

Chapter 5

CSO Control Policy Implementation Status: NPDES Authorities and Other State Programs

EPA's 1994 CSO Control Policy assigns primary responsibility for its implementation and enforcement to NPDES authorities and water quality standards authorities. The major provisions of the CSO Control Policy are as follows:

NPDES authorities will issue/reissue or modify permits, as appropriate, to require compliance with the technology-based and water quality-based requirements of the CWA... ..NPDES authorities should ensure the implementation of the minimum technology-based controls and incorporate a schedule into an appropriate enforceable mechanism ...

The water quality standards authorities will help ensure that development of the CSO permittees' long-term control plans are coordinated with that review and possible revision of water quality standards ...

NPDES authorities include both permitting and enforcement staff, the

distinct roles of which are outlined in the CSO Control Policy and detailed in Table 5.1. NPDES authorities are usually state environmental agencies, but are EPA regional offices where states have not obtained the authority to issue and enforce NPDES permits.

State water quality standards authorities are responsible for adopting, reviewing, and revising water quality standards. The specific role of the state water quality standards authority, as defined by the CSO Control Policy, is described in Table 5.1.

As shown in Table 5.2, 32 states (including the District of Columbia) have CSO permittees in their jurisdiction. State agencies are the NPDES authority in 28 of these states. Programs in Alaska, the District of Columbia, Massachusetts, and New Hampshire are administered by EPA regional offices.

States and territories without CSO permittees within their jurisdiction, as certified by the state and confirmed by

In this chapter:

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- 5.1 Policy Development and Support

 - 5.2 NPDES Permitting

 - 5.3 Water Quality Standards

 - 5.4 Compliance and Enforcement

 - 5.5 Guidance, Training and Compliance and Technical Assistance

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Table 5.1

Roles and Responsibilities

The CSO Control Policy describes specific expectations for NPDES permitting and enforcement authorities, and state water quality standards authorities in developing and implementing CSO controls that meet CWA objectives and requirements.

NPDES Permitting	NPDES Enforcement	State WQS Authority
<ul style="list-style-type: none"> ● Reassess/revise CSO permitting strategy ● Incorporate CSO-conditions (e.g., NMC and LTCP) ● Review documentation of NMC implementation ● Coordinate review of LTCP components throughout LTCP development process and accept/approve permittee's LTCP ● Coordinate review and revision of water quality standards, as appropriate ● Incorporate implementation schedule into an appropriate enforceable mechanism ● Review implementation activity report 	<ul style="list-style-type: none"> ● Monitor compliance with January 1, 1997 deadline for NMC implementation and documentation ● Take appropriate enforcement actions against dry weather overflows ● Monitor compliance with permit requirements ● Ensure CSO requirements and schedules for compliance are incorporated into appropriate enforceable mechanisms ● Incorporate implementation schedules longer than three years in a judicial court order 	<ul style="list-style-type: none"> ● Review water quality standards in CSO-impacted receiving water bodies ● Coordinate review with LTCP development to ensure long-term controls will be sufficient to meet water quality standards ● Revise water quality standards as appropriate, subject to EPA approval

Source: Combined Sewer Overflow Guidance for Long-Term Control Plan

the EPA regional office, are listed in Table 5.3.

As of June 2001, the 32 states with combined sewer systems hold a total of 859 CSO permits. The permits authorize discharges from 9,471 CSO outfalls. The numbers of CSO permits and permitted outfalls in each state are shown in Figure 5.1 and Figure 5.2, respectively. Historically, the reported number of CSO permits nationwide has varied from fewer than 900 to more than 1,500. Similarly, the reported number of CSO outfalls has ranged from fewer than 9,000 to approximately 15,000. Comparisons of historic CSO permits and outfalls estimates with those developed for this report are inappropriate due to improvements in the quality of information available on CSSs and changes in the way they are permitted. For example, since the issuance of the 1989 National CSO Control Strategy,

the number of CSO permits has declined steadily as states have undertaken efforts to better identify CSSs. A number of permits were reclassified when system characterizations revealed "leaky" sanitary systems, rather than combined sewers. Conversely, recent decisions by NPDES authorities have increased the number of CSO permits in some states (e.g., Pennsylvania, New Jersey) through the issuance of general permits to communities with CSSs and CSO outfalls, but without treatment plants. Previously, these collection systems often received permit coverage through the facility treating its wastewater. Collection systems with no associated POTW are often referred to as "satellite collection systems."

This chapter documents how NPDES authorities and state water quality standards authorities have

implemented and enforced the CSO Control Policy. Areas addressed include:

- Pre-policy CSO strategies developed by NPDES authorities in response to the 1989 National CSO Control Strategy.
- Efforts of NPDES authorities to meet the requirements of the CSO Control Policy.
- Enforcement and compliance strategies being applied to ensure

compliance with the CWA as soon as practicable.

- Compliance assistance activities by states to help local governments comply with CSO requirements.
- Information management systems and techniques developed to facilitate CSO Control Policy implementation.
- Mechanisms for internal and external communication and participation in CSO Control Policy implementation.

Region	State	Permitting Authority
1	Connecticut	Connecticut Department of Environmental Protection
	Maine	Maine Department of Environmental Protection
	Massachusetts	EPA Region 1
	New Hampshire	EPA Region 1
	Rhode Island	Rhode Island Department of Environmental Management
	Vermont	Vermont Department of Environmental Conservation
2	New Jersey	New Jersey Department of Environmental Protection
	New York	New York State Department of Environmental Conservation
3	Delaware	Delaware Department of Natural Resources and Env. Control
	Maryland	Maryland Department of the Environment
	Pennsylvania	Pennsylvania Department of Environmental Protection
	Virginia	Virginia Department of Environmental Quality
	West Virginia	West Virginia Department of Environmental Protection
	Dist. of Columbia	EPA Region 3
4	Georgia	Georgia Department of Natural Resources
	Kentucky	Kentucky Department for Environmental Protection
	Tennessee	Tennessee Department of Environment and Conservation
5	Illinois	Illinois Environmental Protection Agency
	Indiana	Indiana Department of Environmental Management
	Michigan	Michigan Department of Environmental Quality
	Minnesota	Minnesota Pollution Control Agency
	Ohio	Ohio Environmental Protection Agency
	Wisconsin	Wisconsin Department of Natural Resources
7	Iowa	Iowa Department of Natural Resources
	Kansas	Kansas Department of Health and Environment
	Missouri	Missouri Department of Natural Resources
	Nebraska	Nebraska Department of Environmental Quality
8	South Dakota	South Dakota Department of Environment and Natural Resources
9	California	California State Water Resources Control Board
10	Alaska	EPA Region 10
	Oregon	Oregon Department of Environmental Quality
	Washington	Washington Department of Ecology

Table 5.2

States With CSO Permits

As of 2001, 32 states (including the District of Columbia) have CSO permits.

- Measures of environmental impacts and benefits of the CSO Control Policy.
- Funding mechanisms for CSO program implementation.

by-case basis (e.g., Wisconsin—Milwaukee, New York—New York City). As described in Chapter 2, however, the National CSO Control Strategy prompted many NPDES authorities to initiate CSO control activities.

5.1 Policy Development and Support

Prior to the issuance of the National CSO Control Strategy, some states (e.g., Illinois, Ohio, and Washington) developed state strategies or regulations requiring CSO planning and abatement in varying degrees. Other states implemented requirements for CSO control through administrative orders (e.g., Tennessee) or through enforcement mechanisms on a case-

5.1.1 Efforts to Adhere to the 1989 National CSO Control Strategy

The National CSO Control Strategy contained some elements that originated in existing state programs, including the suggestion, drawn from Illinois' six minimum measures, that NPDES authorities consider requiring BMPs to be applied as BAT on a BPI basis. Furthermore, the National CSO Control Strategy urged states to develop a CSO permitting strategy or certify that no combined sewer

Table 5.3

States With No CSO Permits

As of 2001, 19 states, the Commonwealth of Puerto Rico, Tribal Nations, and two territories report having no active CSO outfalls. Each state or tribal agency has certified this assessment, either verbally or in writing, to its EPA Region.

Region	State/Territory	Notes
2	Puerto Rico US Virgin Islands	No CSOs per Region's verbal certification. No CSOs per Region's verbal certification.
4	Alabama Florida Mississippi North Carolina South Carolina	September 1988 letter certifying no known CSOs. October 1992 letter noting elimination of Florida's last CSO. September 1988 letter certifying no known CSOs. October 1988 letter certifying no known CSOs. October 1990 letter certifying no known CSOs.
6	Arkansas Louisiana New Mexico Oklahoma Texas	September 1989 letter noting elimination of Arkansas' last CSO. October 1989 letter certifying no known CSOs. August 1989 letter certifying no known CSOs. September 1989 letter certifying no known CSOs. August 1988 letter certifying no known CSOs.
8	Colorado Montana North Dakota Utah Wyoming	Region verbally certified elimination of Colorado's last CSO. November 1990 letter certifying no known CSOs. November 1990 letter certifying no known CSOs. November 1990 letter certifying no known CSOs. November 1990 letter certifying no active CSOs.
9	Arizona Hawaii Nevada Pacific Islands Tribal Nations	October 1990 letter certifying no known CSOs. October 1990 letter certifying no known CSOs. Verbally certified no known CSOs to Region on October 1990. No CSOs per Region's verbal certification. No CSOs per Region's verbal certification.
10	Idaho	September 1990 letter certifying no active CSOs.

Figure 5.1

Distribution of CSO Permits by Region and State

CSOs are found throughout the United States, but are most heavily concentrated in the Northeast and Great Lakes regions.

