *See N. Cal. River Watch v. Cnty. of Sonoma*, 3:98-cv-04762 (N.D. Cal. 1998); *N. Cal. River Watch v. Sonoma Cnty. Water Agency, Does 1-10, Inclusive*, 3:04-cv-05110 (N.D. Cal. 2004).

[455] Some of the collection systems in Sonoma County or within the umbrella of the Sonoma County Water Agency (see prior endnote) are located in Region 1 and some are located within Region 2.

[456] For these cases, we could not find an NOI or complaint, but other evidence suggested that SSOs were involved: the settlement focused on or included SSO-related provisions in 3 cases, and the defendant was a collection system agency or was targeted for SSO-related enforcement on another occasion in 3 cases.

[457] That case, *Coal. for a Sustainable Delta v. City of Stockton*, No. 2:09-cv-00466 (E.D. Cal.), was settled in September 2015, after data gathering regarding citizen enforcement actions was complete. Therefore, the associated settlement is not included in our analyses.

[458] San Diego Coastkeeper filed 1 lawsuit with Surfrider Foundation as a co-plaintiff, and 1 lawsuit with Surfrider, American Canoe Association, and Divers Against Polluters as co-plaintiffs.

[459] These were: Coalition for a Sustainable Delta (with water district co-plaintiffs), Ecological Rights Foundation, Millsmont Homeowners Association, Our Children's Earth Foundation, Orange County Coastkeeper, Garril Page, Santa Barbara Channelkeeper, Santa Monica Baykeeper (now LA Waterkeeper), and Wishtoyo Foundation / Ventura Coastkeeper.

[460] John and Pauline Loades sent an NOI in 2010 that appears to lack any follow-up legal activity.

[461] In 2011, the State Water Resources Control Board's Office of Enforcement released a report examining citizen enforcement under the CWA over a 15-month period during 2009 and 2010. *See* SNAPSHOT, *supra* note 422, at 5. Several of the identified citizen actions addressed SSOs. In 2013, the California Association of Sanitation Agencies (CASA) prepared an information summary on CWA citizen enforcement actions against public agencies since 2006, including many related to SSOs. CAL. ASS'N OF SANITATION AGENCIES, SUMMARY OF RECENT CLEAN WATER ACT CITIZEN SUIT LITIGATION (2013).

[462] *See* **Chapter 9.C.4** (discussion of *California River Watch v. City of Healdsburg*).

[463] This includes the agreement on SSO issues apparently reached in the Healdsburg case mentioned in the previous note.

[464] *Id.*

[465] *See supra* note 457.

[466] Categories were developed based on the sanitary sewer system operations, maintenance, and management principles and techniques summarized in several sources, especially: WATER ENV'T FED'N, *supra* note 16; 2004 EPA REPORT, *supra* note 24, app. L.

[467] These included, for example, requirements to gather and report more detail about those calling in SSOs, site conditions, methods used to estimate SSO volume and duration and to determine whether the spill reached the MS4 and/or surface waters, and descriptions of cleanup/remediation efforts.

[468] One of which we could not find (see explanation in the following paragraph).

[469] In that case, *San Diego Baykeeper v. U.S. Department of Defense* (U.S. Marine Corps Base Camp Pendleton), 3:02-cv-00499 (S.D. Cal), the SSO settlement agreement stated that the "Parties agree that Plaintiffs are prevailing or substantially prevailing parties within the meaning of Section 505(d) of the CWA, 33 U.S.C. § 1365(d), and that the United States shall pay reasonable attorneys' fees and costs of Plaintiffs with respect to the Civil Action and Consent Decree. The Parties will attempt to reach agreement as to the appropriate amount to be paid. If they are unable to do so, Plaintiffs may file an application with this Court for the recovery of reasonable fees and costs . . . ."

[470] Enforcement data can also be accessed from CIWQS via the public reports feature. *See California Integrated Water Quality System Project (CIWQS): Public Reports: Enforcement Reports*, STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/ciwqs/publicreports.shtml#enforce (last updated May 4, 2015) (providing public access to the same data in a more limited fashion).

[471] A flat file is a simple file that can be opened with a spreadsheet program, like Microsoft Excel. The flat files used in this report were exported from databases maintained by the State Board.



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[472] See links at *NPDES Permits & Stormwater: Compliance and Enforcement: California*, EPA, http://www.epa.gov/region9/water/npdes/compliance.html#CA (last updated Dec. 23, 2015) (listing SSO-related federal enforcement actions).

