Chapter 7

Federal and State Efforts to Control CSOs and SSOs

The federal and state regulatory framework for controlling CSOs and SSOs affects municipal decision-making on how to best protect human health and the environment from these discharges. This chapter describes the status of the federal framework used to address CSOs and SSOs. The discussion on CSO policies summarizes findings from the 2001 *Report to Congress–Implementation and Enforcement of the CSO Control Policy* (EPA 2001a) and updates data on the status of NPDES permit requirements for CSO control. A brief discussion of current SSO regulatory efforts follows. This chapter also describes a number of state programs to address CSOs and SSOs, and it presents an overview of federal compliance assistance and enforcement efforts related to CSOs and SSOs.

7.1 What are States and EPA Regions Doing to Control CSOs?

On April 19, 1994, EPA published the CSO Control Policy that established objectives for CSO communities and expectations for NPDES permitting authorities (59 FR 18688). The CSO Control Policy also presented elements of an enforcement and compliance program to address dry weather CSO discharges and to enforce NPDES permit requirements. The four key principles of the CSO Control Policy that ensure that CSO controls are cost-effective and meet the objectives of the Clean Water Act are:

1. *Provide clear levels of control that would be presumed to meet appropriate health and environmental objectives;*

In this chapter:

2. *Provide sufficient flexibility to municipalities, especially financially disadvantaged communities, to consider the site-specific nature of CSOs and to determine the most cost-effective means of reducing pollutants and meeting [Clean Water Act] objectives and requirements;*
3. *Allow a phased approach to implementation of CSO controls considering a community's financial capability; and*
4. *Provide for review and revision, as appropriate, of water quality standards and their implementation procedures when developing CSO control plans to reflect the site-specific wet weather impacts of CSOs.*

Objectives for CSO communities with NPDES permits are 1) to implement the NMC and submit documentation on NMC implementation; and 2) to develop an LTCP.

7.1.1 Nine Minimum Controls

The NMC are:

1. Proper operation and regular maintenance programs for the sewer system and the CSOs
2. Maximum use of the collection system for storage
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized
4. Maximizing flow to the POTW for treatment
5. Prohibition of CSOs during dry weather
6. Control of solids and floatable materials in CSOs
7. Pollution prevention
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls

Municipalities were expected to implement the NMC and to submit appropriate documentation to NPDES authorities as soon as reasonably possible, but no later than January 1, 1997. Of the 828 active CSO permits identified by EPA in July 2004, 94 percent (777 permits) required implementation of the NMC.

7.1.2 Long-Term Control Plans

In addition to implementing the NMC, CSO communities are expected to develop and implement an LTCP that includes measures to provide for attainment of water quality standards. The policy identified nine elements that an LTCP should include:

- Characterization, monitoring, and modeling of the CSS
- Public participation
- Consideration of sensitive areas
- Evaluation of alternatives
- Cost/performance considerations
- Operational plan

- Maximization of treatment at the POTW treatment plant
- Implementation schedule
- Post-construction compliance monitoring

LTCP implementation schedules were expected to include project milestones and a financing plan for design and construction of necessary controls as soon as practicable (EPA 1994a).

In July 2004, EPA confirmed the status of LTCPs with states and regional NPDES authorities:

- 86 percent (708 of 828) of permits required development and implementation of an LTCP;
- 59 percent (490 of 828) of LTCPs have been submitted; and
- 35 percent (290 of 828) of LTCPs have been approved.

More information on the CSO Control Policy is provided in EPA's 2001 *Report to Congress–Implementation and Enforcement of the CSO Control Policy.*

7.2 What are States and EPA Regions Doing to Control SSOs?

SSOs that reach waters of the United States are point source discharges, and, like other point source discharges from SSSs, are prohibited unless authorized by an NPDES permit. Moreover, SSOs, including those that do not reach waters of the United States, may be indicative of improper operation and maintenance of the sewer system, and thus may violate NPDES permit conditions.