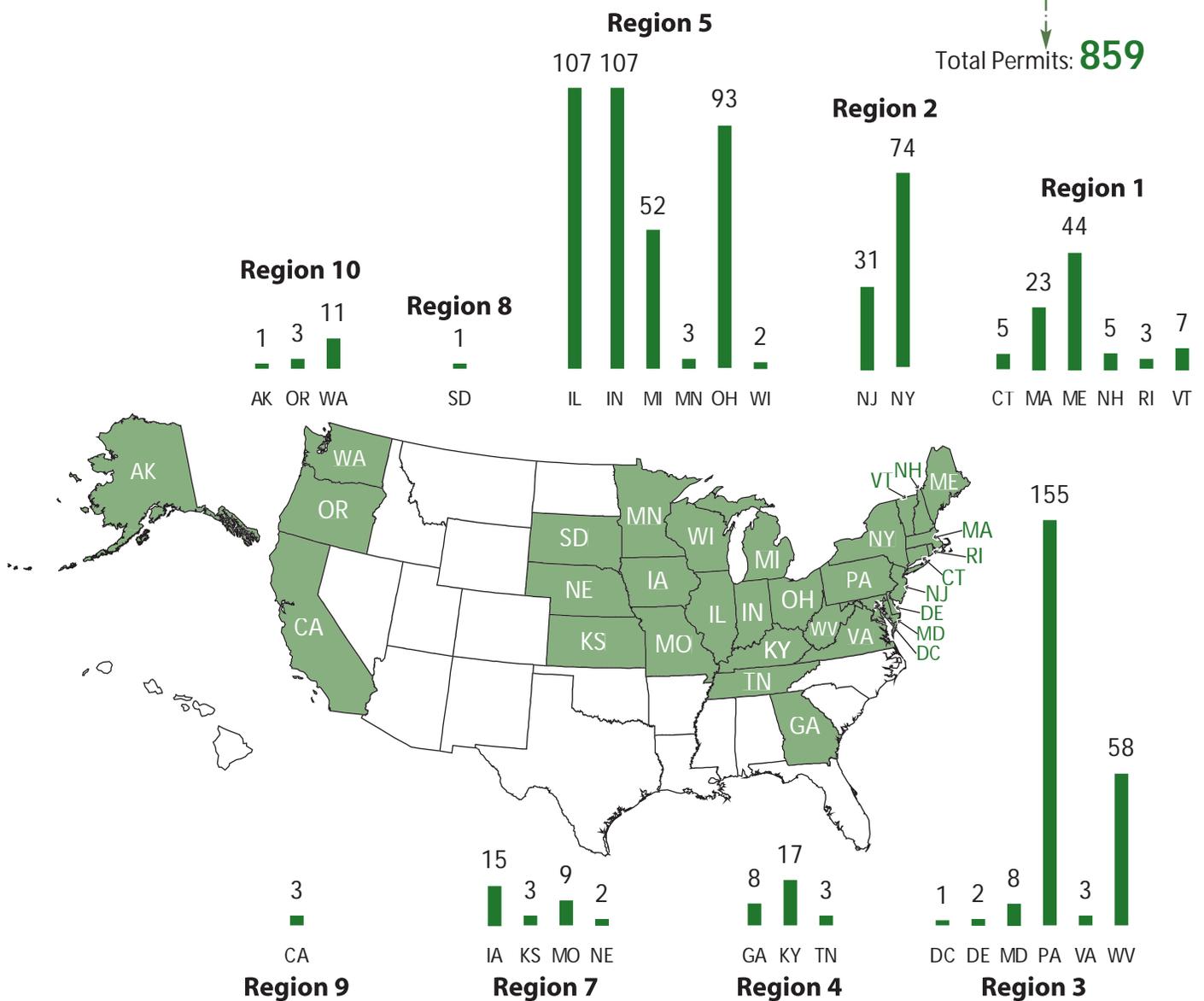
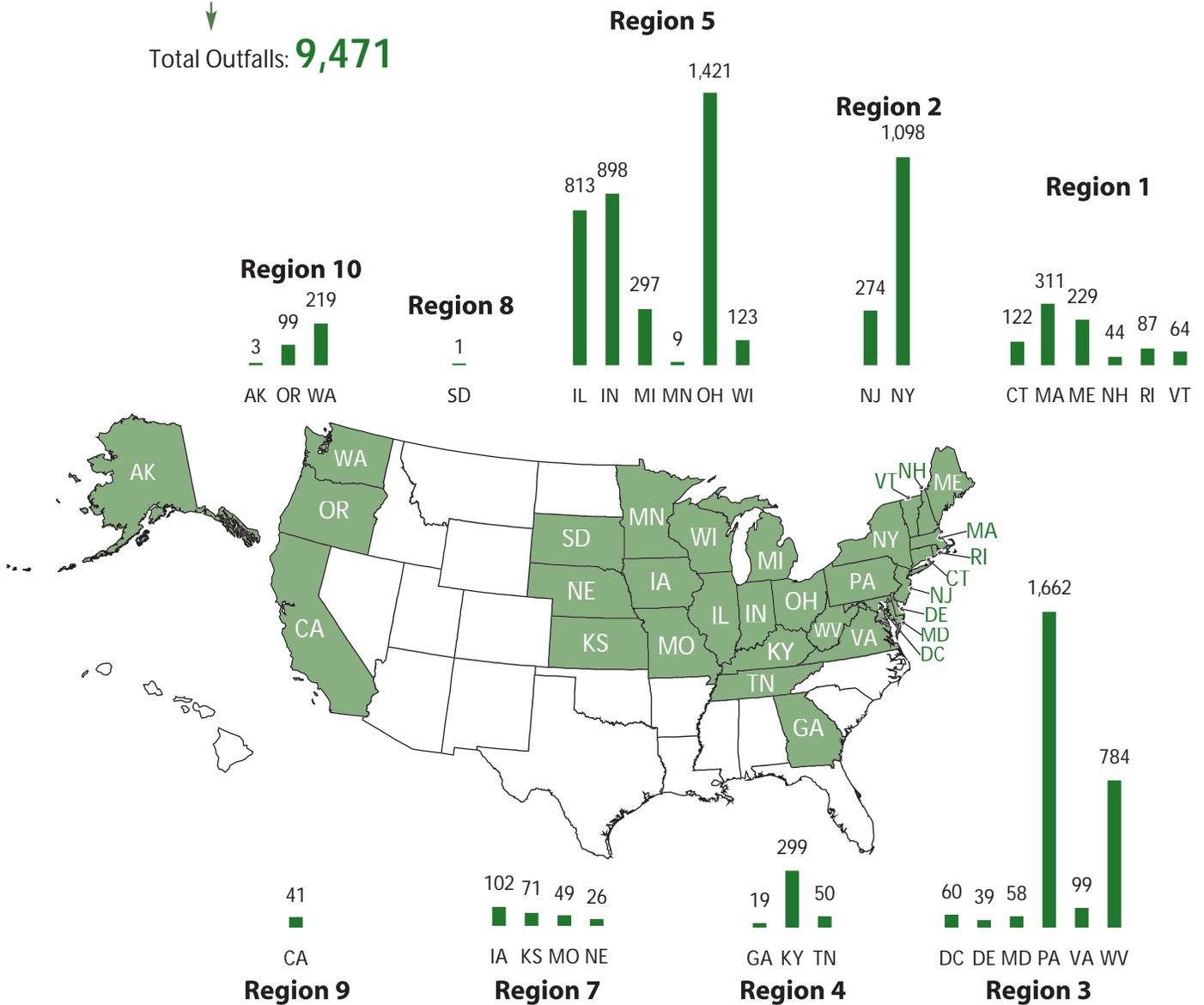


Figure 5.2

Distribution of CSO Outfalls by Region and State

Similar to the distribution of CSO permits, CSO outfalls are also concentrated in the Northeast and Great Lakes regions.

Total Outfalls: **9,471**



systems operated within their boundaries by 1990. The overall goal for the CSO permitting strategies was compliance with the CWA. The strategies included provisions to eliminate dry weather overflows and to minimize the impacts of CSOs.

A majority of states with CSO permits (20 of 32) developed CSO strategies by the 1990 deadline. Those states submitting strategies after the deadline tended to be states with large numbers of CSO communities (e.g., Indiana, New York, Pennsylvania, and West Virginia). All permitting authorities, except New York, had strategies in place by 1991. New York finalized its strategy in 1993.

CSO strategies ranged from detailed documents discussing statewide approaches for implementation of CSO controls within the NPDES program framework (e.g., Maine, Michigan, and Oregon), to lists of current CSO permits noting how each was or would be addressed (e.g., Alaska, Minnesota, and Wisconsin). Typically, the latter approach was reserved for NPDES authorities with few CSO permits.

Just as CSO strategies varied from state to state, so did procedures for strategy implementation. Implementation procedures typically added CSO strategy elements to reissued permits or included CSO strategies as part of a state regulation or code.

CSO strategy requirements were added to NPDES permits as early as 1990 (Illinois) and as recently as 1999 (Connecticut). Notably, most NPDES

authorities did not complete a full five-year permit cycle between the issuance of its own CSO strategy and 1994, when the CSO Control Policy was published. This means that NPDES authorities would not necessarily have added CSO requirements from its strategy in all CSO permits before the CSO Control Policy was issued.

5.1.2 Efforts to Adhere to the 1994 CSO Control Policy

As described in Chapter 2, the CSO Control Policy defined roles for and provided guidance to NPDES authorities, water quality standards authorities, and CSO communities on the selection and implementation of CSO controls. Specifically, the CSO Control Policy expected that NPDES authorities would:

- Review and revise, as appropriate, state CSO permitting strategies developed in response to the National CSO Control Strategy.
- Develop and issue permits requiring CSO communities to immediately implement the NMC and document implementation, and to develop and comply with an LTCP.
- Promote coordination among the CSO community, the state water quality standards authority, and the general public during LTCP development and implementation.
- Consider evaluating water pollution control needs on a watershed basis, and coordinate CSO control with the control of

other point and nonpoint sources of pollution.

- Recognize the difficulty for some small communities in meeting the formal elements of LTCP development, and that compliance with the NMC and a reduced scope LTCP may be sufficient.
- Consider sensitive areas, use impairment, and the permit holder's financial capability in the review and approval of implementation schedules.

NPDES authorities generally took one of four approaches in responding to the CSO Control Policy:

- **Revised existing CSO strategy to match CSO Control Policy requirements.** NPDES authorities revised their existing CSO strategies, adding elements to their permitting approach to match components of the CSO Control Policy.
- **Continued implementation of existing CSO strategy.** NPDES authorities did not respond immediately to the CSO Control Policy, but continued to implement existing CSO strategies while determining if or how to incorporate components of the CSO Control Policy into their permitting programs.
- **Adopted approach with requirements beyond or outside CSO Control Policy.** NPDES authorities continued to use existing strategies or developed new strategies advocating

approaches beyond or outside the context of the CSO Control Policy.

- **Developed CSO control programs on a site-specific basis.** This approach was generally used by NPDES authorities with fewer than five CSO permits within their jurisdiction. These authorities typically worked with the CSO communities to develop site-specific CSO control programs, incorporating elements of the CSO Control Policy as applicable.

A profile of each state, including the NPDES authority's approach to regulating CSOs, is provided in Appendix B.

Revised Existing CSO Strategy to Match CSO Control Policy Requirements

The following NPDES authorities revised existing strategies to be consistent with the CSO Control Policy:

- Region 1 in Massachusetts
- Region 1 in New Hampshire
- Connecticut
- Georgia
- Indiana
- Kentucky
- Maine
- Maryland
- Missouri

- Ohio
- West Virginia

These NPDES authorities updated procedures to add components contained in the CSO Control Policy. In general, changes were made to CSO permits during renewal. Typically, permits were not re-opened to include new provisions. In addition, these NPDES authorities often steered the CSO program by advocating a preferred approach for CSO control, such as sewer separation or transportation of wet weather flows to a POTW for minimum required treatment. NPDES authorities' interpretations of NMC and LTCP requirements are discussed in more detail in Section 5.4 of this report.

Continued Implementation of Existing CSO Strategy

Some NPDES authorities implementing CSO control programs or strategies prior to issuance of the 1994 CSO Control Policy chose to continue implementation of the existing programs while evaluating how or if to include the provisions of the CSO Control Policy. NPDES authorities using this approach included:

- Illinois
- Iowa
- Michigan
- Vermont

Two of these NPDES authorities (Michigan and Illinois) adjusted programs to include select elements of the CSO Control Policy, while another

(Vermont) believed its existing approach to be adequate. One NPDES authority (Iowa) assigned a low priority to CSOs, given the limited numbers of CSOs and other competing program priorities, including urban storm water and agricultural runoff. Examples of this range include:

- Illinois began implementing one of the nation's first CSO control programs in 1985. Its state CSO policy contained many guiding principles identified in the National CSO Control Strategy, including a state-defined presumption approach. By the time of the 1994 CSO Control Policy, Illinois was nearly 10 years into the implementation of its state policy. In response to the CSO Control Policy, Illinois incorporated requirements for the three additional BMPs into permits so that CSO permits would comply with the NMC requirements. Since all Illinois CSO communities had been required to meet state CSO treatment requirements, no provisions were made to require LTCP development, unless post-construction compliance monitoring determined the need for additional CSO controls. Prior CSO control infrastructure planning may have been included in municipal or facility plans.
- Vermont's 1990 CSO strategy advocated sewer separation and required four BMPs for optimizing the performance of combined sewer systems. The Vermont strategy also required



Chicago had one of the nation's earliest large-scale CSO control programs. As of 2001, Chicago's Tunnel and Reservoir Project (TARP) has cumulatively captured 565 billion gallons of combined sewage that would otherwise have flowed to area receiving waters.