[473] *See Sanitary Sewer Overflow Reduction Program: SSO Compliance & Enforcement Information Annual Compliance Report*, STATE WATER RES. CONTROL BD., http://www.waterboards.ca.gov/water_iss ues/programs/sso/#compliance_rpts.

[474] *See Enforcement Reports*, *supra* note 470.

[475] *E.g.*, *Enforcement Program Information*, N. COAST REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/northcoast/water_issues/programs/enforcement/; *Pending Enforcement Liabilities & Penalties*, S.F. BAY REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/sanfranciscobay/public_notices/pending_enforcement.shtml; *Sanitary Sewer Improvement Program*, S.F. BAY REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/SSO_Reduction.shtml; *Enforcement*, CENTRAL COAST REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/centralcoast/water_issues/programs/enforcement/index.shtml; *Enforcement Actions*, SANTA ANA REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/santaana/public_notices/enforcement_actions.shtml; *San Diego Region – Enforcement Reports*, SAN DIEGO REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/sandiego/water_issues/programs/enforcement/index.shtml.

[476] *E.g.*, *Adopted Orders Search*, N. COAST REG'L WATER QUALITY CONTROL BD., http://water100.waterboards.ca.gov/rb1/adopted_orders/; *Adopted Orders Search*, S.F. BAY REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders_db/index.php; *Adopted Orders*, CENT. VALLEY REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/index.shtml; *Adopted Orders, Permits, Resolutions, and Settlements*, CENT. COAST REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/index.shtml; *Adopted Orders*, CENT. VALLEY REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/index.shtml#EnforceB; *Board Orders*, COLO. RIVER BASIN REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/coloradoriver/board_decisions/adopted_orders/index.shtml; *Adopted Orders and Resolutions*, SANTA ANA REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/index.shtml; *San Diego Region – Adopted Orders, Decisions, and Resolutions*, SAN DIEGO REG'L WATER QUALITY CONTROL BD., http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/.

[477] For example, for some state penalty actions, we found evidence of a notice of violation, an ACL complaint, and an ACL order. For others, all we were able to find was an ACL complaint or an ACL order. Where a violator chose to pay the ACL amount proposed in a complaint, there would be no follow-on ACL order. It is our understanding that, in recent years, some Regional Boards are increasingly not issuing ACL complaints and instead are entering settlement discussions directly, on the basis that it results in better information from the violator more quickly and at less cost. Telephone interview with Jim Fischer, Special Investigations Unit, Office of Enforcement, State Water Res. Control Bd. (Oct. 19, 2015). This would explain some of the difficulty we had in finding ACL complaints for some ACL orders.

[478] *See* links at *NPDES Permits & Stormwater: Compliance and Enforcement: California*, EPA, http://www.epa.gov/region9/water/npdes/compliance.html#CA (last updated Dec. 23, 2015).

[479] *NPDES Permits & Stormwater: Compliance and Enforcement: California, Marin County Sewage Collection Systems – Administrative Orders Issued*, EPA, http://www.epa.gov/region9/water/npdes/compliance.html#marin (last updated Dec. 23, 2015). The targeted agencies were Almonte Sanitary District, Alto Sanitary District, Homestead Valley Sanitary District, the City of Mill Valley, Richardson Bay Sanitary District, the City of Sausalito, Sausalito-Marin City Sanitary District, and Tamalpais Community Services District. *See id.* Sausalito-Marin City Sanitary District was also targeted in 2007. *See NPDES Permits & Stormwater: Compliance and Enforcement: California, Sausalito-Marin City Sanitary District – Administrative Order*, EPA, http://www.epa.gov/region9/water/npdes/compliance.html#marin (last updated Dec. 23, 2015).

[480] *NPDES Permits & Stormwater: Compliance and Enforcement: California, San Diego (City of) Sewage Collection System – Final Consent Decree*, EPA, http://www3.epa.gov/region9/water/npdes/compliance.html#sandiego (last updated Dec. 23, 2015) (noting the involvement of Surfrider and Baykeeper); *NPDES Permits & Stormwater: Compliance and Enforcement: California, East Bay Municipal Utility District and East Bay Communities Consent Decree*, EPA, http://www3.epa.gov/region9/water/npdes/compliance.html#ebmud (last updated Dec. 23, 2015) (noting the involvement of the State Board, the San Francisco Bay Regional Board, San Francisco Baykeeper, and Our Children's Earth Foundation).

[481] Numbers are derived from the reports linked at *Sanitary Sewer Overflow Reduction Program: SSO Compliance & Enforcement Information Annual Compliance Report*, *supra* note 473. The reports provide summaries but do not provide information regarding individual actions.

