United States
Environmental Protection
Agency

Office of Water (WH-547)
Washington, DC 20460

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September 1993

1992 Needs Survey Report to Congress

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 22 1993

THE ADMINISTRATOR

Honorable Albert Gore, Jr.
President of the Senate
Washington, D.C. 20510

Dear Mr. President:

Enclosed is the Environmental Protection Agency's (EPA) 1992 Needs Survey report on the "Assessment of Needs for Publicly Owned Wastewater Treatment Facilities, Correction of Combined Sewer Overflows, and Management of Storm Water and Nonpoint Source Pollution in the United States." This report is required biennially by sections 205(a) and 516(b)(1) of the Clean Water Act (CWA).

The 1992 Needs Survey, a joint effort by the States and EPA, summarizes the capital construction costs to meet municipal wastewater pollution control needs. This report also presents a broader range of needs eligible for funding under the State Revolving Fund (SRF) program under Title VI of the CWA, and includes modeled needs estimates in addition to the traditional documented needs submitted by States. EPA used models to supplement the documented needs estimates for the control of combined sewer overflows, to estimate the cost of implementing urban stormwater management programs, and to develop limited nonpoint source pollution control costs. States have limited documentation of need or cost for these newer eligible activities authorized for SRF funding.

As in previous Needs Surveys, EPA maintained specific criteria to include only those needs for which a water quality or public health problem could be documented. Although the scope and quality of needs reporting have improved, a number of gaps remain to be addressed, particularly for the control of stormwater and nonpoint source runoff. Future Needs Survey reports will contain more complete estimates of need.

I would be pleased to further discuss the results of this Needs Survey at your convenience.

Sincerely,

Carol M. Browner

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 22 1993

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Honorable Thomas S. Foley
Speaker of the House
of Representatives
Washington, D.C. 20515

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Carol M. Browner

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1992 Needs Survey Report to Congress

Assessment of Needs for Publicly Owned Wastewater Treatment Facilities, Correction of Combined Sewer Overflows, and Management of Storm Water and Nonpoint Source Pollution in the United States.

SEPTEMBER 1993

U.S. Environmental Protection Agency
Office of Water
Office of Wastewater Enforcement and Compliance (WH-547)
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Acknowledgments

Many dedicated individuals have been involved in the 1992 Needs Survey. Though it is impossible to acknowledge the hard work of everyone, we would like to thank the EPA Regional and State Needs Survey Coordinators for their active support and continuing interest in the Needs Survey.

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Executive Summary

The 1992 Needs Survey, a joint effort of the States and EPA, was conducted to meet the requirements of Sections 205(a) and 516(b)(1) of the Clean Water Act.

This report provides the U.S. Environmental Protection Agency's (EPA's) detailed estimate of the eligible capital costs to build publicly owned municipal wastewater treatment facilities and capital/program development costs for other eligible activities necessary to comply with the requirements of the Clean Water Act, including stormwater, nonpoint source, and estuary programs. The 1992 Needs Survey focuses on the expanded CWA funding eligibilities under the State Revolving Fund (SRF) in the 1987 Amendments to the Clean Water Act. Models were used to supplement documented needs estimates for combined sewer overflows (CSOs). Models were also used to develop preliminary urban storm water (SW) and agricultural and silvicultural nonpoint source (NPS) pollution control implementation costs since very little documentation of specific projects or costs was available from the States.

EPA's needs estimates include those facilities and activities for which a water quality or public health problem could be documented using specific criteria established by EPA. The capital investment necessary to satisfy all categories of need is presented in Table 1. Additional nonconstruction estimates are included for program development costs associated with SW and NPS control. The 1992 total documented and modeled needs are $137.1 billion to satisfy all categories of needs eligible for SRF funding for the design year (2012) population.

This amount includes $50.1 billion in modeled needs for CSO, SW, and NPS pollution control. For SW and NPS, the estimates exclude operation and maintenance costs (O&M) since O&M costs are ineligible for SRF funding. However, O&M costs are the major costs associated with SW and NPS program implementation. Only agriculture and silviculture NPS pollution control costs were estimated. Many types of NPS pollution were not addressed: abandoned mines, urban areas, septic systems, contaminated sediments, hydromodification, and atmospheric deposition.