7.2.1 Application of Standard Permit Conditions to SSOs

The NPDES regulations establish standard permit conditions that are incorporated into all NPDES permits. Several existing standard permit conditions have particular application to SSOs. These include:

Noncompliance Reporting – When incorporated into a permit, the standard permit conditions for noncompliance reporting at 40 CFR 122.41(l)(6) and (7) require permittees to report any instance of noncompliance to the NPDES authority. Unpermitted discharges from SSSs to waters of the United States constitute noncompliance, which the permittee would report under these provisions.

Recordkeeping – The permit provisions required by 40 CFR 122.41(j)(2) require permittees to retain copies of all reports required by the permit for a period of at least three years from the date of the report. This provision would require retention of records of noncompliance reports of SSOs.

Proper Operation and Maintenance Requirements – The standard permit conditions at 40 CFR 122.41(d) and (e) require proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions and that permittees take all reasonable

SSOs can occur at numerous locations in the sewer system, including at manholes.

Photo: EPA

steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment. In a permit for a wastewater treatment facility and/or a sewer system, these two standard conditions would require the permittee to properly operate and maintain its collection system as well as take all reasonable steps to minimize or prevent SSO discharges.

7.2.2 Electronic Tracking of SSOs

A growing number of states have increased data collection and tracking efforts for SSOs (excluding building backups) in recent years. As part of this report effort, EPA identified 25 states that track SSO data electronically. The states and the most commonly tracked SSO data elements are listed in Table 7.1.

Table 7.1

Summary of Electronic SSO Data by State

At a minimum, states with electronic systems for tracking SSOs compile information on the date, location, or cause of the overflow.

State	Date & Time Reported	Start Date & Time	End Date & Time/ Duration	Total Overflow Volume (gallons)	SSO Location[a]	SSO Cause	Response Measures Taken[b]	Receiving Water Identified
CA	●	●	●	●	●	●	●	●
CO	●	●	●	●	●	●	●	●
CT		●	●	●	●	●		
FL		●		●	●	●		●
GA	●	●		●	●			●
HI	●	●	●	●	●	●	●	●
IN		●	●	●	●	●		
KS		●	●		●			
MA	●	●	●	●	●	●	●	●
MD		●	●	●	●	●		●
ME	●	●	●	●	●	●	●	●
MI	●	●	●	●	●	●	●	●
MN	●	●	●	●	●	●	●	
NC		●	●	●	●	●		●
ND	●	●	●	●		●	●	●
NH	●	●	●	●	●	●	●	●
NV	●	●		●	●	●	●	●
OK		●	●	●	●	●	●	
RI	●	●	●	●	●	●	●	●
SC	●			●	●			●
SD	●	●	●	●	●	●	●	●
UT						●		
WA		●		●	●	●	●	●
WI		●	●	●	●	●	●	●
WY		●				●	●	●

[a] May not include exact SSO location point
[b] May include cleanup activities, volume recovered, and corrective or preventive measures

SSO Data Publication via the Internet

Maryland and Michigan publish CSO and SSO data periodically on the Internet. In Maryland, owners or operators of an SSS must report any SSO that results in a discharge of raw or diluted sewage into the waters of the state to the Maryland Department of the Environment (MDE). This requirement is also applicable to CSOs and wastewater treatment plant bypasses. MDE coordinates reporting requirements with local health departments. Reports must include the volume spilled, duration, start and stop times, name of receiving waters, cause, corrective action taken, and information regarding public notification. CSO and SSO data reported to MDE can be found at http://www.mde.state.md.us/programs/waterprograms/cso_sso.asp.

The Michigan Department of Environmental Quality (MDEQ) has broad statutory and regulatory authority for SSOs under Part 31, Water Resources Protection, and Part 41, Sewerage Systems, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Facilities in Michigan are required to notify MDEQ within 24 hours of when a CSO or SSO discharge begins. After the discharge ends, the facility must submit a complete report, including the location and volume of the discharge as well as the start/end date and time.

MDEQ's CSO and SSO discharge information web page provides specific event information on CSOs and SSOs (http://www.deq.state.mi.us/csosso/). In addition to providing final CSO and SSO reports, MDEQ's website also displays records of recent events for which MDEQ has not yet received a final written report. Recently, MDEQ produced its first *Combined Sewer Overflow (CSO) and Sanitary Sewer Overflow (SSO) Report*, which compiled event information during the period from July 2002 to December 2003. MDEQ expects that subsequent reports will be made available on a calendar-year basis.