Photo: Metropolitan Water Reclamation District of Greater Chicago

that an administrative order (AO) be issued to CSO communities that opted not to pursue sewer separation. The AO required such communities to identify control options and funding needs. Vermont provided state grants and interest-free loans to facilitate and accelerate CSO planning and projects. Rather than changing its approach to align with the CSO Control Policy, Vermont continued implementation of its 1990 CSO strategy. To date, 20 of 27 original CSO communities have completed their sewer separation projects and are no longer considered by the state to be CSSs.

- Iowa's 1990 CSO strategy met the requirements of the National CSO Control Strategy and identified several additional components requiring:
 - An inventory of all CSO discharge points.
 - An evaluation of current water quality standards and stream use designations and technology-based limitations for wet weather CSO water quality impacts.
 - A state rule-making process for implementing and enforcing the strategy.
 - A process for including the provisions in the strategy in the NPDES permitting process.

Given the limited number of CSO permits and other priorities in its state

water program, Iowa took a wait-and-see approach to determine if the CSO Control Policy would be revised before revising its state strategy. In 2001, Iowa began including NMC and LTCP requirements in reissued CSO permits, for communities not proceeding with separation.

Adopted Approach With Requirements Beyond or Outside CSO Control Policy

Some NPDES authorities developed and implemented programs with notable variation on the measures outlined in the CSO Control Policy. NPDES authorities using this approach included:

- New Jersey
- New York
- Pennsylvania
- Washington

Permitting authorities often developed approaches based on priorities for wastewater pollution control as related to CSOs (e.g., New York), the desire to emphasize abatement of specific pollutants associated with CSO discharges (e.g., New Jersey), the need or desire to be more proscriptive at a state level (e.g., Pennsylvania, Washington), or the decision to integrate CSO controls within a watershed management approach. Examples include:

- New York uses its Environmental Benefit Permit Strategy (EBPS) to establish priorities for reissuing permits based on the environmental benefits to be

gained by modifying the permit, rather than reviewing permits in chronological order. Under the EBPS, permits receive a numerical score for each of 15 factors applicable to that particular permit. Two factors are specific to CSO control: permit requirements to implement the 15 BMPs, and permit requirements to develop and submit an LTCP. New York's goal is to revise the top 10 percent of state-issued NPDES permits based on the priority ranking list each year.

- Under the New Jersey Sewerage Infrastructure Improvement Act (enacted in 1988), the state initiated a program that, in part, provides planning and design grants for the development and implementation of solids and floatables control measures, and for the identification and elimination of dry weather overflows. Communities with CSO discharges are required to capture, remove, and properly dispose of all solid and floatable materials from CSO discharges that would have been captured with a 1/2-inch bar screen. All CSO points must be controlled.
- Pennsylvania's strategy identifies two requirements for CSO permits prior to the implementation of the NMC and development of an LTCP: a system inventory characterization report (identifying all outfalls, providing engineering drawings of the outfall structures, and determining if outfalls discharge to sensitive waters); and a system

hydraulic characterization report (containing a detailed analysis of the hydraulic capacity of the system and a statistical analysis of area precipitation data related to overflow events). While these components are typical of the NMC and LTCPs, Pennsylvania considers the reports prerequisites to the development and implementation of CSO controls.

- In 1987, Washington State codified (State Code 173-245 WAC) its approach of reducing CSO discharges to no more than one untreated event per average year, including implementation of several BMPs and development of a CSO facilities reduction plan. Washington asserted that the components of its state program met or exceeded the CSO Control Policy in all areas except public participation. Washington now requires increased public participation in CSO planning and includes such provisions through permit conditions upon reissuance.

Developed CSO Control Programs on a Site-Specific Basis

In response to the National CSO Control Strategy, NPDES authorities with fewer than five CSO permits typically submitted a list of the CSO permits, noting how each was or would be addressed. With the issuance of the CSO Control Policy, these NPDES authorities incorporated elements of the Policy into site-specific programs, as appropriate. NPDES authorities using this approach included:



New Jersey provides CSO communities with planning and design grants for solids and floatables control measures, such as nets like the system used in North Bergen.

Photo: NJ Department of Environmental Protection

- Region 3 (District of Columbia)
- Region 10 in Alaska
- California
- Delaware
- Kansas
- Minnesota
- Nebraska
- Oregon
- Rhode Island
- South Dakota
- Tennessee
- Virginia
- Wisconsin

Some NPDES authorities (California, Delaware, District of Columbia, Kansas, Oregon, Rhode Island, South Dakota, Tennessee, Virginia) adjusted permits to include elements of the CSO Control Policy in one or more of its CSO permits. Nebraska has not implemented the CSO Control Policy. Some NPDES authorities (Alaska, Minnesota, Wisconsin) indicated that their CSO communities had implemented CSO control plans that rendered changes to permits in response to the CSO Control Policy unnecessary.

A variable and evolving set of CSO controls resulted from these different approaches and schedules, which were incorporated into permits as the permits were reissued. This variability is discussed further in Section 5.2.

5.2 NPDES Permitting

As discussed in Chapter 2 of this report, CSOs are point source discharges subject to NPDES permit requirements, including both technology-based and water quality-based requirements of the CWA. The CSO Control Policy specifically expects NPDES authorities should, at a minimum, include requirements in CSO permits for the following:

...demonstration of implementation of the nine minimum controls and development of the long-term control plan ...

... implementation of a long-term CSO control plan ...

As of June 2001, 859 CSO permits for CSSs regulated discharges from 9,471 CSO outfalls. Each of the 859 permits contained a site-specific list of CSO outfalls. In addition, most NPDES authorities have imposed requirements for, or initiated action resulting in, implementation of CSO controls:

- 94 percent of CSO permits include enforceable requirements to implement low-cost BMP measures to mitigate CSO-related impacts.
- 82 percent of CSO permits include an enforceable requirement to develop a CSO facilities plan outlining more capital intensive plans for CSO control.

Further, the requirements for CSO control employed by the majority of NPDES authorities are similar to those

outlined in the CSO Control Policy. Specifically:

- 86 percent of CSO permits include enforceable requirements to implement the NMC, or analogous BMP measures.
- 65 percent of CSO permits include an enforceable requirement to develop an LTCP.

This section describes individual approaches taken by NPDES authorities for CSO control, and compares these approaches with the NMC and LTCP elements described in the CSO Control Policy. In addition, Appendix B contains profiles of each state, including information on the permitting, enforcement, compliance assistance (where noted), and water quality standards programs in each state.

5.2.1 Permit Requirements for NMC

Implementation Requirements

As shown in Figure 5.3, 807 (94 percent) of the 859 CSO permits have requirements to implement one or more BMPs to mitigate the impacts of CSO discharges. Further, Figure 5.3 shows that 740 of the 807 permits with requirements to implement BMPs are specifically required to

implement the NMC (or a set of BMPs that include or are analogous to the NMC).

Figure 5.3 also shows that of the 52 permits that have no requirements to implement any BMPs:

- 14 permits had committed to full sewer separation prior to the issuance of the CSO Control Policy, and have not been required to implement the NMC.
- 21 permits are expired and have not been reissued since the inception of the CSO Control Policy.
- 17 permits have been reissued since the CSO Control Policy without requirements to implement BMPs to mitigate the impacts of CSOs.

Figure 5.4 provides a state-by-state summary of the number of CSO permits with requirements to implement one or more BMPs, as well highlighting those states with BMP requirements that include or are analogous to the NMC.



Most states require CSO BMPs in permits. Of the NMC, the first six measures are the most widely implemented.

Photo: NJ Department of Environmental Protection

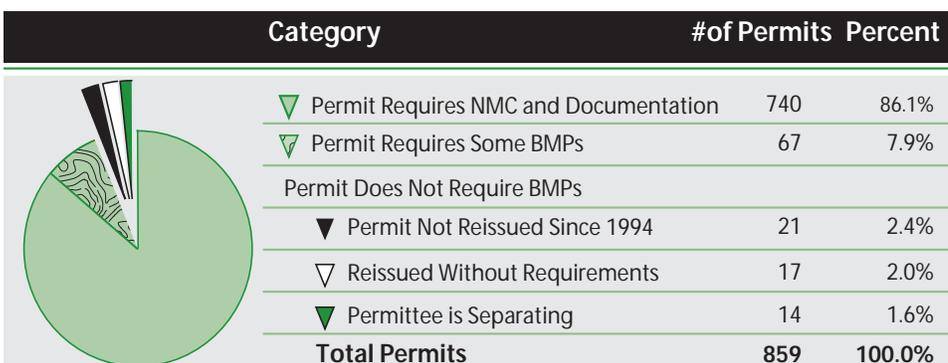


Figure 5.3

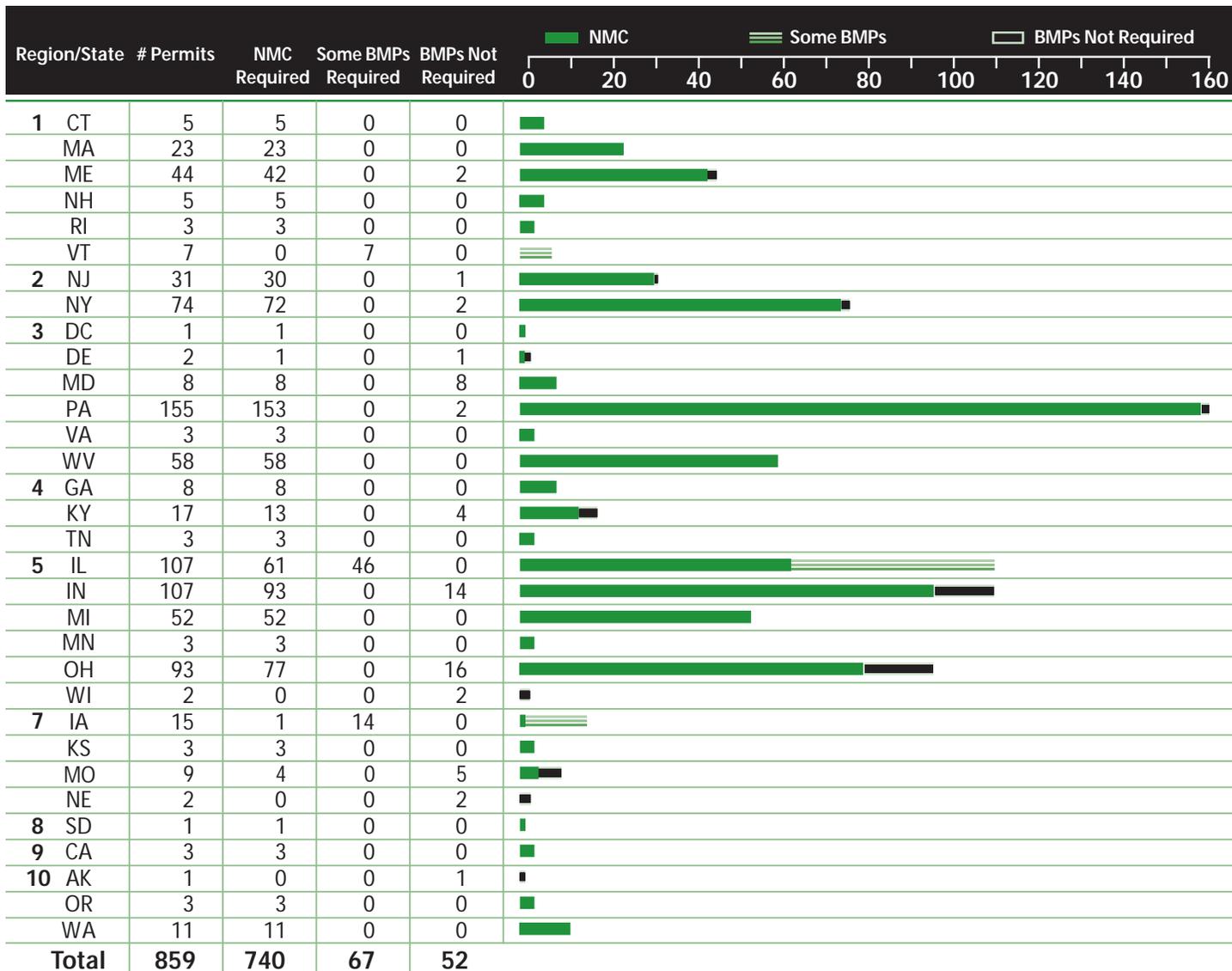
Status of NMC Requirements in CSO Permits

740 of 859 CSO permits have a requirement to implement the NMC. An additional 67 permits have requirements to implement a set of BMPs that are less rigorous than the NMC.