The needs estimate for the Nation rose in constant dollars by $53.4 billion (39 percent) from 1990 to 1992. The increase was due to a variety of factors, primarily improved documentation of SRF eligibilities and the use of models to capture full CSO, as well as partial urban SW and NPS, costs.

Total documented needs are $111.9 billion, including the abovementioned modeled categories, of which only $1.9 billion is for the newer eligibilities: NPS (including groundwater and wetlands) and estuarine pollution control. This represents a 20 percent increase from 1988 and is the result of significantly increased State documentation of needs. Small community needs are $13.4 billion, representing 12% of total documented needs. EPA and the States made a special effort to increase documentable needs estimates for small com-

munities and to clarify needs for those communities facing financing difficulties.

The 1992 Needs Survey identified more than 20,000 treatment and collection facilities, of which 15,613 provide treatment. These treatment facilities currently serve a population of 180.6 million, representing 70 percent of the Nation's population. When all needs are met, facilities providing treatment will increase to 18,966 and the population served will increase to more than 250 million or 87 percent of the Nation.

About 94 percent of existing treatment facilities are providing secondary treatment or better. Currently, 14,745 facilities are providing secondary or better levels of treatment, up 6 percent from 1988. There are about 1,100 communities served by 1,303 CSO facilities in the Nation. Of these, 375 facilities have documented needs totaling $22.4 billion to correct CSO problems. A separate EPA estimate of CSO control needs was made based on the use of a model to obtain a fair and equitable estimate that meets the most likely "presumptive" approach outlined in the December 1992 draft CSO policy. However, the final CSO policy may differ from the draft. Total CSO needs are estimated to be $41.2 billion.

TABLE 1

NEEDS FOR PUBLICLY OWNED WASTEWATER TREATMENT FACILITIES AND OTHER ELIGIBILITIES
(January 1992 Dollars in Billions)

NEEDS CATEGORY		TOTAL NEEDS
TITLE II ELIGIBILITIES		
I	Secondary Treatment	31.3
II	Advanced Treatment	15.5
IIIA	Infiltration/Inflow Correction	2.8
IIIB	Replacement/Rehabilitation	3.6
IVA	New Collector Sewers	17.9
IVB	New Interceptor Sewers	14.7
V	Combined Sewer Overflows	41.2*
VI	Storm Water (institutional source controls only)†	0.1*
TOTAL CATEGORIES I-VI		127.1
OTHER ELIGIBILITIES (Sections 319 and 320)		
Nonpoint Source (agriculture and silviculture only)		8.8*
Ground Water, Estuaries, Wetlands		1.2
GRAND TOTAL		137.1

* Modeled needs.
† Includes SRF-eligible costs to develop and implement SW plans but not eligible structural and construction costs.
NOTE: Costs for operation and maintenance are not eligible for SRF funding and therefore are not included.

Introduction

What Is the Needs Survey?

This report summarizes the U.S. Environmental Protection Agency's (EPA's) 1992 assessment of the eligible costs of constructing needed publicly owned wastewater treatment works and the capital/program development costs for other eligible activities required by the Clean Water Act (CWA), including stormwater, nonpoint source, and estuary programs. This biennial report is required by Sections 205(a) and 516(b)(1) of the CWA. The 1992 Needs Survey, a joint effort of the States and EPA, is the 11th Needs Survey since enactment of the CWA Amendments of 1972.

Cost estimates presented in previous Needs Surveys have served as a basis for congressional allotment of funds appropriated for the construction grants program in accordance with the provisions of Title II of the CWA. Construction grants have been awarded to construct municipal wastewater treatment and collection facilities. The 1987 Amendments to the CWA established the State Revolving Fund (SRF) program under Title VI. As funding under the Construction Grants program phases out, SRF loans have become the principal funding source for construction of wastewater treatment and collection projects.

The 1987 Amendments also established new categories of needs eligible for funding under the SRF program, which have tended to increase the level of needs eligible for EPA financial assistance. These categories include estimates for storm water (SW), the costs to implement activities in approved State nonpoint source (NPS) management plans, including groundwater and certain wetlands protection activities under CWA Section 319 and the costs to develop and implement conservation and management plans under CWA Section 320 (National Estuary Program).

The SRF program gives States the flexibility to fund projects that are more comprehensive in nature than those eligible under Title II, including new facilities and expansion to address expected population growth as well as facility replacement. States can allocate SRF funding to a broader range of projects to address the problems they consider most significant in terms of achieving water quality goals.