7.3 What Programs Have Been Developed to Control SSOs?

Although there is no national regulatory program specific to SSOs, a number of EPA regions and state agencies have initiated efforts to address SSOs. Some agencies require that permittees assess sewer system condition or implement specific O&M practices. Other agencies have implemented programs requiring sewer system owners to obtain NPDES permit coverage, whether or not they operate a wastewater treatment facility. The following descriptions are not intended to be comprehensive, but represent some innovative approaches to addressing SSO issues.

7.3.1 EPA Region 4's MOM Program

EPA Region 4's Management, Operations, and Maintenance (MOM) Program is implemented in cooperation with states in the region. The MOM program encourages all NPDES permit-holders and any associated satellite utilities to participate in a proactive approach to managing, operating, and maintaining their sewer system. Utilities that

implement good MOM Programs benefit by reducing the likelihood of Clean Water Act violations, extending the life of their infrastructure, and providing better customer service through steady rates and greater efficiency. The goal of the MOM Program is to bring 100 percent of the POTWs handling domestic wastewater in Region 4 into compliance with the "proper operation and maintenance" provision of their NPDES permits by 2011.

The Region 4 MOM Program addresses SSO issues in sewer systems (including satellites) by concentrating on high priority watersheds. Region 4 uses a Geographic Information System (GIS) to focus on watersheds categorized as having existing water quality problems or assessed as being vulnerable to stressors (e.g., coastal and shellfish harvesting areas). Based in part on recommendations made by states in the region, Region 4 selects at least one watershed in each state for each cycle of the MOM Program. Region 4 started the second cycle of its MOM Program in September 2003.

In the selected watersheds, the operators of all sewer systems are expected to provide a self-evaluation report to the region. This report identifies improvements that can be made and the schedules necessary to make those improvements. Region 4 encourages participants to conduct the self-evaluation within seven months of receiving the initial requests. To assist participants with the process, Region 4 provides checklists and other outreach information. Depending on the thoroughness of the self-evaluation, Region 4 may conduct follow-up inspections and initiate further discussions regarding the evaluated programs. Where the permittee does not conduct an evaluation, Region 4 conducts its own site inspection. Through voluntary participation in the program and by self-disclosing any needed improvements, participants may be eligible for a reduction in civil penalties while under a remediation schedule.

Region 4 expects participants to develop a plan that addresses the MOM requirements, which the region typically includes in a Letter of Violation (LOV) or an AO. Region 4 recently completed the first round of LOV inspections and found that many MOM Program participants have made significant positive and productive efforts (e.g., increased staff, purchased maintenance equipment, and increased cleaning frequency) toward the development and implementation of their MOM Programs.

7.3.2 Oklahoma – Collection System Program

The Oklahoma Department of Environmental Quality (ODEQ) has actively addressed SSO and sewer system issues for many years through its NPDES program. Program elements include permitting, compliance, enforcement, and education/outreach.

Standard NPDES permit language in Oklahoma requires proper O&M of the sewer system and reporting of bypasses and SSOs. A state construction permit, which is distinct and different from an NPDES permit, is required for all new sewer lines to ensure that the sewer system has

adequate capacity to accommodate the growth. When a request is made to ODEQ to expand an SSS, the capacity of pipes, pumps, and other system components is evaluated by ODEQ design and engineering staff during review of the construction permit. These requirements encourage municipalities to have a program in place to address capacity, management, operation, and maintenance issues in their sewer system.

ODEQ evaluates system performance through compliance evaluation inspections, complaint and fish kill investigations, and database record reviews. Members of the general public can report SSOs by calling an ODEQ overflow hotline; ODEQ investigates all complaints of alleged SSOs. Oklahoma's criterion for significant non-compliance due to SSOs is more than one SSO at the same location in a 12-month period. As of 2003, ODEQ has 60-70 active enforcement orders for SSOs.