Figure 5.4

CSO Permits With Requirements to Implement the NMC

29 of 32 states require implementation of BMPs in one or more of their CSO permits. States with no BMP requirements account for fewer than 1 percent of CSO permits.



807 of **859** permits have some BMP requirements, including **740** with NMC requirements.

Most NPDES authorities require implementation of BMPs by incorporating appropriate language into permits when reissued. Figure 5.5 shows that NPDES authorities have required implementation of the NMC in 740 of the 859 CSO permits. These requirements are included in 697 permits; 29 require NMC in another enforceable mechanism such as an administrative order. Enforcement actions for NMC requirements are generally the result of a failure to meet a schedule or other requirement prescribed in a permit. For the remaining 14 permits, EPA was unable to determine the mechanism used to require NMC implementation.

NPDES authorities often use discretion to determine the site-specific applicability of each minimum control or best management practice. Specific BMPs may not be required where not applicable or when it is beyond the legal purview of the NPDES authority or the permittee. Examples of this discretion include:

- New Jersey has determined that it cannot legally include requirements to implement the minimum control targeting the review and modification of

pretreatment programs in the majority of CSO permits issued to smaller satellite communities. Wastewater treatment in New Jersey is typically provided by regional wastewater treatment authorities serving smaller satellite communities, and the satellite communities typically do not have jurisdiction for the pretreatment program.

- New York evaluates the applicability of each of its 15 BMPs on a case-by-case basis, and incorporates only those BMPs deemed appropriate into the permit. For example, communities that operate regional wastewater treatment plants handling combined sewage, but that lack responsibility for the collection system, are exempted from implementing a pollution prevention program. Similarly, communities that operate satellite collection systems but that do not own or operate the POTW are not required to develop a WWTP wet weather operating plan.

In cases where the NPDES authority documented a site-specific determination to exclude one or more

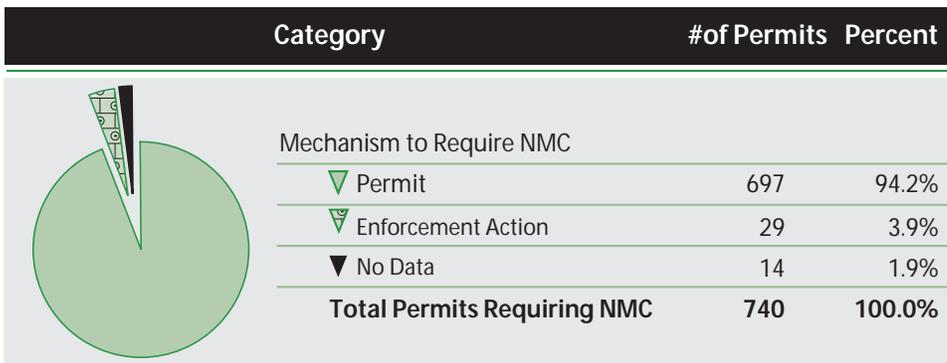


Figure 5.5

Mechanism Used to Require NMC Implementation

The majority of NMC requirements are contained in permits. However, 29 permits have an associated enforcement action requiring implementation of the NMC.

of the NMC from a permit, the permit was still included in the 740 considered to include (or to be analogous to) the NMC.

State CSO Program Status

Most states (29 of 32) have established a suite of BMPs for mitigating the impacts associated with CSO discharges. Specifically:

- 25 states require implementation of the NMC.
- Two states (New York and Washington) require a greater number of BMPs than the NMC.
- Two states (Vermont and Iowa) require a set of BMPs less rigorous than the NMC; Iowa adopted the NMC in early 2001 but has incorporated the requirements in only one permit.

Seventeen states require implementation of the NMC (or an equivalent suite of BMPs) in all CSO permits. The most common reasons given by NPDES authorities for not requiring the NMC in every permit include:

- CSO permits are part of NPDES permit backlog and have not been reissued since the publication of the CSO Control Policy in 1994.
- The community committed to sewer separation prior to the issuance of the CSO Control Policy, and the NPDES authority has not required the community to change its approach.

In three states (Alaska, Nebraska, and Wisconsin), CSO permits lack requirements to implement any of the

NMC. Together, these states account for less than 1 percent of the CSO permits nationwide (5 of 859). In two of these states (Alaska and Wisconsin), the NPDES authority required significant CSO control activities prior to issuance of the CSO Control Policy. The decision not to establish NMC requirements in these states was made because the CSO communities were well into implementation of CSO controls prior to the issuance of the CSO Control Policy. Both of Nebraska's CSO permits are up for renewal in 2001, and the state has indicated that the reissued permits will contain requirements to implement the NMC. Region 10 has also indicated that it will add requirements to implement the NMC in Alaska's lone CSO permit upon reissuance.

5.2.2 Permit Requirements for LTCP

LTCP Development

As shown in Figure 5.5, 718 (82 percent) of the 859 CSO permits include requirements to develop and implement CSO facilities plans to control CSO discharges. Further, Figure 5.6 shows that 559 of the 718 are required to develop and implement CSO facilities plans that are consistent with the LTCP framework outlined in the CSO Control Policy.

Figure 5.6 also shows that of the 141 permits currently lacking requirements to develop and implement a CSO facilities plan:

- 39 permits are expired and have not been reissued since the inception of the CSO Control Policy.

Figure 5.6



Status of Facility Plan Requirements in CSO Permits

718 CSO permits have requirements to develop and implement a CSO facilities plan. Nearly two-thirds of CSO permits require a facility plan consistent with the LTCP framework outlined in the CSO Control Policy.

- 102 permits have been reissued since the CSO Control Policy without requirements to develop a CSO facilities plan.

Most NPDES authorities require LTCP development by incorporating appropriate language into permits at reissuance. Figure 5.7 shows that NPDES authorities have required LTCP development in 559 of the 859 CSO permits. These requirements are included in 457 permits; 102 require LTCP development through another enforceable mechanism such as an administrative order. Enforcement actions generally result from one of two sets of circumstances:

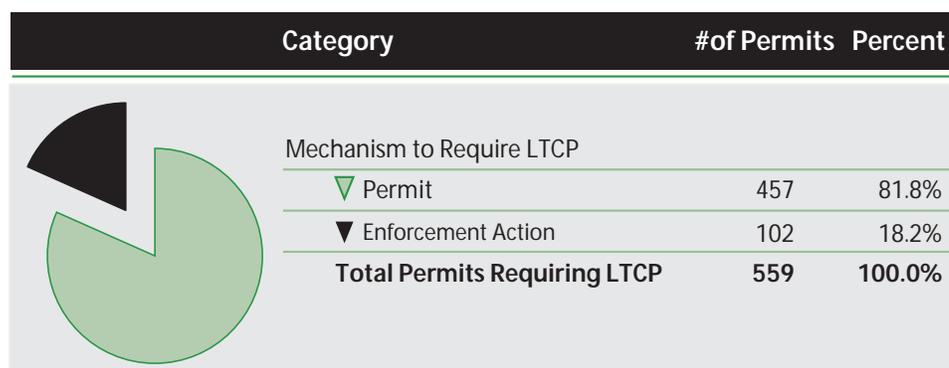
- CSO discharges cause or contribute to an exceedance of applicable water quality standards, and therefore a water quality-

based effluent limit (in this case LTCP requirements) is necessary. If the permittee is unable to immediately comply with the LTCP requirements, an enforcement order is issued concurrently with the permit, including a schedule requiring the development and implementation of an LTCP.

- Failure to meet a compliance schedule or other requirement prescribed in a permit.

The majority of enforcement actions related to LTCP development and implementation are in states where the NPDES authority asserts that all CSO discharges have the reasonable likelihood to cause or contribute to nonattainment of water quality standards. These include Region 1 (the

Figure 5.7



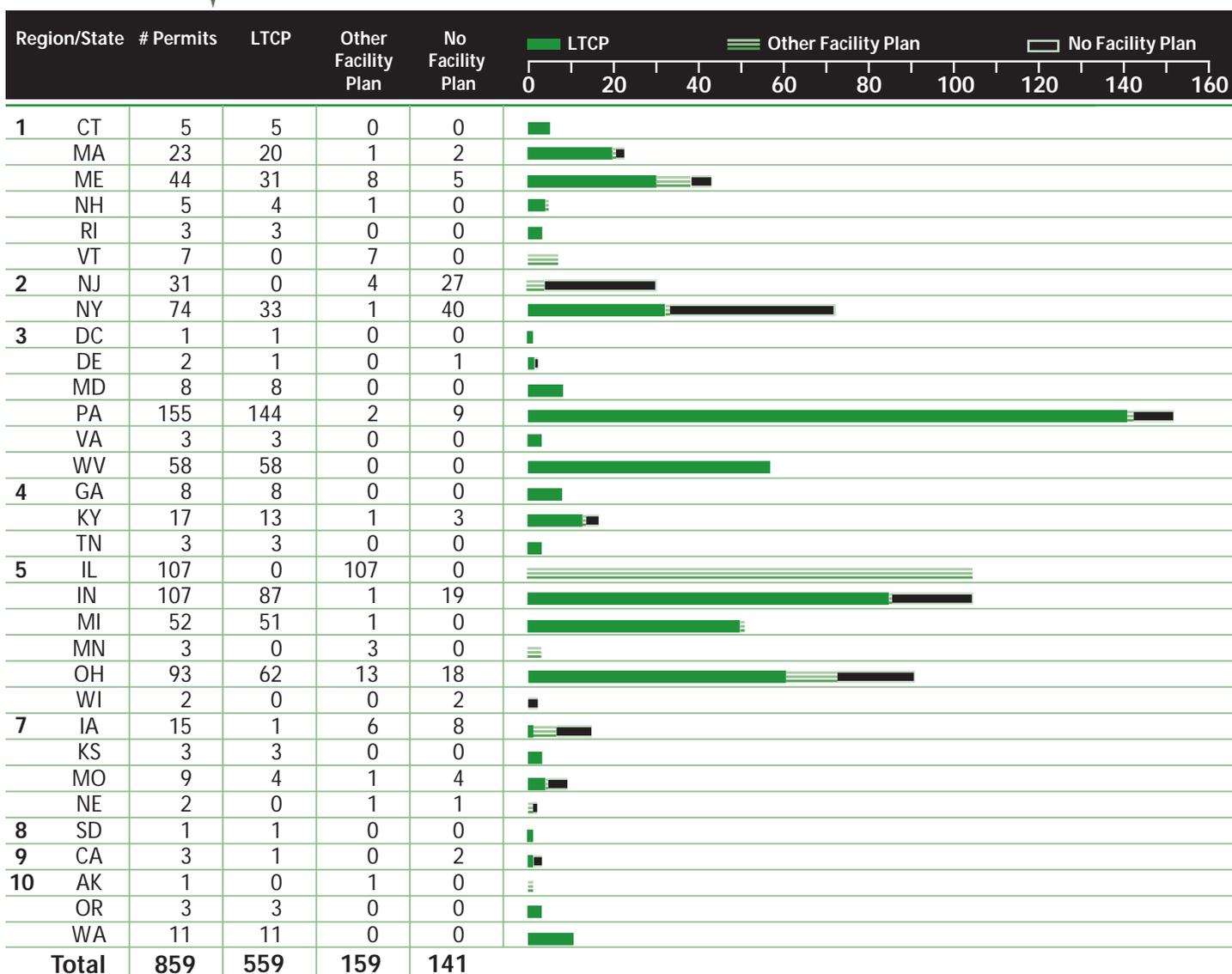
Mechanism Used to Require LTCPs

Most requirements to develop and implement an LTCP are issued in permits, but 18 percent of LTCP requirements are part of an enforcement order. Notably, several states use enforcement orders, rather than permits, to require LTCP development and implementation.