The Needs Survey is used extensively to assist the Federal government and the States in program planning, policy evaluation, and program management. Private firms, public interest groups, and trade associations use Needs Survey information in marketing, cost estimating, and policy formulation.

The Needs Survey data base contains detailed cost and technical information on wastewater treatment and collection facilities nationwide, including facilities with unmet needs and those for which needs have already been met. The primary purpose of this report is to summarize the cost information for unmet needs. Summaries of technical data are provided in Appendix C.

What Is a "Need"?

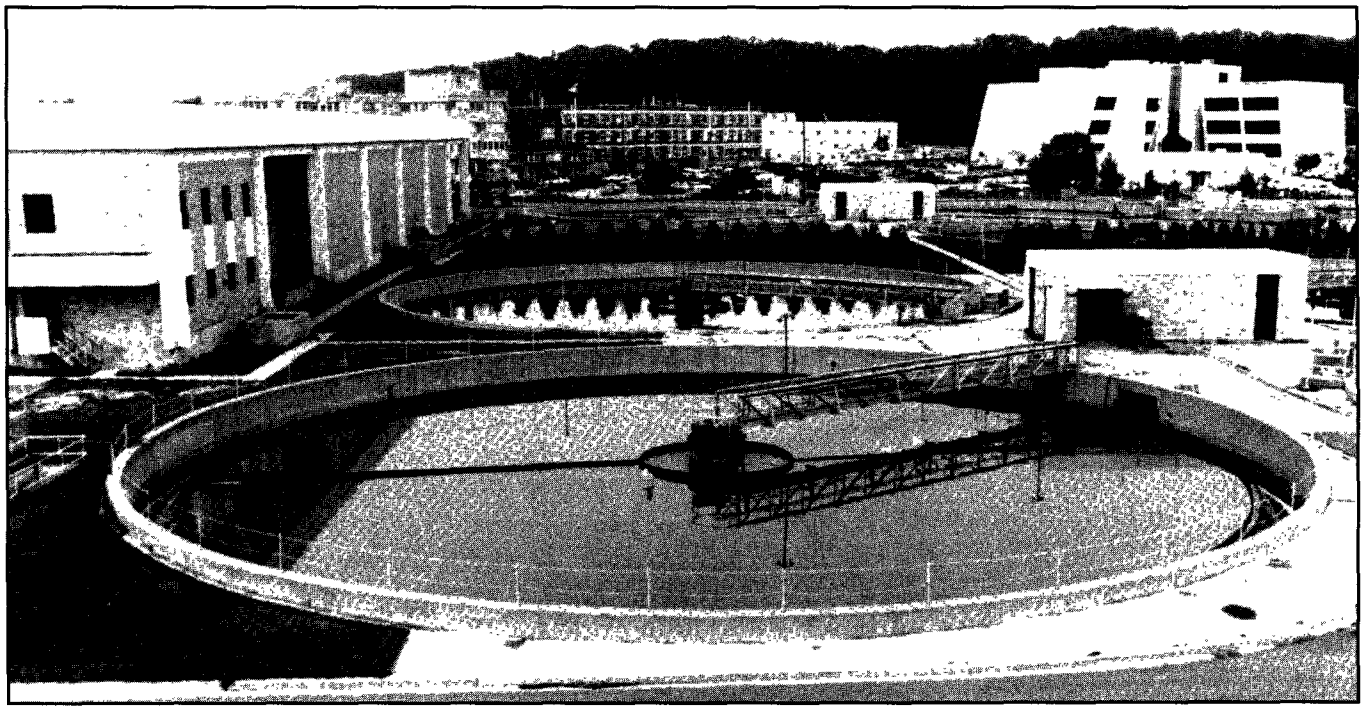
Traditionally, a "need" is a capital cost estimate for building a publicly owned wastewater treatment facility that is eligible for Federal financial assistance in accordance with the provisions of the CWA. Needs are estimated for facilities used in the conveyance, storage, treatment, recycling, and reclamation of municipal wastewater. Estimates are included for all types of required changes to wastewater facilities, such as the construction of entirely new facilities and the enlargement, upgrade, and replacement of existing facilities. Existing facilities are considered for replacement when they have reached the end of their design life and no longer operate satisfactorily.