ODEQ has maintained an SSO database and tracking system since 1987. Over the last 15 years, the annual number of reported SSO events has decreased by 14 percent, and the number of enforcement orders issued annually has decreased by approximately 25 percent. During this same period, the number of municipalities reporting at least one SSO event has increased by 12 percent. ODEQ attributes the increase in the number of systems reporting SSOs to elevated awareness of SSO issues by the regulated community and the public. ODEQ's education and outreach efforts include operator certification training, ODEQ-sponsored seminars, and staff presentations to municipal leagues, rural water associations, regulated communities, and other affected groups.

7.3.3 California – Record Keeping and Reporting of Events

Some of California's Regional Water Quality Control Boards (RWQCBs) use Waste Discharge Requirements (WDR), a form of discharge permit, to address SSOs. These orders prohibit all discharges of wastewater from a sewer system upstream of a wastewater treatment plant. Priorities in California are to address beach closures linked to SSOs, such as those occurring in Orange County, San Diego, and Los Angeles.

The RWQCB Orders require proper O&M, sewer system management plans, capacity evaluations, and FOG programs. For example, in May 1996, the San Diego RWQCB adopted Order No. 96-04 prohibiting SSOs. This order was adopted as a mechanism to achieve a reduction in the number and volume of SSOs and to protect water quality, the environment, and public health. Order No. 96-04 also brings satellite sewer systems under a regulatory framework. The order regulates 48 cities and special districts in the San Diego area that own and operate SSSs. It also requires a monitoring and reporting program with specific SSO reporting procedures.

In addition, California has a statewide regulation requiring utilities to report SSOs greater than or equal to 1,000 gallons and all SSOs that reach surface waters. Reports must be made within

Advisory and closing signs are posted at beaches throughout Orange County, CA, to alert beachgoers of potential dangers, from elevated bacterial levels.

Photo: OCHA Ocean Water *Protection Program.*

24 hours of becoming aware of the spill and followed up with a written report within five days. The RWQCBs have issued several large penalty orders for SSOs (generally one dollar per gallon spilled).

7.3.4 North Carolina – Collection System Permitting

In 1999, the North Carolina General Assembly ratified HB 1160 (1999 NC Sessions Laws Chapter 329), a bill that requires SSSs to obtain a comprehensive permit separate from the NPDES permit obtained by wastewater treatment facilities. The North Carolina Department of Environment and Natural Resources (NCDENR) administers this permitting program through the Non-Discharge Permitting Branch in coordination with the Enforcement Group. The focus of the NCDENR program is proactive, preventive O&M of sewer systems.

NCDENR collection system permits contain five principal sections: performance standards, O&M, inspections, record keeping, and general conditions. Conditions are included for grease control, planned reinvestment in the SSS through a capital improvement plan, alarms for pump stations, spare parts, inspections, cleaning, mapping, observation, and preventive maintenance. The permits also include public notification and other reporting requirements. NCDENR has provided guidance for reporting SSOs that includes a standardized calculation for estimating the volume of SSOs when they occur.

NCDENR is using a phased approach to permit all SSSs over a five-year period (20 percent/year). This program incorporates a number of older satellite systems that have never been permitted. The first round of permits was issued in 2001. Sewer systems that fail to meet the standard permit conditions may be subject to enforcement action by NCDENR. The 1999 legislation dramatically increased the potential civil penalties that may be assessed against the municipality for unauthorized discharges (G.S. 143-215.6A).

7.4 What Compliance and Enforcement Activities Have Been Undertaken?

The goal of EPA's water compliance and enforcement program is to ensure compliance with the Clean Water Act. EPA's compliance and enforcement program has five major objectives:

- Provide compliance assistance tools and information to the regulated community;
- Identify instances of noncompliance;
- Return violators to compliance;
- Recover any economic advantage obtained by the violator's noncompliance; and
- Deter other regulated facilities from noncompliance.

EPA established "wet weather" (i.e., CSOs, SSOs, storm water, and concentrated animal feeding operations) as a national enforcement priority for FY 2002 and FY 2003.