[482] These were the East Bay Municipal Utility District Collection System (which received other government enforcement attention both before and after the joint action); the collection systems for the cities of Alameda, Albany, Berkeley, Emeryville, and Piedmont; and the Stege Sanitary District Collection System. The City of Oakland's collection system was also addressed in this litigation, but we



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do not count it here because the City also experienced a separate citizen enforcement action. Instead, the City is accounted for in **Figure 16.A** as the lone collection system falling into the "After + joint (after)" category.

[483] The City of Los Angeles's LA City Bureau of Sanitation Collection System received additional government enforcement only after the joint action.

[484] Temecula Valley Regional Collection System.

[485] Southeast Regional Waste Disposal Facility Collection System. California River Watch's 2003 suit against 2 of Lake County Sanitation District's collection systems was identified as duplicative of Regional Board enforcement in Ensuring Clean Water for California: Hearing Before the H. Subcomm. on Water Resources and Environment, 108th Cong. (Sept. 30, 2004) (statement of Mark Dellinger, Special Districts Administrator, Lake County, Cal.). Lake County Sanitation District manages 5 different collection systems. The Northwest Regional Wastewater System was under a CDO related to SSOs from 1994 to 2011, and the Southeast Regional Wastewater System was under a similar CDO from 1991 to 2000. In 2002 the Central Valley Regional Board assessed ACL penalties for a single large SSO that occurred in the Northwest System earlier that year. California River Watch sued the District in 2003, alleging both SSOs and overflows of treated wastewater from storage reservoirs to surface waters from May 1998 to May 2003. Given the multiple regulatory enforcement actions the District experienced, some might consider citizen enforcement action unnecessary and duplicative here. However, at the time River Watch filed suit, the Regional Board had pursued a penalty action for a single SSO in the Northwest System, had not engaged formally with the Southeast System since 2000, and had never assessed an SSO-related penalty for that system. The Regional Board could have intervened in River Watch's suit to avoid duplicative subsequent action, but it did not. Instead, in mid-2004, it issued an ACL complaint for SSOs occurring from March 2002 to April 2004 in the Southeast System. River Watch settled with the District in February 2005. Days later, the Regional Board issued a CAO for the Southeast System. In early 2008, the Board assessed the District additional ACL penalties for SSOs in that system. Although infrastructure improvements take time, the District had been experiencing compliance problems since at least the early 1990s.

[486] Northwest Regional Waste Disposal Facility Collection System. *See also* previous note.

[487] Salton Oxidation Basin Collection System.

[488] *See SSO.txt*, *supra* note 53.

[489] Some collection systems reported SSOs occurring before that date, but we eliminated these SSOs from our analysis to enhance comparability.

[490] *Questionnaire.txt*, *supra* note 32.

[491] *See* Statewide Permit, *supra* note 52, at 17, Part D.15; *see also* 2008 COMPLIANCE REPORT *supra* note 52, at 2.

[492] *See supra* note 281.

[493] The percentages of all certified and amended SSO reports in the SSO database as of December 18, 2015, for which entries to the field "where failure occur" fell into 1 of 8 major groups or were left blank were as follows:

| Reported location of failure | % SSOs in database |
|---|---|
| Main | 39% |
| Lower lateral | 32% |
| **[Field left blank]** | **23%** |
| Other | 4% |
| Manhole | 2% |
| Upper lateral | <1% |
| Pump station | <1% |
| Siphon | <1% |
| Air relief valve | <1% |

[494] Many collection systems appear to have interpreted the data entry field as requesting a percentage, when the field was intended to capture the number of pumps older than a certain age.

[495] The SSO database does include a field, "Material_Sewer_Pipe," to record pipe composition information related to an SSO event, but only about 27% of SSOs reports included this information.

[496] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 23 (showing substantial differences in average and median spill rate between different size classes of collection system).

[497] 2013–14 COMPLIANCE REPORT, *supra* note 26, at 28–30.

[498] 2013–14 COMPLIANCE REPORT, *supra* note 26, at 28. Collection-system-aligned interests have criticized the ranking tool.