The 1992 Needs Survey estimates were generated two ways: 1) reported by States and 2) modeled. For the latter, EPA estimated costs for facilities and program activities (e.g., SW, NPS) eligible for funding under the SRF program. As a result, a broader range of needs are reported in the 1992 Needs Survey than in prior Needs Surveys. Costs reported include costs for structural and nonstructural measures, and costs to develop and implement State and municipal SW and NPS programs.

Although the scope and quality of the 1992 Needs Survey reporting have improved, a number of gaps remain. Needs for municipal costs to address new enforceable requirements imposed by the 1987 Amendments of the CWA and the 1988 Ocean Dumping Ban Act, such as toxics removal and sludge management, are currently included as needs reported for Categories I and II and are not shown separately by EPA. Needs for sludge management related to regulations published in 1992 are not fully priced out in this Needs Survey. Although needs for advanced treatment increased significantly, they do not represent the full cost of meeting more stringent water quality standards. However, as States continue to revise their water quality standards to control toxics, nutrients, and other pollutants, future Needs Surveys may reflect these needs more fully. Different States may adopt stricter standards depending on their particular water quality needs.

In the case of storm water, the modeled needs shown on Table 1 deal only with the development and implementation of institutional controls, but not with potentially significant structural construction costs because EPA lacked sufficient information to develop those costs, whereas costs for actual construction costs are included in some of the $1.8 billion in documented storm water needs submitted by eight States.

For NPS, modeled estimates were generated for agricultural, confined animals, and silviculture run-



off only. Estimates of costs to control diffuse runoff from developed areas, drainage from abandoned mines, construction activities, hydrologic modifications, and other sources have not been addressed in this report due to lack of sufficient information to develop estimates. Documented needs for NPS were submitted by only 12 States. Documented costs for the other Title VI eligible needs, including groundwater, estuaries, and wetlands protection activities are reported from only six States. For estuaries, EPA assumed the majority of needs would be captured in the traditional (point source) needs categories (I-V) or by the NPS model. Needs for these other activities are eligible for SRF assistance only if the activity is an integral part of an approved nonpoint source management plan or estuary comprehensive conservation and management plan.

Needs estimates for all categories of need do not include annual costs for operation and maintenance. They also do not include needs that are ineligible for Federal assistance under Title VI of the CWA, such as house connections to sewers and costs to acquire land that is not a part of the treatment process.

Municipalities can sometimes dramatically reduce total project costs of wastewater infrastructure by implementing various water use efficiency practices. Included are short- and long-term water use reduction, water recycling, and wastewater reclamation and reuse. For example, these practices may result in the deferral of expanding existing facilities or the downsizing of new facilities.

Types of Wastewater Treatment and Water Pollution Control Projects

The types of wastewater treatment and water pollution control projects for which needs estimates are presented are the following:

- **Category I**—Secondary Treatment
- **Category II**—Advanced Treatment
- **Category IIIA**—Infiltration/Inflow Correction of Sewers
- **Category IIIB**—Replacement/Rehabilitation of Sewers
- **Category IVA**—New Collector Sewers
- **Category IVB**—New Interceptor Sewers
- **Category V**—Combined Sewer Overflow Control
- **Category VI**—Storm Water Pollution Control
- Nonpoint Source Pollution Control (Sec. 319)
- Ground-Water Protection (Sec. 319)
- Estuarine Protection (Sec. 320)
- Certain Wetlands Protection Activities (Sec. 319)

More detailed explanations of each category can be found in the Glossary.

Time Frame

The eligible needs identified in this report only include existing needs documented as of January 1, 1992. EPA estimated the capital investment necessary to address current municipal wastewater treatment problems to satisfy the design year (2012) population. The design year is used to approximate the 20-year design life for newly constructed facilities which are designed to meet the current population need of a municipality, plus population growth and migration for the next 20 years.

EPA did not estimate the need to satisfy the current year population, as in prior Needs Surveys since funding for reserve capacity under the SRF program is not limited to current population, as was the case under the Construction Grants program.

What Are the Scope and Objectives?