The compliance and enforcement policies and strategies used to address CSOs and SSOs are discussed in the following subsections. In addition, a summary of related enforcement actions as of October 2003 is presented.

7.4.1 National Municipal Policy on POTWs

EPA's 1984 *National Municipal Policy on Publicly-Owned Treatment Works* (NMP) provided an impetus for control of all discharges from municipal sewer systems, treated or otherwise (EPA 1984b). The NMP encouraged a collaborative effort between EPA and states in addressing compliance with the Clean Water Act at POTWs. The NMP focused EPA's compliance efforts on three types of POTWs: those that had received federal funding and were out of compliance, and all major POTWs, and minor POTWs that discharged to impaired waters. The NMP recommended that each EPA region draft a strategy to bring POTWs into compliance with the Clean Water Act. The NMP was intended to facilitate compliance at all POTWs by July 1, 1988. While the main focus of the NMP was to ensure that POTWs complied with secondary treatment and water-quality based NPDES requirements, many enforcement actions brought under the NMP also addressed improvements to sewer systems.

7.4.2 Enforcement Management System

EPA's national enforcement guidance, *Enforcement Management System*, recommends using a scaled response to noncompliance considering such factors as the nature, frequency, and severity of the violation; potential harm to the environment and public health; and the compliance history of the facility. *Chapter X: Setting Priorities for Addressing Discharges From Separate Sanitary Sewers* includes a list of priorities for dealing with SSOs to ensure that enforcement resources are used in ways that result in maximum environmental and public health benefit (EPA 1996c). The complete text of *Chapter X* is provided in Appendix A. EPA's enforcement response guidelines range from informal actions such as telephone calls or warning letters to formal administrative or civil judicial actions.

7.4.3 Compliance and Enforcement Strategy (2000)

On April 27, 2000, EPA issued the *Compliance and Enforcement Strategy Addressing Combined Sewer Overflows and Sanitary Sewer Overflows* (EPA 2000b). This strategy was designed to ensure that CSO and SSO violations are properly addressed by promoting the enforcement and compliance assistance components of the following:

- CSO Control Policy (EPA 1994a);
- Joint Office of Enforcement and Compliance Assistance/ Office of Water memorandum "Enforcement Efforts Addressing Sanitary Sewer Overflows" (March 7, 1995); and
- Chapter X of the *Enforcement Management System* (EPA 1996c).

The strategy also supports the *Memorandum of Agreement* for EPA's regional office performance expectations, EPA's Clean Water Action Plan, and EPA's Strategic Plan.

The strategy calls for each EPA region to develop compliance and enforcement plans addressing CSOs and SSOs. The plans should include:

- A systematic approach to address wet weather violations through compliance assistance;
- The identification of compliance and enforcement targets; and
- Details on NPDES state participation, including tracking of state CSO and SSO compliance and enforcement activities.

Specifically, the SSO response plan should describe the process and criteria that the region and states use to identify priority systems each year and include an inventory of SSO violations (EPA 2001a). As of August 2003, all regions except Region 4 had developed and begun implementation of their strategies.

7.4.4 Compliance Assistance

EPA has developed a number of tools for tracking and sharing compliance assistance and other information for addressing CSOs and SSOs internally among EPA staff and externally with states, local governments, and others. Several of these tools have specific references and guidance for implementing the NMC; developing an LTCP; and implementing capacity, management, operations, and maintenance (CMOM) and asset management approaches to eliminate or reduce SSOs. Examples include:

Local Government Environmental Assistance Network (LGEAN) – The EPA-sponsored compliance assistance center for local municipal governments provides environmental management, planning, and wet weather regulatory and legislative information for elected and appointed officials, managers, and staff (http://www.lgean.org).

National Environmental Compliance Assistance Clearinghouse – This clearinghouse provides compliance assistance tools, contacts, and other wet weather (including CSO-specific) resources available from EPA as well as other public and private compliance assistance providers (http://www.epa.gov/clearinghouse).