[499] *See* S.F. Bay Reg'l Water Quality Control Bd., Complaint for Administrative Liability In the matter of Oakland, Order No. R2-2011-0014, Settlement Agreement and Stipulation for Entry of Order; Order, at 2, Mar. 28, 2011, *available at* http://www.waterboards.ca.gov/sanfrancisco bay/board_decisions/adopted_orders/2011/R22011-0014.pdf (identifying 11 SSOs totaling 42,175 gal to surface waters, 3 discharges of chlorinate water to creeks while flushing SSOs, 6 failures to notify appropriate



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agencies of SSOs within 2 hours, 7 failures to timely submit final certified SSO reports, 6 failures to accurately report SSO start times and volumes, and 1 failure to accurately report SSO flow rate and volume from 5/2009 to 7/16/2010); *see also* STATE WATER RES. CONTROL BD. & REG'L WATER QUALITY CONTROL BDS., 2010 ANNUAL ENFORCEMENT REPORT 109 (2011) [hereinafter 2010 ANNUAL ENFORCEMENT REPORT], *available at* http://www.waterboards.ca.gov/water_issues/programs/enforcement/docs/annl_rpt2010.pdf ("Recent inspections revealed that some dischargers are violating the Sanitary Sewer Order and are underestimating the volume of sewage spilled and/or failing to report SSOs. Further, there are numerous sanitary sewer collection systems in the State that have not yet enrolled for coverage under the Sanitary Sewer Order."); OFFICE OF ENFORCEMENT, STATE WATER RES. CONTROL BD., DECONSTRUCTING ENFORCEMENT: A PRIMER ON WATER QUALITY ENFORCEMENT 8 (2010), *available at* http://www.waterboards.ca.gov/water_issues/programs/enforcement/docs/deconstructing_enforce2010aug.pdf.

[500] 2010 ANNUAL ENFORCEMENT REPORT, *supra* note 499, at 90 ("The compliance rate was calculated assuming that each facility received some level of oversight. This assumption may be inaccurate for many regions, such as in those regions where few or no inspections were conducted, those regions where SMRs are not receiving necessary review or for new program categories that are currently in the development stage. . . . [M]any of the documented violations in the program are related to failure to meet their regular reporting requirements and "no spill certification" reporting requirements.").

[501] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 11, 11 fig.4 ("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.").

[502] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 12.

[503] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 12, 13 fig.6. The spectrum of reporting errors described in the most recent Annual Compliance Report includes "filing a 'No-spill' certification when the enrollee had a public SSO, submitting duplicate "No-spill" certifications, not submitting a "No-spill" certification, or not submitting an SSO." *Id.* at 13. According to the State Board, the remainder complied fully with reporting requirements. *See id.*

[504] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 9.

[505] *See* ORANGE CNTY. AREA WASTE DISCHARGE REQUIREMENTS STEERING COMM., SEWER SPILL ESTIMATION GUIDE: A GUIDE TO ESTIMATING SANITARY SEWER OVERFLOW (SSO) VOLUMES 3 (2014), *available at* http://www.waterboards.ca.gov/water_issues/programs/sso/docs/ssmp/orange_cnty_sewerspill_estimation_guide.pdf.

[506] *See id.* at 3–5.

[507] *See id.* at 5–26.

[508] *Compare* Exhibits 69 (call out report) *and* 70 (CIWQS record) to Deposition of John R. Simonetti, Sr., vol. 2, in *S.F. Baykeeper v. W. Bay Sanitary Dist.*, Case No. 09-cv-05676, Jan. 24, 2011 (N.D. Cal.) (Although the call out report described the SSO as entering a creek before the creek was blocked and pumped out, the CIWQS record lists the SSO as not discharged to a drainage channel and/or surface water.); *see also* Deposition of John R. Simonetti, Sr., vol. 1, at 121–123, 126–130, in *S.F. Baykeeper v. W. Bay Sanitary Dist.*, Case No. 09-cv-05676, Jan. 17, 2011, (revealing that an internal agency spreadsheet field named "VOL to STWW," which stands for "volume to state waterway" was used to indicate any volume not recovered from a storm drain, but did not necessarily indicate that the unrecovered volume reached state waters; some SSOs with volumes included in this field were reported electronically to the Regional Board as not reaching state waters).

[509] *See* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 16 (describing the event, which occurred in the Victor Valley Wastewater Reclamation Authority's collection system).

[510] *See also* 2013–14 COMPLIANCE REPORT, *supra* note 26, at 23 fig.19 (showing average/median spill rates for systems < 10 miles in size of 43..6/29.5 vs. average and median rates less than 10 for systems 20 or more miles in size during fiscal year 2013–2014).

[511] As one interviewee put it, "One reason small entities are not targeted is likely because they don't have funds to settle these cases for the amounts desired."

[512] Some collection systems appear more than once, with differently timed citizen enforcement actions.

[513] Although the intervener plaintiffs submitted NOIs to some of East Bay Municipal Utility District's satellite collection systems, we used the complaint date for the government lawsuit for all associated collection system / citizen action pairs.