Figure 5.8

CSO Permits With Requirements to Develop and Implement an LTCP

31 of 32 states have a framework for CSO control planning; of these, 25 states have frameworks consistent with the CSO Control Policy.



718 of 859 permits have facility plan requirements, including **559** permits requiring LTCPs.

NPDES authority for Massachusetts and New Hampshire), Vermont, Maine, and Maryland.

Figure 5.8 provides a state-by-state summary of the number of CSO permits with requirements to develop and implement a CSO facilities plan. It highlights states in which requirements for facilities planning are consistent with the LTCP framework outlined in the CSO Control Policy.

State CSO Program Status

Most states (31 of 32) have established a framework for CSO facilities planning to meet the water quality-based requirements of the CWA for CSOs. Of these 31:

- 25 have established a framework that includes the LTCP components outlined in the CSO Control Policy.
- Five (Alaska, Illinois, Minnesota, Vermont, and Wisconsin) require engineering design studies for CSO facilities plans and, often, achieved implementation of significant CSO control prior to issuance of the CSO Control Policy.
- One (New Jersey) is awaiting completion of its TMDL process (i.e., planning on a watershed basis) before implementing additional CSO controls, rendering separate LTCPs unnecessary.
- Only Nebraska has established no framework for CSO facility planning. Both of Nebraska's CSO permits are up for renewal in

2001. The state has indicated that the reissued permits will contain requirements for LTCP development and implementation.

In most of the 25 states requiring LTCPs, formal LTCP requirements mirror the CSO Control Policy and offer two bases for LTCP development (the presumption approach and the demonstration approach). Several states, however, have advocated a preferred approach for CSO control. These approaches include:

- 85 percent capture, by volume, as included in the definition of the presumption approach.
- Transporting all wet weather flows to the POTW for minimum treatment prior to discharge.
- Capacity to provide treatment for flows generated by a specific design storm.
- Sewer separation.

Sixteen states require development and implementation of a CSO facilities plan in all CSO permits. The most common reasons given by NPDES authorities for not requiring LTCP development and implementation in a CSO permit include:

- Long-term CSO control planning efforts are beyond the financial or technical capabilities of small communities.
- CSOs are not a top permitting priority, given a limited number of CSOs and competing programs

such as TMDLs, urban storm water, and agricultural runoff.

- CSO permits are part of the NPDES permit backlog and have not been reissued since issuance of the CSO Control Policy in 1994.

5.3 Water Quality Standards

The CWA provides flexibility to water quality standards authorities to adapt water quality standards to reflect site-specific conditions, including those related to CSOs. Further, the CSO Control Policy anticipates:

... the review and revision, as appropriate, of water quality standards and their implementation procedures when developing CSO control plans to reflect site-specific wet weather impacts of CSOs.

The CSO Control Policy expected that permit writers would promote coordination between permittees and water quality standards authorities during the development of the LTCP. This coordination was expected to facilitate the review of water quality standards and, if appropriate, their revision, based on site-specific impacts of CSOs and the implementation of CSO controls that would ultimately support the attainment of water quality standards.

EPA's water quality standards regulations provide that designated uses can be removed only if a reasonable basis exists for determining that (1) current designated uses cannot be attained after implementing

the technology- and water quality-based controls required by the CWA and (2) that the current designated uses are not existing uses. In determining whether a use is attainable, the regulations require that the state conduct and submit a use attainability analysis (UAA). The UAA is a structured scientific assessment of the physical, chemical, biological, and economic factors affecting the attainment of the use in a water body.

Another option available to states for modifying water quality standards is the adoption of a variance. A variance is a temporary change (generally three to five years, with renewals possible) to the water quality standard. The variance is specific to a discharger for a particular pollutant. The variance does not relieve other dischargers along a common water body segment from any requirement to provide necessary treatment to attain water quality standards. When adopting a variance, the state must determine that:

- The designated use is not an existing use.
- The designated use is not immediately attainable with implementation of the technology-based controls of the Clean Water Act and with reasonable, cost-effective BMPs to control nonpoint sources.
- The designated use is not attainable during the duration of the variance based on any of the factors in 40 CFR 131.10(g)(1)(6).

Since the underlying designated use remains, and further environmental



Sailing in Milwaukee Harbor, WI. During LTCP development the CSO Control Policy expects states and CSO communities to collect data to characterize the receiving water. This data may then be used to support the review of water quality standards.

Photo: EPA

progress can be attained with the implementation of the LTCP, the rigor of the analyses and the level of demonstration used for a variance are generally less than those required for a permanent change in the use. Because a variance is a change in the water quality standards, however, the same requirements apply for a variance as for a new or revised standard (e.g., an opportunity for public review and comment, and EPA approval or disapproval of the variance).

5.3.1 Integrating Water Quality Standards Review with LTCP Development and Implementation

The implementation of CSO controls identified in a well-designed and operated LTCP may lead to the determination that a water body has the potential of supporting improved aquatic life. Under this circumstance, states would upgrade their designated aquatic life use for the water body. Alternatively, implementation of CSO controls may not necessarily ensure the attainment of water quality standards within the CSO receiving water. During LTCP development, the CSO Control Policy expects states and CSO communities to collect data to assess baseline conditions in the receiving water and evaluate the potential effectiveness of any proposed controls in improving water quality and supporting the uses of the water body. If the data show that even with the installed controls, CSOs will continue to contribute to the impairment of water quality standards, the NPDES authority is expected to work with the CSO community to evaluate other CSO control alternatives. If, however,

chemical, physical, or economic factors appear to preclude attainment of the use, the data collected during the LTCP development process may be used to support revisions to water quality standards. Revisions could include adoption of uses that better reflect the water quality that can be achieved with a level of CSO control that does not cause substantial and widespread economic and social impact.

In the seven years since EPA issued the CSO Control Policy, coordination of LTCP development and implementation with water quality standards reviews has not progressed as quickly as expected. Therefore, at the urging of Congress, EPA recently published *Guidance: Coordinating CSO Long-term Planning with Water Quality Standards Reviews* (EPA, 2001c), as discussed in Section 4.5 of this report.

5.3.2 State Approaches for Reviewing Water Quality Standards for CSO Receiving Waters

A few states have developed approaches reconciling their water quality standards with overflows that will remain after the implementation of a well-designed CSO LTCP. Summaries of the actions taken by the states are provided below.

Indiana

All waters in Indiana are designated for full-body contact recreational use and for support of a well-balanced aquatic community. State Senate Enrolled Act (SEA) 431, enacted on March 17, 2000, provides a mechanism whereby CSO

communities may apply for a temporary suspension of designated use, provided the criteria set forth in the statute are met. These criteria include:

- Determining the designated use to be suspended, and the existing use for the water body.
- Identifying all uses and sensitive areas.
- Identifying stakeholders and organizing a citizens' advisory committee.
- Documenting plausible alternatives for CSO control.
- Determining how quickly the CSO community can afford to implement the selected CSO control alternative.
- Developing an implementation schedule.
- Conducting a UAA to demonstrate that attaining the designated use is not feasible due to one of the six factors listed in 40 CFR 131.10(g).
- Committing to periodically reviewing the LTCP to implement cost-effective control alternatives.

The Indiana Department of Environmental Management (IDEM) released a final draft *Combined Sewer Overflow (CSO) Long-Term Control Plan Use Attainability Analysis Guidance* in April 2001 (IDEM, 2001). The guidance is for CSO communities interested in seeking temporary

suspensions under SEA 431 while implementing an LTCP.

Maine

Maine worked with stakeholders to develop modifications of the state's water classification program to allow CSO communities to request a variance that includes temporary CSO subcategories. The site-specific CSO subcategories remove designated uses for short periods of time after wet weather events and snowmelt in areas affected by CSOs. This allows CSO communities to continue to make progress in solving CSO problems without violating state water quality standards. The Maine Legislature enacted the legislation in 1995.

Highlights of the law include:

- CSO subcategories allow for temporary removal of designated but not existing uses impacted by CSOs. Each subcategory includes an area and a time duration. CSO communities submit flow and load data to the state to assist in the determination of subcategory area and duration.
- Prior to applying for CSO subcategories, CSO communities must have approved LTCPs. LTCPs must place a high priority on abatement of CSOs that impact waters with the greatest potential for public use or benefit, and must contain an implementation schedule for CSO abatement. The LTCP will be considered the UAA.
- During, or following, development of the LTCP, the CSO community will conduct public hearings to



Augusta, capital of Maine—one of several states to have developed procedures for coordinating water quality standards reviews with LTCP development. Maine is currently in the process of developing implementation procedures for its process.

Photo: Photodisc

gain input from stakeholders on the areas affected by the variance. If the variance is approved, the CSO community must provide public notice describing limitations on use of the water body.

- Approval of a CSO subcategory does not relieve other dischargers from any requirement to provide necessary treatment to comply with water quality standards.

Maine will periodically review all CSO subcategories. If the CSO community fails to comply with the implementation schedule in its approved LTCP, the variance may be revoked and the state may take enforcement action for permit violations. Maine received a 104(b)(3) grant from EPA in FY 2001 to develop implementation procedures for the 1995 legislation and to pilot test its application.

Massachusetts

Massachusetts amended its water quality standards in 1996 to include a CSO subclassification in its use classification system for receiving waters with substantial numbers of CSO outfalls. The application of a CSO subclassification requires EPA approval of a UAA. Massachusetts uses the UAA to evaluate the attainability of the designated use, particularly whether CSO controls would likely cause substantial and widespread economic and social impact.

For example, the Class B (CSO) subclassification requires that CSO controls be sufficient to meet water quality standards 95 percent of the

time, generally no more than four CSOs per year. A UAA must be developed that demonstrates achieving greater than 95-percent control would cause substantial and widespread economic and social impact. The commonwealth must make the UAA available for public review and comment and receive EPA approval prior to applying the Class B (CSO) subclassification to a particular water body. The standard suspends only the bacteriological criteria; toxic pollutants are not affected.