Statistically Valid Non-Compliance Study – EPA's Office of Enforcement and Compliance Assistance (OECA) completed the *Statistically Valid Non-Compliance Study* to assess compliance with NMC requirements. EPA has a goal of ensuring that all CSO communities have an enforceable mechanism requiring implementation of the NMC, are in compliance with those controls, and, if needed, have developed and are implementing an LTCP. Determination of the current compliance rate of CSO communities with the NMC was an EPA priority in

FY 2002. OECA found the national compliance rate with the NMC was 39 percent. OECA plans to repeat the assessment of NMC compliance in FY 2004. The new analysis will also assess the status of CSO communities with respect to development and implementation of LTCPs.

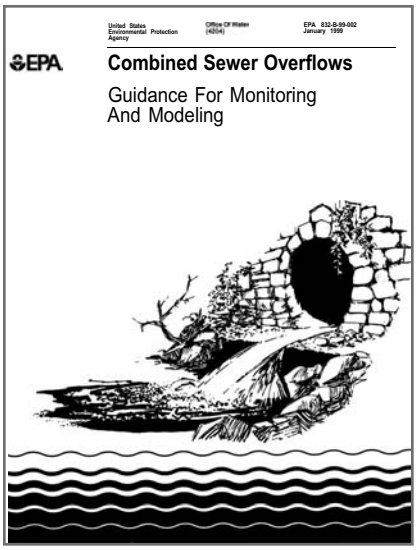
Permit Compliance System – EPA is working to modernize PCS. When complete, this database of NPDES point source dischargers will track information specifically related to CSOs and SSOs.

CSO Implementation Guidance – EPA has released eight guidance documents to assist in implementation of the CSO Control Policy. The eight guidance documents explain technical, financial, and permitting issues related to implementation of the policy and are as follows:

- *Combined Sewer Overflows Guidance for Funding Options* (EPA 1995a)
- *Combined Sewer Overflows Guidance for Long-Term Control Plans* (EPA 1995b)
- *Combined Sewer Overflows Guidance for Nine Minimum Control Measures* (EPA 1995c)
- *Combined Sewer Overflows Guidance for Permit Writers* (EPA 1995d)
- *Combined Sewer Overflows Screening and Ranking Guidance* (EPA 1995e)
- *Combined Sewer Overflows Guidance for Financial Capability Assessment and Schedule Development* (EPA 1997c)
- *Combined Sewer Overflows Guidance for Monitoring and Modeling* (EPA 1999e)
- *Guidance: Coordinating Combined Sewer Overflow (CSO) Long-Term Planning with Water Quality Standards Reviews* (EPA 2001b)

7.4.5 Summary of Enforcement Activities

Federal and state enforcement actions concluded against municipalities for CSO- and SSO-related violations are summarized below. Individual enforcement actions are listed in Appendix K.



Summary of Federal Judicial Actions

Thirty-six federal judicial enforcement actions have been concluded against municipalities in Regions 1-5 as a result of CSO violations. The relevant state served as a co-plaintiff with the EPA region in most cases. Since 1995, 26 judicial actions have been brought against municipalities in Regions 1-6 and Region 9 for SSO violations. As in the CSO judicial actions, many of the SSO actions were initiated by the EPA region in cooperation with the state.

Summary of Federal Administrative Actions

Sixty Federal AOs have been issued for CSO violations in Regions 1, 3, and 5 since 1987. Two CSO Administrative Penalty Orders (APOs) were issued to municipalities in Massachusetts. Between 1994 and 2003, 78 AOs were issued to municipalities in Regions 1-7 and Region 10 for SSO violations. Twelve SSO APOs were issued during the same period.

Summary of State Judicial Actions

EPA's review of available state-initiated CSO enforcement cases yielded 16 CSO civil judicial actions. EPA's review of available state-initiated enforcement cases found six judicial actions against municipalities for SSO violations.

Summary of State Administrative Actions

A number of states have initiated administrative enforcement actions to address CSO violations. A list of 53 state-initiated administrative actions for CSO violations is included in Appendix K. EPA's review of available state-initiated enforcement cases found 597 administrative actions against municipalities for SSO violations. In addition, EPA identified 18 CSO administrative penalty orders and 137 SSO administrative penalty orders issued by states.