[514] Precipitation data were downloaded from Daymet using the Single Pixel Extraction Tool. *Single Pixel Extraction Tool*, DAYMET, http://daymet.ornl.gov/singlepixel.html (last visited July 28, 2015). For each targeted collection system, we used the latitude and longitude of an SSO event to extract daily precipitation data for that point for the period from January 1, 2007, to December 31, 2014. Precipitation data were plotted using local polynomial regression fitting (loess curve). This creates a smoothed visualization of precipitation by season, but does not show the magnitude of wet weather events on a daily basis. While we chose to use precipitation data to provide context for collection system performance, future researchers could attempt to analyze potential causal relationships using datasets like these.

[515] *See* Bobbi Larson & Vickie Caulfield, *Clean Water Act Citizen Suits and the Public Agency: A Legal and Operations Perspective*, PROC. OF THE WATER ENV'T FED'N, 250, 253 (2013).



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[516] This case has been viewed skeptically by collection-system-aligned interests. *See id.* at 250 (stating that "[t]he District had been proactive in meeting regulatory requirements dating back to the CMOM era and now the more current California Sanitary Sewer Overflow Reduction Program; however, compliance with these requirements did not protect the District from third party lawsuits").

[517] Julia Scott, *Baykeeper Makes Legal Headway Against West Bay Sanitary District*, SAN JOSE MERCURY NEWS, May 25, 2011, *available at* http://www.mercurynews.com/ci_18134696.

[518] After the federal district court granted Baykeeper's motion for partial summary judgment and awarded interim attorneys' fees, West Bay Sanitary District placed a full-page "information bulletin" in a local newspaper presenting its argument that "Baykeeper Exploits Laws Intended to Protect the Environment for Monetary Gain." West Bay Sanitary District, *Information Bulletin*, THE ALMANAC, at 4, June 8, 2011 (pointing out its current year budget for capital improvement projects and "long-term budget projections call[ing] for increases in capital expenditures for the next several years"). An examination of the District's spill rate trend shows that it made rapid improvements beginning in mid-2010 from "20-40 spills per 100 miles" to "7.14 spills" in 2011. Scott, *supra* note 517.

[519] *See* SANTA BARBARA CHANNELKEEPER, 12-YEAR HISTORY OF SANTA BARBARA CHANNELKEEPER RESEARCH, OUTREACH AND ADVOCACY EFFORTS ON SANTA BARBARA'S SEWAGE PROBLEMS (2012), *available at* http://www.sbck.org/pdf/History%20of%20SBCK%20actions%20on%20sewage.pdf.

[520] *See* CITY OF SANTA BARBARA CREEKS DIV., 2012 REPORT 6 (2012); *see also* Cindy H. Wu et al., *Characterization of Coastal Urban Watershed Bacterial Communities Leads to Alternative Community-Based Indicators*, PLOS ONE 5(6): e11285, doi:10.1371/journal.pone.0011285; Bram Sercu et al., *Storm Drains are Sources of Human Fecal Pollution during Dry Weather in Three Urban Southern California Watersheds*, 43 ENVTL. SCI. & TECH. 293 (2009).

[521] CITY OF SANTA BARBARA CREEKS DIV., SOURCE TRACKING PROTOCOL DEVELOPMENT PROJECT: FINAL GRANT REPORT 14 (2012), *available at* http://www.santabarbaraca.gov/civicax/filebank/blobdload.aspx?BlobID=16724.

[522] These criteria are generally consistent with the recommendations of U.S. Santa Barbara researchers for identifying potentially high-risk pipe segments. *See* Bram Sercu, et al., *Sewage Exfiltration as a Source of Storm Drain Contamination during Dry Weather in Urban Watersheds*, 45 ENVTL. SCI. & TECH. 7151, 7156 (2011).

[523] *See Sewer Lateral Programs*, HILLSBOROUGH, http://www.hillsborough.net/244/Sewer-Lateral-Programs (last visited Feb. 19, 2016); Town of Hillsborough Compliance with Regulatory Mandates: Private Sewer Lateral Inspection and Repair Program, http://www.sewersmart.org/summit12/CYRUS%20Town%20of%20Hillsborough%20Compliance%20Presentation.pdf.

[524] The Town continues to use a phased approach to addressing excessive infiltration and inflow that involves inspecting private sewer laterals whenever it repairs an associated public sewer main and providing financial assistance (waiving permit fees and providing low-interest loans) for voluntary repairs to defective private laterals. *See Sewer Lateral Programs*, *supra* note 523.