To date, only the Massachusetts Water Resources Authority (provider of water and sewer services to the greater Boston metropolitan area) has completed a UAA and justified the need for a CSO subclass.

Other State Approaches

- Illinois' existing water quality standards program framework presumes compliance with water quality standards upon the completed implementation of a CSO facility plan that meets the criteria for the state-derived presumption approach.
- Michigan rules allow the use of alternate design flows (i.e., alternate to 7Q10 low flows or 95% exceedance flows) when determining water quality-based requirements for intermittent wet weather discharges such as treated combined sewer overflows.
- New Hampshire has also developed a surface-water partial-use designation called Temporary Partial Use (TPU) or Class B (TPU). A designation of Class B



Massachusetts has developed subclassifications for receiving waters with different numbers of CSO outfalls. Communities must complete a UAA to qualify for a subclassification. To date, only the Metropolitan Water Resources Authority, which serves the Greater Boston area, has completed a UAA.

Photo: Photodisc

(TPU) is made only if the community planning process, watershed planning efforts and a UAA demonstrate that the allowance of minor CSO discharges is the most environmentally protective and cost-effective option available. Furthermore, this designation is only allowed in "non-critical resource areas." Critical areas would include beaches, shellfish habitats, drinking water intakes, and endangered species habitats.

- Four communities in Ohio have requested water quality standards reviews and submitted biological monitoring data as part of their CSO control plans. The state conducted the reviews but made no changes in standards as a result of these reviews.
- Pennsylvania has indicated that it does not currently intend to review water quality standards in conjunction with LTCP development and implementation, but will explore water quality standards reviews in their next triennial review.

5.3.3 State Water Quality Assessment Reports

Urban water quality may be affected by a combination of CSOs, storm water discharges, other point sources and nonpoint source runoff. The CSO Control Policy encourages permitting authorities to:

... evaluate water pollution control needs on a watershed management basis and coordinate CSO control

efforts with other point and nonpoint source control activities.

Section 303(d) of the CWA establishes the TMDL process. The TMDL process provides a mechanism for integrating the management of both the point and nonpoint pollution sources that may contribute to a water body's impairment. In addition, the TMDL process can be used to expedite water quality-based NPDES permitting and can lead to technically sound and legally defensible decisions for attaining and maintaining water quality standards.

Under the authority of Section 303(d), states are expected to develop TMDLs for water quality-limited waters where technology-based effluent limitations or other legally required pollution control mechanisms are not sufficient or stringent enough to implement the applicable water quality standards. As part of this effort, every two years states submit a report to EPA identifying water quality-limited waters still needing TMDLs, including a priority ranking of water bodies. A summary, by state, of the number of water segments impacted by CSOs is included in Appendix N.

5.4 Compliance and Enforcement

5.4.1 Policy

Many states have issued compliance and enforcement policies to coordinate regulatory activities and to inform municipalities of compliance expectations and enforcement consequences. Based on available

information, state CSO compliance and enforcement policies can be grouped into three categories:

- Enforcement policies promulgated by the state.
- Enforcement policies resulting from state participation in the National Environmental Performance Partnership System (NEPPS).
- Enforcement initiatives based on EPA policies.

State-promulgated and state NEPPS-based CSO policies are discussed below.

State-Promulgated CSO Enforcement Policies

Georgia, Indiana, Iowa, New Hampshire, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia each promulgated CSO enforcement policies. The CSO policies of Indiana and Ohio illustrate the range of approaches taken by state CSO enforcement authorities.

- Indiana's Final Combined Sewer Overflow Strategy, issued in 1996, is intended to bring Indiana's CSOs into compliance with the requirements of the CWA and Indiana's goal of all state surface waters meeting water quality standards by 2005. Indiana's Strategy recommends that CSO enforcement activities focus on: enforcement of the dry weather overflow prohibition, CSO permit documentation requirements, and the state's minimum water quality criteria.

- Ohio's 1995 CSO Strategy includes a dry weather overflow prohibition. The Strategy recommends that Notices of Violation (NOV) be issued for occasional dry weather overflows and the use of administrative or judicial actions to eliminate dry weather overflows. Ohio's strategy also suggests several enforcement mechanisms to enforce CSO permits. These include NOV to address violations of interim schedule dates not affecting final deadlines, as well as administrative or judicial actions to address major delays in meeting interim schedule dates.

State CSO Enforcement Policies Based on the NEPPS

The objectives of the NEPPS include:

- Facilitating joint EPA and state planning and priority setting.
- Providing states with greater flexibility with regard to resource allocation.
- Fostering the use of integrated and innovative strategies for addressing natural resource questions.

In order to implement NEPPS, states and their respective EPA regional offices develop a Performance Partnership Agreement (PPA). PPAs are designed to detail joint priorities and methodology for implementation of NEPPS at the state level.

In Alaska, Connecticut, Illinois, Massachusetts, and Wisconsin, state CSO policies grew out of NEPPS



Ohio EPA initiated an enforcement action against the City of Akron in 1995 for violations of the CWA related to CSO discharges to the Cuyahoga River. Akron continues its efforts to implement CSO controls, including storage/conveyance tunnels, sewer separation projects, and detention basins.

Photo: City of Akron Bureau of Engineering Services

agreements with EPA. Examples include:

- The PPA between Connecticut and EPA for FY 2000 and 2001 addresses POTWs and municipal sewerage systems in general, as well as CSOs, and authorizes the state to perform CSO inspections. In the past, NOV's were only issued to POTWs for effluent limit violations. As a result of Connecticut's PPA, however, the state's enforcement program is working to include all permit violations, such as those occurring during sample collection and analyses, record keeping, bypass reporting, and illegal discharges.
- Illinois' FY 2001 PPA with EPA recommends that EPA use a "place-based" approach (e.g., considering greater Chicago as one entity) in directly assisting Illinois. EPA's goal is to ensure that its resources, as well as the state's, are optimized. Toward that end, that PPA recommends that EPA provide direct assistance in the following areas: performance of wet-weather inspections, with emphasis on CSO and SSO inspections; pretreatment POTW seminars; and facilitation of seminars for industrial users.



The State of New York has primary responsibility for inspection of CSO communities, such as New York City. The State has its own inspector training system and uses an inspection tracking system independent of the NPDES PCS data base.

Photo: Photodisc

monitoring reports, routine reviews, or other sources. State-level CSO inspection programs either are wholly state administered or are collaborations between a state and an EPA region, and may be part of an enforcement investigation or the result of an enforcement action (e.g., notice of violation). With the exception of Nebraska, CSO inspections have been conducted in all states with CSO permits. The various state inspection programs are characterized in Appendix O.

State-Administered CSO Inspections

California, Iowa, Kentucky, Michigan, Minnesota, New Jersey, New York, Oregon, South Dakota, Tennessee, Virginia, and Washington have primary responsibility for the administration and implementation of CSO compliance inspection programs. For example:

- New York conducts inspections through its regional offices. New York has its own inspector training program and has a listing of guidance documents in its Technical & Operational Guidance Series (TOGS). TOGS provides users a link to the Integrated Compliance Strategy System, which is the state's plan for dealing with wet weather issues. New York maintains an inspection tracking system independent of PCS. The state uses this system to identify facilities to be inspected and to determine enforcement activities. Although New York participates in quarterly significant non-compliance teleconferences with Region 2, the

5.4.2 State Inspections

States conduct most NPDES inspections. State-initiated CSO inspections of municipal facilities often are part of an overall NPDES compliance inspection (see Section 4.4 of this report). CSO-specific inspections may result from citizen complaints, discrepancies in discharge

state has primary responsibility for CSO inspection and control.

- Iowa is responsible for CSO inspections. Iowa offers inspector training, schedules inspections, and tracks inspection activities in a state matrix. These inspections have not focused on CSOs and compliance with the CSO Control Policy.
- Kentucky has NPDES enforcement authority and conducts regular inspections of NPDES permittees. The inspections have not focused on CSOs and compliance with the CSO Control Policy. Region 4 has assisted Kentucky in some CSO inspections emphasizing compliance with the NMC. The region also visits Kentucky on an annual basis in order to coordinate CSO activities with the state.
- Michigan conducts its NPDES inspections, which include a state-developed evaluation of CSO facilities, through its eight regional offices. CSO data are tracked in regional databases overseen by the state. Michigan is working with Region 5 to expand its CSO inspection program efforts to include federal concerns and ensure a uniform inspection approach throughout the region.

State- and EPA-Administered CSO Inspections

Alaska, Delaware, Georgia, Illinois, Indiana, Kentucky, Maine, Massachusetts, Nebraska, New Hampshire, Ohio, Pennsylvania, Vermont, and West Virginia each have

cooperative agreements with EPA regarding CSO and NPDES inspections. Examples of these types of agreements include:

- Ohio's NPDES inspections follow the procedure recommended in the *NPDES Compliance Inspection Manual* (see Section 4.5.1 of this report). These inspections address CSOs and are conducted annually with Region 5. When resources allow, Ohio and Region 5 undertake joint inspections of NPDES facilities. When Ohio is unable to inspect all identified facilities within the agreed time, Region 5 will administer some inspections. Following an inspection, any follow-up information is entered into a data base Ohio uses to track inspections and compliance activities. Information from these data bases is fed into PCS. Ohio is coordinating with Region 5 to have its inspectors take part in the regional CSO inspector training program.
- Georgia has three CSO communities. One is the City of Atlanta, which is under a consent decree to bring its CSO facilities into compliance with the CWA and the Georgia Water Quality Control Act. Georgia and Region 4 performed joint inspections of the Atlanta CSO facilities and worked cooperatively in developing the federal court-ordered consent decree. Georgia and Region 4 work together to monitor the progress of the consent decree and conduct inspections. Georgia

conducts inspections in its other two CSO communities.

- Indiana, by agreement with Region 5, conducts 75 percent of the state's NPDES inspections at CSO sites and the region conducts the remaining 25 percent. Indiana cooperates closely with Region 5 regarding CSO inspections. Indiana, for example, sends its inspectors to the region for training, uses regional guidance documents and checklists, and participates in teleconferences with the region to discuss cases of significant non-compliance. Indiana also coordinates with Region 5 to determine the components of its CSO inspection checklist.
- Massachusetts meets with Region 1 on a quarterly basis to discuss CSO inspections and the results of those inspections. The state has a PPA with the region under which funds are shared to help Massachusetts keep facilities in compliance with regulations, including the CSO Control Policy.
- Vermont follows EPA guidance about inspections and has a relationship with Region 1 whereby the region conducts inspections when Vermont is unable to do so. Vermont and the region communicate quarterly about major facilities that will be inspected and what the level of inspection should be at each.

CSO Inspections Prompted by Enforcement Activities

State CSO inspections also may occur in response to enforcement activities. CSO inspections in Georgia, Pennsylvania, and Washington have resulted from this process.

5.4.3 CSO Enforcement Activities

For this report, EPA reviewed individual NPDES permit compliance information and performed a Lexis-Nexis search to document state enforcement activities. This process identified 136 state-initiated enforcement actions (primarily administrative actions, such as administrative compliance orders) that include CSO violations. This number is an estimate, as EPA was unable to verify each state action that included CSO violations. Documentation of state CSO enforcement activities was not completed in a uniform manner, so dates for all settlements were unavailable. A summary of available information regarding state-initiated CSO enforcement actions is presented in Appendix P.