The scope of the 1992 Needs Survey was expanded to report all needs eligible for funding under the SRF program in accordance with Title VI of the CWA, including the new water quality requirements. While the Needs Survey focuses primarily on the documented capital costs required to meet the needs of the Nation's wastewater infrastructure, this report also includes modeled preliminary estimates for newer categories of need such as SW and NPS pollution control. Costs to correct CSOs were also modeled. Because needs for other new eligibilities such as ground water, estuaries, and wetlands were not modeled, only the documented needs are reported and the estimates do not reflect the total costs required to address problems in these areas. For estuaries, EPA assumed that the majority of the activities conducted under Section 320 estuary programs are either point or nonpoint source control activities and will be captured in the traditional needs categories or by the NPS model. Additionally, needs for small communities are highlighted in the 1992 Needs Survey.

The major objective of the 1992 Needs Survey was to improve the 1990 needs estimates by updating and enhancing documented needs and developing models for eligible needs for which documentation does not exist. A secondary objective was to improve specific technical data. EPA actively sought more complete information for small communities and CSOs. States were encouraged to update all technical data, in particular flow and population data, on all wastewater treatment and collection facilities in the Needs Survey. However, many States lacked the resources to collect and report the most current information to EPA.

Reported/Documented Needs

As in the 1986 and 1988 Needs Surveys, EPA asked States to update their needs for wastewater treatment and collection on a facility-by-facility basis in accordance with established documentation criteria.

In general, EPA applied the same documentation criteria in the 1992 Needs Survey that were established in prior Needs Surveys to ensure that a water quality or public health problem existed. These criteria were maintained to provide national consistency in estimating and reporting needs. States were asked to submit documentation for all updated needs, including those they had updated in the 1990 Needs Survey. Undocumented needs are reported under the separate State estimates (SSEs). A more detailed discussion of the documentation process is presented later in this report in the section entitled "How Were the Needs Documented?"

Modeled Needs

In past Needs Surveys, certain categories of need were not adequately reported, mainly because the States lacked the information to complete the necessary planning. There is reason to believe that some needs continue to be underestimated. States and localities are still assessing how to meet the regulatory water quality protection requirements for CSOs and SW management, so the documented needs do not yet fully reflect the costs of these programs. In the case of NPS, types of controls very different from traditional wastewater treatment infrastructure may be required. For these reasons, EPA developed modeled estimates for CSO correction and for selected SW and NPS management to be able to present more complete needs estimates in the 1992 Needs Survey Report.

Of the approximately 1,100 communities served by 1,303 CSO facilities in the Nation, only 375 facilities reported documented needs, even though it was recognized that most of these facilities would need construction to comply with the CWA requirements. At the time the 1992 Needs Survey data were collected, it was not clear to many States and municipalities what actions would be needed to address CSO problems. EPA published its draft policy on meeting CSO control needs in December 1992, long after the States had submitted their documented needs. To present a fair and consistent estimate of total national CSO control needs, EPA is reporting the modeled estimate that most closely relates to the implementation goals contained in the draft policy.

EPA undertook a more limited modeling effort to begin to develop national estimates of costs for SW and NPS control programs. Summaries of the methodologies used to estimate these needs are presented in the section on models, beginning on page 20.

Summary of the Total Needs

What Are the Needs?

EPA's estimates of the investment necessary to address the Nation's municipal wastewater treatment needs are presented in Table 1. The table summarizes the combination of documented and modeled estimates constituting EPA's total estimate of $137.1 billion eligible for SRF funding. Of this total, traditional categories of needs (Categories I-IV) total $85.8 billion, with needs for treatment alone totaling $46.8 billion. Needs for CSOs (Category V) total $41.2 billion, a level higher than that of any other Needs Survey category. Appendix A contains State-by-State estimates of all the documented needs estimates.

EPA's estimate of total documented needs is $111.9 billion. These needs are displayed in Table 2. This table differs from Table 1 in that documented, not modeled, needs are reported for the CSO, SW, and NPS categories. A total of about 1,100 communities served by 1,303 CSO facilities were identified in the 1992 Needs Survey, although documented needs totaling $22.4 billion were reported for only 375 of these facilities. States were also able to provide documented estimates for SW, NPS, and other new SRF eligibilities of $3.7 billion.