[525] Due to excessive inflow and infiltration, during wet weather, East Bay Municipal Utility District routes flows that exceed its treatment plant's capacity to three Wet Weather Facilities that store, or partially treat and then discharge, wastewater. *See, e.g.*, S.F. Bay Reg'l Water Quality Control Bd., Waste Discharge Requirements for the City of Emeryville Sanitary Sewer Collection System, Alameda County, Order No. R2-2014-0045, Nov. 12, 2014, at F-3. The District's current NPDES permit prohibits discharges from the Wet Weather Facilities to waters of the United States. *See* S.F. Bay Reg'l Water Quality Control Bd., Waste Discharge Requirements for the East Bay Municipal Utility District, Special District No. 1 Wet Weather Facilities (WWFs), Alameda and Contra Costa Counties, Order No. R2-2014-0044, Nov. 12, 2014, Part III.A. However, the District cannot ensure compliance on its own—the agency is partially dependent on each of its satellite collection systems reducing their own inflow and infiltration. Although, as a general matter, satellite collection systems in California do not have NPDES permits (see **Chapter 2.B.1**), the San Francisco Bay Regional Board has also issued individual NPDES permits for the 7 satellite collection systems that transport wastewater to the East Bay Municipal Utility District regional interceptor system for treatment at District's facilities. *See, e.g.*, Order No. R2-2014-0045, *supra* this note, at F-3. The satellites systems' NPDES permits largely mirror (or incorporate by reference) the Statewide Permit. *See e.g.*, Order No. R2-2014-0045, *supra* this note, at Part III; *see also* Order No. R2-2014-0046 (Alameda); Order No. R2-2014-0047 (Albany); Order No. R2-2014-0048 (Berkeley); Order No. R2-2014-0049 (Oakland); Order No. R2-2014-0050 ((Piedmont); Order No. R2-2014-0051 (Stege Sanitary District). They also specifically prohibit permittees from causing or contributing to discharges from the District's Wet Weather Facilities and prohibit the discharge of toxic substances used for SSO disinfection and cleanup to surface waters. *See e.g.*, Order No. R2-2014-0045, *supra* this note, at Part III; *see also* Order No. R2-2014-0046 (Alameda); Order No. R2-2014-0047 (Albany); Order No. R2-2014-0048 (Berkeley); Order No. R2-2014-0049 (Oakland); Order No. R2-2014-0050 ((Piedmont); Order No. R2-2014-0051 (Stege Sanitary District).

[526] It agreed to (1) do a water balance analysis to show that existing storage capacity is adequate to avoid land disposal after soils are saturated under normal operational conditions, (2) comply with its Policy and Procedure for Pumping at Salmon Creek and to modify its Salmon Creek water level monitoring and well pump control system to allow real-time data collection (posting water levels and pump status on the District's website), and (3) to pursue a coastal development permit "for all development not subject to exemptions and categorical exclusions."

[527] Collection-system-aligned interests identified this case as addressing only minor violations and intimated that the suit was abusive because the City had reported only a few SSOs over the preceding 5 years; they did not mention the Basalt Pond claims. *See* Ensuring Clean Water for California: Hearing Before the H. Subcomm. on Water Resources and Environment, 108th Cong. (Sept. 30, 2004) (statement of Mark Dellinger, Special Districts Administrator, Lake County, Cal.).

[528] *See* City of Los Angeles, Collection System Settlement Agreement Annual Progress Report No. 1, at vi (2005).



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[529] *Molski v. Evergreen Dynasty Corp.*, 500 F.3d 1047, 1060–61 (9th Cir. 2007) (describing a case in which one individual has pursued approximately 400 ADA cases and noting that "[i]t is a question of degree where the line falls between aggressive advocacy of legitimate claims and the frivolous assertion of false allegations"; explaining that "[i]n this case, the district court, looking at the allegations of hundreds of lawsuits, made a decision that Molski's baseless and exaggerated claims of injuries exceeded any legitimacy and were made for the purpose of coercing settlement"); *see also Int'l Union of Petroleum & Indus. Workers v. W. Indus. Maint., Inc.*, 707 F.2d 425, 430 (9th Cir. 1983) (describing a frivolous appeal as "when the result is obvious or the arguments of error advanced are wholly without merit").

[530] *See* CAL. RULES OF PROF'L CONDUCT R. 3-200(B) (2015); FED. R. CIV. P. 11(b)(2).

[531] FED. R. CIV. P. 11(b).