Although some states (e.g., Massachusetts) have not initiated administrative or civil judicial actions against CSO violations, they formally join EPA in its actions and/or become involved in the review and approval of LTCPs, water quality standards review, and oversight of implementation of subsequent CSS improvements.

Administrative and Other Enforcement Actions

States enforce CSO compliance in a variety of ways. Water-quality effluent limit violations and failures to meet compliance schedules have been the most common reasons for state-initiated enforcement actions. Based on available information, most states have initiated administrative enforcement actions to address CSO violations. A list of 92 administrative actions is included in Appendix P.

Civil Judicial Actions

EPA's review of available state-initiated CSO enforcement cases revealed one CSO civil judicial action. The case is listed in Appendix P.

Other State Enforcement Actions

Forty-three CSO facilities have been subject to enforcement actions resulting from state actions or joint state-EPA actions. The majority of cases are administrative actions resulting in an administrative order. Summaries of these cases are included in Appendix P.

5.5 Guidance, Training and Compliance and Technical Assistance

Most guidance and compliance assistance documents being used by NPDES authorities and CSO communities have been produced by EPA (see Section 4.2.1). However, some states have produced permit boiler-plate language for CSOs addressing issues related to implementation of their CSO

program. Some states have also developed training programs to assist their staff in administering CSO programs. The following sections discuss some of these state specific materials.

5.5.1 Guidance

In many cases, NPDES authorities developed standard language to include in NPDES permits to address CSOs and incorporated this language into guidelines for CSO permit writers. For example, Region 1 developed a policy memorandum that included draft fact sheet language for CSO permits, model permit language, and guidance on documenting and implementing the NMC (Region 1, 1996). This information is used in CSO permits in Massachusetts and New Hampshire (and previously in Maine), where Region 1 is the NPDES authority.

Other cases in which permitting authorities have developed documents to assist in implementation of the CSO Control Policy include the following:

- Maine developed a guidance document, *Program Guidance on Combined Sewer Overflow Facility Plans*, that provides information on monitoring, selection of BMPs, and development of a CSO master plan (the functional equivalent of an LTCP).
- Michigan produced a 1994 *Combined Sewer Overflow Control Program Manual* (MDNR, 1994) to assist staff in implementation of the state's CSO permitting strategy. The manual provides

detailed information on Michigan's CSO program. It also contains a discussion of the elements needed to implement the program and guidance on determining compliance.

- Pennsylvania developed a strategy document that defines the state program and approach, discusses permitting options for small and large POTW and satellite communities, explains special exemptions from LTCP requirements, establishes an implementation strategy, and provides an enforcement policy for the program.

weather operating plans; the Technical & Operational Guidance Series website; and an Integrated Compliance Strategy System that collects information on New York's entire compliance assistance program.

- Illinois offers a wastewater operator certification program that includes CSO operator certification. Illinois' website also provides links to other providers of certification training.

5.5.3 Compliance and Technical Assistance

Compliance assistance includes on-site assistance, website materials, and distribution of outreach materials to support compliance with regulatory requirements. EPA's review found that a limited number of CSO states provide compliance assistance to help communities meet CSO permit requirements.

A review of websites for states with CSO discharges (Table 5.4) indicated that even states with relatively large numbers of CSO communities did not have CSO compliance information readily available. A few states, however, have programs to assist communities with CSO compliance.

The five states highlighted below offer CSO inspection guidance, and technical assistance.

- Maine trains its inspectors to perform all aspects of wet weather control.



In addition to compliance and enforcement inspections, New Jersey provides CSO communities with onsite consultations and technical assistance services. The state is developing a manual to provide state and local inspectors with standard operating procedures.

NJ Department of Environmental Protection

5.5.2 Training

Some permitting authorities have sponsored workshops and training courses. For example:

- Pennsylvania has offered CSO workshops for small communities. The workshops served as a forum for better communicating CSO program requirements, answering questions from CSO communities, and providing an opportunity for CSO communities to voice concerns to the state.
- New York provides training for operators of municipal facilities in conjunction with EPA. This program includes training specifically for operators of facilities served by combined sewer systems. New York also provides a number of services to its inspectors and CSO communities, including: training materials and on-site assistance for developing effective wet-

Table 5.4

Region	State/Territory	CSO-Related Internet Site(s)
1	CT	http://dep.state.ct.us/index.htm http://dep.state.ct.us/wtr/index.htm
	ME	http://www.state.me.us/dep/blwq/engin.htm#engin
	MA	http://www.state.ma.us/dep/dephome.htm
	NH	http://www.des.state.nh.us/water_intro.htm http://www.des.state.nh.us/factsheets/wwt/web-9.htm
	RI	http://www.state.ri.us/dem/ http://www.state.ri.us/dem/programs/benviron/water/quality/index.htm
	VT	http://www.state.vt.us/wtrboard/
2	NJ	http://www.state.nj.us/dep/ http://www.state.nj.us/dep/dwq/
	NY	http://www.dec.state.ny.us/ http://www.dec.state.ny.us/website/dow/index.html
3	DE	http://www.dnrec.state.de.us/dnrec2000/
	MD	http://www.mde.state.md.us/index.html
	PA	http://www.dep.state.pa.us/dep/deputate/watermgt/wsm/facts/fs2655.htm
	VA	http://www.deq.state.va.us/ http://www.deq.state.va.us/water/
	WV	http://www.dep.state.wv.us/
	DC	http://www.environ.state.dc.us
4	GA	http://www.ganet.org/dnr/environ/
	KY	http://www.nr.state.ky.us/nrepc/dep/dep2.htm
	TN	http://www.state.tn.us/environment/ http://www.state.tn.us/environment/water.htm#Program
5	IL	http://www.epa.state.il.us/
	IN	http://www.state.in.us/idem/ http://www.state.in.us/idem/water/facmang/compliance.html
	MI	http://www.deq.state.mi.us/ http://www.deq.state.mi.us/swq/cso%5Ffso/cso%5Ffso%5Findex.html
	MN	http://www.pca.state.mn.us/water/index.html http://www.pca.state.mn.us/water/stormwater.html
	OH	http://www.epa.state.oh.us/oepa.html
	WI	http://www.dnr.state.wi.us/environmentprotect/water.html
7	IA	http://www.state.ia.us/government/dnr/organiza/epd/comp_enf/index.htm http://www.state.ia.us/government/dnr/organiza/epd/wastewtr/wastwtr.htm
	KS	http://www.kdhe.state.ks.us/ http://www.kdhe.state.ks.us/water/index.html
	MO	http://www.dnr.state.mo.us/deq/homedeq.htm http://www.dnr.state.mo.us/deq/wpcp/homewpcp.htm
	NE	http://www.deq.state.ne.us/
	SD	http://www.state.sd.us/denr/denr.html
8		
9	CA	http://www.swrcb.ca.gov/
10	AK	http://www.state.ak.us/dec/deh/water/drinking.htm
	OR	http://www.deq.state.or.us/wq/
	WA	http://www.ecy.wa.gov/ http://www.ecy.wa.gov/programs/wq/wqhome.html

Online Information Resources

State environmental agencies offer communities a range of information resources including fact sheets, compliance checklists, information on water quality standards, etc. This list contains links to agency home pages as well as links to CSO information pages, where available.

- Illinois provides a CSO inspection checklist in conjunction with Region 5.
- Indiana provides a CSO inspection checklist in conjunction with Region 5.
- New Jersey is developing an inspection manual to provide state and local inspectors with standard inspection operating procedures.
- Pennsylvania trains its inspectors twice each year and provides a compliance manual for use as guidance.

5.6 Communication and Coordination

The CSO Control Policy expects that the permit writer should play a critical role in the development and implementation of CSO controls. The permit writer is expected to coordinate with the CSO community, review interim LTCP deliverables and other submissions, and participate in the consensus-building process with other stakeholders. The permit writer is also expected to serve as the point of contact for coordination with state water quality standards and enforcement authorities, as appropriate.

5.6.1 Communication

Within an NPDES authority, the organizational structure to support full implementation and enforcement of all aspects of the CSO Control Policy is often decentralized. Some NPDES authorities (e.g., Michigan,

New York, Pennsylvania) have regional offices with varying degrees of responsibility for the development, implementation, and enforcement of the NPDES program. In some states (e.g., Illinois, Massachusetts, Vermont, West Virginia), responsibility for the water quality standards program is in an agency distinct and separate from the NPDES authority. The permit writer's responsibility is to ensure open and informed lines of communication among all interested parties.

Many NPDES authorities use electronic spreadsheets and databases to track the status of efforts by CSO communities to develop and implement NMC and LTCP. These electronic files are easily shared across programs and offices, thereby facilitating communication. Examples of CSO tracking systems developed by NPDES authorities are presented in Appendix Q.

5.6.2 Coordination

Several NPDES authorities have undertaken coordination of the activities of CSO communities discharging to the same receiving water. EPA's *Combined Sewer Overflows Guidance for Permit Writers* offers:

The permit writer may also be able to assist communities in coordinating aspects of its CSO control programs with each other. This might be particularly beneficial for adjacent communities discharging to the same receiving water.

Examples of actions by NPDES authorities to coordinate the activities of CSO communities discharging to the same receiving water are presented in the following summaries.

- New Jersey uses a watershed process to develop watershed restoration plans that include CSO controls. During the watershed process, water quality standards and uses are considered as management responses are developed. Possible management responses include TMDLs, LTCP development and implementation, and other appropriate activities.
- New York determined that the nine CSO permits with outfalls impacting the Hudson River in the vicinity of Albany should be modified simultaneously. The concurrent modification of these permits is intended to promote comprehensive and coordinated planning.
- Region 3, working with the Water and Sewer Authority for the District of Columbia, organized a Special Panel on Combined Sewer Overflows and Storm Water Management in the District of Columbia. The Special Panel provided an opportunity for federal land holders and other local and regional multi-jurisdictional government agencies to provide input and recommendations for CSO control within the District of Columbia. The Special Panel highlighted the need for implementation of a watershed approach and cooperation with Maryland to

improve water quality within the District of Columbia.

5.7 Financial Assistance

NPDES authorities are concerned with two primary financial obligations with regard to CSOs: funding the state program's operation and assisting CSO communities in securing funds necessary to implement CSO control.

The primary mechanism for funding state CSO programs is the federal assistance EPA provides to NPDES authorities and other agencies responsible for implementing water pollution control programs through Section 106 Water Pollution Control Program Grants. These grants are discussed in Section 4.8.3 of this report. No state-level data exist on grant totals or prioritization of grants for specific programs.

State-level data exist for the appropriation of categorized listings for the State Revolving Fund (SRF). The SRF is a low-interest loan program administered by the states but funded by the federal government and the states. CSO municipalities are eligible for SRF funding under a special combined sewer category (Category V). Between 1988 and 2000, over \$2.0 billion was identified as being used for CSO projects. Figure 5.9 shows trends in SRF loans for CSO projects over time. This general pattern suggests that demand for SRF loans for CSO control associated with the 1989 National CSO Control Strategy and the 1994 CSO Control Policy may have lagged the issuance of these documents by a few

years. It also suggests that the demand for SRF loans for CSO projects will continue to increase as more CSO communities work to implement LTCPs.