Modeled needs for SW (Category VI) are $116.5 million and

TABLE 1

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II	Advanced Treatment	15.5
IIIA	Infiltration/Inflow Correction	2.8
IIIB	Replacement/Rehabilitation	3.6
IVA	New Collector Sewers	17.9
IVB	New Interceptor Sewers	14.7
V	Combined Sewer Overflows	41.2*
VI	Storm Water (institutional source controls only)†	0.1*
TOTAL CATEGORIES I-VI		127.1
OTHER ELIGIBILITIES (Sections 319 and 320)		
Nonpoint Source (agriculture and silviculture only)		8.8*
Ground Water, Estuaries, Wetlands		1.2
GRAND TOTAL		137.1

* Modeled needs.
† Includes SRF-eligible costs to develop and implement SW plans but not eligible structural and construction costs.
NOTE: Costs for operation and maintenance are not eligible for SRF funding and therefore are not included.

for selected NPS control are $8.8 billion. The results of the 1992 Needs Survey confirmed that few States have documented costs for these needs. EPA's modeled cost estimates represent program development and implementation of SW/NPS pollution management plans.

EPA's SW modeled estimate accounts for only part of the eligible SW costs and therefore is low. EPA believes it accurately priced out the SRF-eligible needs to develop and implement SW management plans. However, the modeled estimate does not include eligible construction costs (which are included in some of the $1.8 billion in documented costs submitted by eight States) because EPA lacked sufficient information to model those costs. Eligible costs represent only a small fraction of the total SW program costs, which are mainly annual O&M costs.

EPA's modeled NPS control estimate is $8.8 billion compared to only $693 million in documented needs, yet the modeled estimate is also incomplete because of a lack of sufficient information to develop estimates for all categories of NPS pollution. As with all other categories of need, O&M costs are not eligible for SRF funding and therefore are not included.

TABLE 2

SUMMARY OF DOCUMENTED NEEDS
(January 1992 Dollars in Billions)

NEEDS CATEGORY		DOCUMENTED NEEDS
TITLE II ELIGIBILITIES		
I	Secondary Treatment	31.3
II	Advanced Treatment	15.5
IIIA	Infiltration/Inflow Correction	2.8
IIIB	Replacement/Rehabilitation	3.6
IVA	New Collector Sewers	17.9
IVB	New Interceptor Sewers	14.7
V	Combined Sewer Overflows	22.4
VI	Storm Water	1.8
CATEGORIES I-VI		110.0
OTHER ELIGIBILITIES		
Nonpoint Source		0.7
Ground Water, Estuaries, Wetlands		1.2
GRAND TOTAL		111.9

NOTE: Costs for operation and maintenance are not eligible for SRF funding and therefore are not included.

How Have the Needs Changed?

The total needs increased $53.4 billion in constant dollars from $83.7 billion in the 1990 Needs Survey to the current $137.1 billion estimate. In general, the increases are caused by one or more of six factors: (1) continued population growth and redistribution, (2) deterioration of older sewers and facilities, (3) more stringent standards to protect water quality, (4) newly eligible activities, (5) modeled estimates for wet weather flow controls, and (6) use of a different methodology for reporting the 1990 needs.

As shown in Table 3, advanced treatment needs have grown by $10 billion. This increase has occurred primarily because the installation of secondary treatment controls has proved to be insufficient in many cities to meet water quality standards. It is likely that this category of needs will continue to grow in future surveys as more States complete their planning to address the new water quality standards. Needs for CSOs have increased by $24.0 billion as a result of modeling the 1303 CSOs compared to 375 documented CSO estimates; the documented CSO needs increased by $5.2 billion from 1990. The increases in secondary treatment and new collectors are attributable to population growth and population redistribution since the last survey.

The other reason for increased 1992 needs is that the methodology used by EPA to develop these needs was improved over that used in 1990. Since the