[532] *See* FED. R. CIV. P. 11(c)(1), (4) (allowing a court to "impose an appropriate sanction on any attorney, law firm, or party that violated the rule [Rule 11(b)] or is responsible for the violation," including a nonmonetary directive, "an order to pay a penalty into court," or "an order directing payment . . . of part or all of the reasonable attorney's fees and other expenses directly resulting from the violation").

[533] The Ninth Circuit has noted that "the filing of a single frivolous claim, after a warning, may be sufficient to trigger disciplinary proceedings." *Standing Comm. on Discipline of U.S. Dist. Ct. for S. Dist. of Cal. v. Row*, 735 F.2d 1168, 1171 (9th Cir. 1984) (citing *Panagopoulous v. INS*, 434 F.2d 602 (1st Cir. 1970)). The U.S. Supreme Court has emphasized that "It is the obligation of any lawyer . . . not to clog the courts with frivolous motions or appeals." *Polk Cnty. v. Dodson*, 454 U.S. 312, 323 (1981). Similarly, federal courts can suspend or disbar attorneys for "conduct contrary to professional standards that shows an unfitness to discharge continuing obligations to clients or the courts, or conduct inimical to the administration of justice." *In re Girardi*, 611 F.3d 1027, 1035 (9th Cir. 2010) (quoting *In re Snyder*, 472 U.S. 634, 645 (1985), citing FED. R. APP. P. 46(b)(1)(B), and disciplining attorneys for filing a frivolous appeal). Additionally, the California Rules of Professional Conduct prohibit a member of the California Bar from seeking, accepting, or continuing employment "if the member knows or should know that *the objective* of such employment is:"

> (A) To bring an action, conduct a defense, assert a position in litigation, or take an appeal, without probable cause and for the purpose of harassing or maliciously injuring any person; or
>
> (B) To present a claim or defense in litigation that is not warranted under existing law, unless it can be supported by a good faith argument for an extension, modification, or reversal of such existing law.

CAL. RULES OF PROF'L CONDUCT R. 3-200 (2015) (emphasis added). The Rules mandate withdrawal from representation if "[t]he member knows or should know that the client is bringing an action, conducting a defense, asserting a position in litigation, or taking an appeal, without probable cause and for the purpose of harassing or maliciously injuring any person." CAL. RULES OF PROF'L CONDUCT R. 3-700(B)(1). Furthermore, while it is not mandatory, an attorney can unilaterally withdraw from representation of a client who "insists upon presenting a claim or defense that is not warranted under existing law and cannot be supported by good faith argument for an extension, modification, or reversal of existing law." CAL. RULES OF PROF'L CONDUCT R. 3-700(C)(1)(a). If an attorney knowingly or recklessly pursues litigation in the face of these clear client objectives, he or she may be disciplined through public or private reproval, suspension, or even disbarment. For willfully breaching the Rules, attorneys can be disciplined by public or private reproval or up to 3 years of suspension from the practice of law. *See* CAL. BUS. & PROF. CODE §§ 6077, 6078, 6086.5.

[534] *Christianburg Garment Co. v. EEOC*, 434 U.S. 412, 422 (1978).

[535] *See* discussion *supra* **Chapter 2.B.1.c.** Since 2007, citizen NOIs and complaints have typically drawn on publicly accessible records from the SSO Database to ground their claims. Furthermore, both before and after 2007, citizens have used public records requests to acquire internal agency records (e.g., spill reports and tracking spreadsheets) and SSO reports provided to the Regional Boards. Local residents who witnessed SSOs are another source of information.

[536] *See* **Chapter 9.C.3** (discussing California River Watch's actions targeting Bodega Bay Public Utility District and Blue Lake Wastewater Treatment Facility).

[537] This might include the results of exfiltration studies in other areas and mass balance estimates which suggest that the amount of wastewater exiting a collection system is less than the amount that entered it, and the difference is not fully accounted for in SSO reports. *See* Letter from Jack Silver, on behalf of California River Watch, to Eastern Municipal Water District's General Manager and Board of Directors (Jan. 28, 2015) ("Untreated sewage is discharged from cracks, displaced joints, eroded segments, etc., into groundwater hydrologically connected to surface waters. River Watch alleges that such discharges are continuous wherever aging, damaged, and/or structurally defective sewer lines in the District's collection systems are located adjacent to surface waters including Murrieta Creek, the San Diego Canal, the Santa Ana River, and Temescal Creek. Surface waters and groundwater become contaminated with fecal coliform, exposing people to pathogens. Chronic failures in the collection system pose a substantial threat to public health. Studies tracing human markers specific to the human digestive system in surface waters adjacent to defective sewer lines in other systems have verified the contamination of the adjacent waters with untreated sewage. Evidence indicates extensive exfiltration from lines within 200 feet of a surface water. Evidence of exfiltration can be found in mass balance data, 'inflow and infiltration' ('I/I') data, video inspection, and tests of waterways adjacent to sewer lines for nutrients, human pathogens and other human markers such as caffeine."); *see also* **Chapter 1.A.2.**

[538] *See* citations *supra* note 30.