From 1988 to 1994 (pre-CSO Control Policy), over \$700 million in SRF loans was used for Category V projects. Since 1994, over \$1.3 billion has been used for Category V projects. Figure 5.10 shows the distribution of the SRF money by state. Over both these periods, Illinois, Michigan, and New York have the highest SRF money loaned for CSO projects. Since 1995, many states requested noticeably higher levels of SRF money for CSO projects (indicative of controls from the strategies and policies being put in place). A notable decline in SRF Category V loans can be seen in Vermont (approximately \$19 million less between 1995-2000, than 1988-1994). This reduced level of SRF funding reflects that Vermont's CSO program focused on sewer separation and is nearing completion, with 20 of

27 CSO communities having completed sewer separation projects.

Most states have state funding and administered grant and loan programs other than the SRF loan programs. Many of these programs include provisions for infrastructure or wastewater projects that may also be used for CSO projects. Examples of state-specific programs targeted to CSOs include:

- Maine's grant program funds up to 25 percent of the cost for completion of CSO Master Plans (the functional equivalent of an LTCP) to encourage communities to identify CSO control alternatives.
- Connecticut has a provision that allows for CSO projects to receive a 50-percent grant and a 50-percent SRF loan. Non-CSO

Figure 5.9

SRF Loans for CSO Projects, 1988—2000

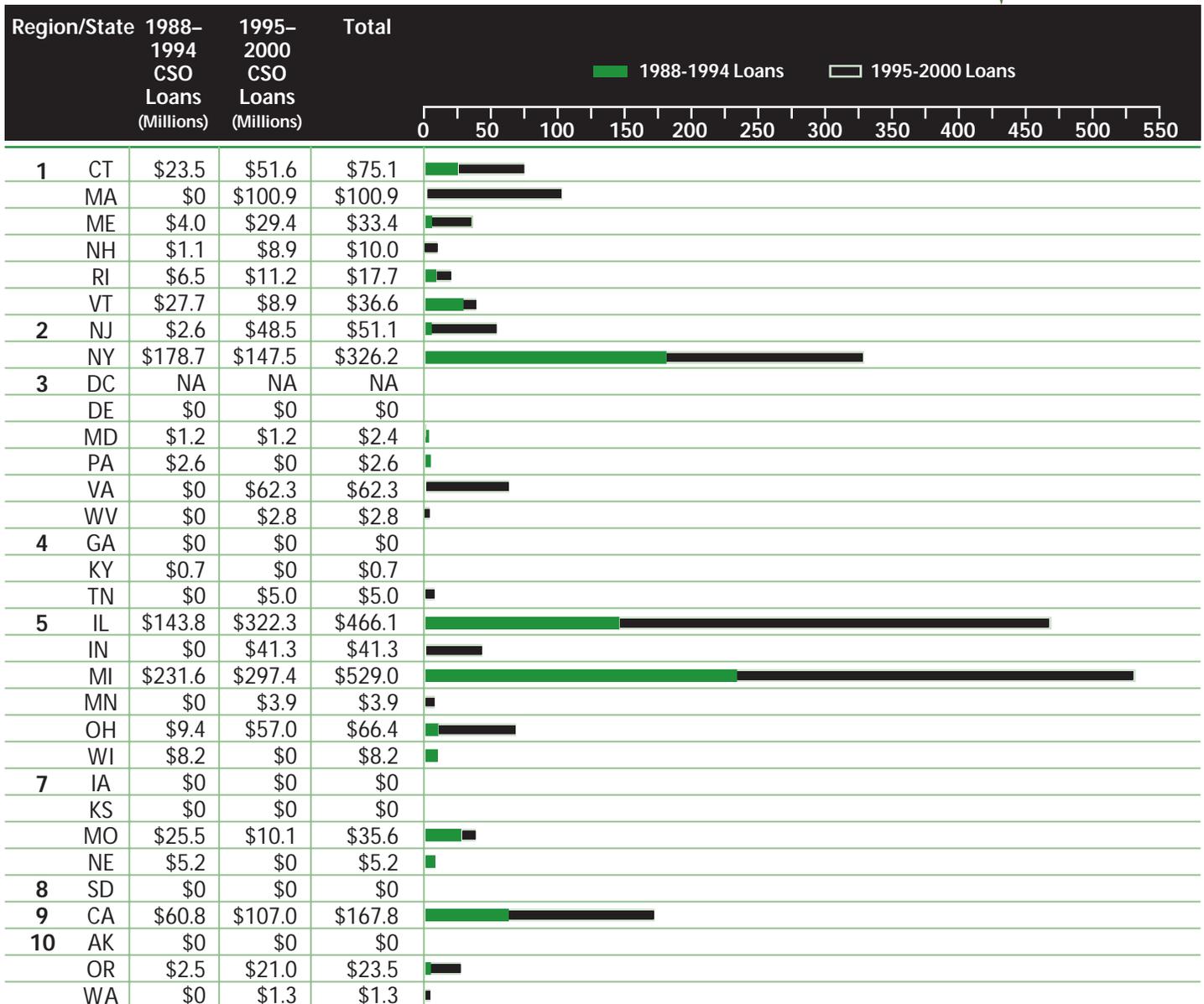
SRF loans for CSO projects reached more than \$245 million in 1994 and began to rise again in 1998, reaching more than \$400 million in 2000. This suggests that funding for the implementation of CSO controls lagged several years behind the issuances of the 1989 Strategy and the 1994 Policy.



Figure 5.10

Distribution of SRF Loans for CSO Projects by State, 1988—2000

Communities in most states have used SRF loans for CSO projects.



National CSO Loan Award Summary (In Millions)

1988-1994: **\$735.6**
 1995-2000: **\$1,339.5**
 Total: **\$2,075.1**

projects are eligible to receive a maximum 20-percent grant.

While nearly two-thirds of CSO states have a grant or loan program, most of these are targeted toward small and/or financially distressed communities, and often have fairly low funding levels. Such programs may help initiate the CSO planning process, but few of these programs would help supplement financing large capital expenditures associated with CSO controls.

use of the water, such as beach closures and restored habitat.

All NPDES authorities have a mechanism for tracking administrative performance measures. This information, as collected from the NPDES authorities, was summarized and presented in Section 5.2 of this report.

As part of the data gathering effort for this report, EPA collected data readily available from NPDES authorities that could be used to assess and document other performance measures attributable to CSO control. More than one-quarter of CSO permit files (266 of 859) contained data on end-of-pipe measures, such as frequency or volume of CSOs, typically as part of a permit application or as part of the system characterization activities. Information presented in this format, however, is most often a "snapshot" of current conditions, based on data collected six to 18 months prior to the submission of the report or application. It is not possible to establish meaningful trends in CSO control with this data.

Several NPDES authorities include requirements in CSO permits for submission of end-of-pipe data on a monthly or annual basis, but often have no system for tracking the measures from year to year. For example:

- Some NPDES authorities include requirements in CSO permits to estimate the volume and frequency of overflows, by outfall, as part of a monthly discharge monitoring report (DMR). DMRs



As part of Portland, Oregon's sampling and monitoring program, the city regularly monitors the Columbia Slough at nine locations for parameters of concern. These include: bacteria, toxics, and nutrients.

Photo: Photodisc

5.8 Performance Measures

Performance measures are objective, quantifiable indicators to track trends and results over time. In the case of CSOs and CSO impacts, the *Combined Sewer Overflow Guidance for Permit Writers* suggests that performance measures generally fall into one of four categories:

- Administrative measures that track programmatic activities such as the number of permits requiring the NMC and LTCPs.
- End-of-pipe measures that show trends in CSO activity, such as reductions in pollutant loading and the frequency and duration of CSO events.
- Receiving water measures that show trends in in-stream concentrations of CSO pollutants, such as dissolved oxygen and total suspended solids.
- Ecological, human health, and designated use measures that show trends in conditions relating to the

are submitted to the NPDES authority as hard copies, and the NPDES authority has no electronic system for tracking data reported by CSO communities.

- Some NPDES authorities include requirements in CSO permits for annual reports documenting the continued implementation of the NMC. These reports contain information on end-of-pipe measures such as the number of dry weather overflow events during the previous year. NPDES authorities requiring these reports have not established a system for compiling the data reported.

Both cases illustrate situations in which information that could be used to assess benefits from program implementation is filed with the NPDES authority but is not easily accessed and is therefore of limited use.

EPA's review of CSO permit files found that less than 10 percent contained information on specific programs geared toward tracking CSO-related benefits by using receiving water, ecological, human health, or designated use measures of success in CSO planning activities. The activities included measuring in-stream water quality to establish background and pre-control conditions, and monitoring in-stream pollutant characteristics during wet weather events. Documentation of monitoring studies was most often presented in an LTCP, annual reports, periodic reports, or correspondence files between communities and NPDES authorities. No state has

developed a system for statewide, CSO-specific assessment.

Data associated with receiving water or ecological performance measures are site-specific. This makes it difficult to track performance measures at the state level. The CSO community case studies developed to support this report indicate that information available from CSO communities may support an assessment using these performance measures. Additional discussion of these measures is provided in Section 6.6 and included in the case studies provided in Appendix C.

5.9 Findings

CSO Permits and Permitting Authorities

- There are 859 CSO permits regulating 9,471 outfalls.
- CSO permits regulate outfalls in 32 states (including the District of Columbia) within nine EPA regions.
- State agencies administer the permitting programs in 28 states; EPA is the NPDES permitting authority for Alaska, the District of Columbia, Massachusetts, and New Hampshire.

CSO Program Development and Permit Requirements

- All of the 32 states with combined sewer systems developed CSO strategies in response to the 1989 National CSO Control Strategy and most have mechanisms in place to address CSOs through

NPDES permits or CWA enforceable mechanisms.

- Upon issuance of the 1994 CSO Control Policy, many state strategies were updated; however, state programs vary in the extent to which they specifically follow the provisions of the CSO Control Policy:
 - 27 require the NMC or a suite of BMPs that include or are analogous to the NMC.
 - 25 have a framework for CSO facilities planning that is consistent with the LTCP approach outlined in the CSO Control Policy.
- 807 (94 percent) of CSO communities are under an enforceable requirement, either in a permit or an enforceable order, to implement some level of CSO control.
- 740 (86 percent) are required to implement a set of BMPs that includes or is analogous to the NMC.
- 559 (66 percent) require development of an LTCP.

Coordination of LTCP Development with Water Quality Standards Reviews

- Most NPDES authorities have not established a process for coordinating the review of LTCPs and the development of CSO permits with the water quality standards authority to determine if revisions to the water quality standards are appropriate.

- Three states (Massachusetts, Maine, and Indiana) have developed statutory frameworks to address water quality standards in CSO-impacted receiving waters.

Enforcement and Compliance Assistance

- Enforcement actions initiated by NPDES authorities are mainly administrative orders used to establish or enforce implementation milestones and deadlines for CSO controls. There have been at least 173 actions to date.
- States have provided compliance assistance to CSO permittees by utilizing EPA-issued guidance documents, developing state guidance and training materials, hosting workshops and conducting outreach. Most states attempt to incorporate CSO compliance activities within the overall NPDES compliance programs for the state.
- States perform compliance monitoring of CSOs through NPDES inspections programs.
- States coordinate enforcement and compliance activities with the region.

Funding

- The SRF loan program is the principal mechanism used by the states to provide funding for CSO control projects (\$2.08 billion between 1989 and 2000).
- SRF loans for CSO projects in 2000 were the highest ever, accounting

for \$411 million (12 percent of total SRF assistance).

- State-specific loan and grant programs exist but offer limited funding (generally available for use in covering planning and program development versus implementation costs).

Performance Measures

- Data necessary for measuring administrative performance of NPDES authority efforts to implement the Policy are readily available and tracked.
- Data needed for understanding and reporting environmental benefits on a statewide basis are not readily available.
- Comprehensive state data management and analysis on environmental progress (including load reductions associated with CSO control) is not being conducted.