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[539] These same features make it difficult for the plaintiff to provide adequate notice of specific instances of exfiltration. *See supra* note 376 and accompanying text.

[540] *See* **Chapter 9.C.1** (discussing California River Watch's action targeting Brooktrails Community Services District and Santa Barbara Channelkeeper's lawsuit against the City of Santa Barbara); **Chapter 9.C.2** (discussing California River Watch's lawsuit against the City of Eureka); **Chapter 9.C.3** (discussing California River Watch's actions targeting the City of Antioch and Bodega Bay Public Utility District).

[541] Patrick J. Shea & Richard S. Davis, *A Troubling Trend Needs Reform: Defending Environmental Citizen Suits*, FOR THE DEFENSE, Apr. 2014, at 36, 36, 41, *available at* http://www.bdlaw.com/assets/htmldocuments/FTD-1404-Shea-Davis.pdf.

[542] The lack of government enforcement action, alone, should not be taken as evidence that enforcement action is not warranted. Regulatory agencies face pressures to avoid undertaking politically difficult actions. *Cf.* Eric Biber & Berry Brosi, *Officicious Intermeddlers or Citizen Experts? Petitions and Public Production of Information in Environmental Law*, 58 UCLA L. REV. 321, 371 (2010) (concluding that "litigation is leading to the listing of species that are inconvenient politically, but are otherwise deserving of protection under the [Endangered Species] Act"); Berry J. Brosi & Eric G. N. Biber, *Citizen Involvement in the U.S. Endangered Species Act*, 337 SCI. 802, 802, 803 fig. (2012) (finding that "[c]itizen-initiated species (petitioned and/or litigated) face higher levels of biological threat than species identified by [the U.S. Fish and Wildlife Service]").

[543] One example is California River Watch's 2001 suit against the City of Healdsburg. Collection-system-aligned interests identified this case as addressing only minor violations but did not mention non-SSO claims, eventually decided in River Watch's favor. *See* **Chapter 9.C.4.**

[544] *See* Ensuring Clean Water for California: Hearing Before the H. Subcomm. on Water Resources and Environment, 108th Cong. (Sept. 30, 2004) (statement of Mark Dellinger, Special Districts Administrator, Lake County, Cal.) (describing a case in which the citizen suit was not barred by the CWA because the agency "had not paid a monetary penalty as part of the State enforcement and compliance actions," and the Regional Board subsequently "issued a complaint for monetary penalties . . . for some of the same violations" so that the agency "is now faced with the worst of both worlds: expending its limited resources to defend a citizen lawsuit and paying potentially duplicative penalties in a parallel administrative enforcement action").

[545] *See id.*

[546] For example, the impacts of citizen enforcement are not necessarily independent of government enforcement: regulators may either be encouraged to act more aggressively by the perception of active citizen oversight, or be encouraged to act less aggressively by a sense that citizens will pick up any slack. Similarly, it would likely be impossible to tease out the extent to which citizen enforcement encourages collection system agencies to fulfill commitments made for other reasons.

[547] *See* Steven M. Dunne, *Attorney's Fees for Citizen Enforcement of Environmental Statutes: The Obstacles for Public Interest Law Firms*, 9 STAN. ENVTL. L. J. 1, 4, 5 (1990) ("When Congress adopted attorney's fee provisions, it intended to provide attorneys, including public interest lawyers, with an incentive to litigate citizen enforcement actions.").

[548] *See* Shea & Davis, *supra* note 541, at 41 ("It strains the principle of the disinterested private attorney general when for-profit law firms rely on the direct benefit of attorneys' fees from citizen suits to sustain their business models.").

[549] *See* Samuel R. Bagenstos, *The Perversity of Limited Civil Rights Remedies: The Case of "Abusive" ADA Litigation*, 54 UCLA L. REV. 1, 13–14 (2006) (analyzing serial litigation in the context of the ADA).

[550] Brandon Murrill, *The Business of Suing: Determining When a Professional Plaintiff Should Have Standing to Bring a Private Enforcement Action*, 52 WM. & MARY L. REV. 261, 268, 269 (2010).



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