TABLE 3

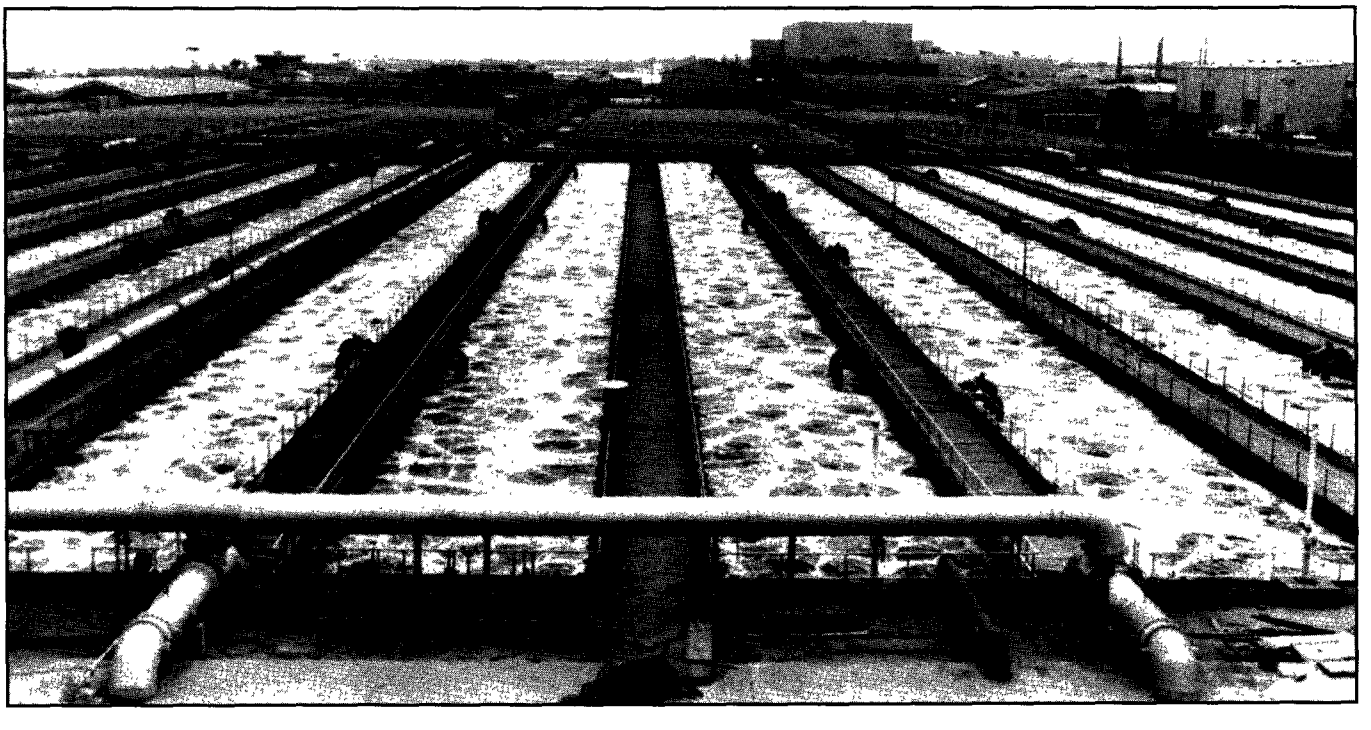
COMPARISON OF DOCUMENTED DESIGN YEAR NEEDS 1988 THROUGH 1992 NEEDS SURVEYS* (January 1992 Dollars in Billions Except as Noted)

NEEDS CATEGORY		1988 SURVEY	1990 SURVEY	1992 SURVEY
I	Secondary Treatment	29.1	25.9	31.3
II	Advanced Treatment	5.5	4.9	15.5
IIIA	Infiltration/Inflow Correction	3.1	2.9	2.8
IIIB	Replacement/Rehabilitation	4.0	3.7	3.6
IVA	New Collector Sewers	14.9	14.4	17.9
IVB	New Interceptor Sewers	16.2	14.7	14.7
V	Combined Sewer Overflows	17.7	17.2	22.4
VI	Storm Water	—	—	1.8
OTHER SRF ELIGIBILITIES				
Nonpoint Source		—	—	0.7
Ground Water, Estuaries, Wetlands		—	—	1.2
TOTAL NEED		90.5	83.7	111.9
TREATMENT CATEGORIES I & II		34.6	30.8	46.8
CATEGORIES I-V (Nominal Dollars)		83.5	80.4	108.2

* Note that the 1990 estimates were derived using a methodology different from that used in this and previous surveys. For 1990, EPA simply adjusted the 1988 needs estimates for grant and loan awards and inflation.

1990 Needs Survey was scaled down in scope, new needs that were documentable in 1990 were collected and reported as State supplemental estimates. This was because EPA did not collect or review needs documentation from the States during the 1990 Needs Survey. Consequently, although there appears to have been a substantial increase in documented needs from 1990 to 1992, some of the increase would have been realized in 1990 had the same methodology been used in all years.

The documented needs have increased by $28 billion from the 1990 Needs Survey, to $111.9 billion. Table 3 compares the changes in needs from 1988 through 1992, and Appendix B provides a State-by-State comparison of how documented needs have changed since the 1990 Needs Survey.



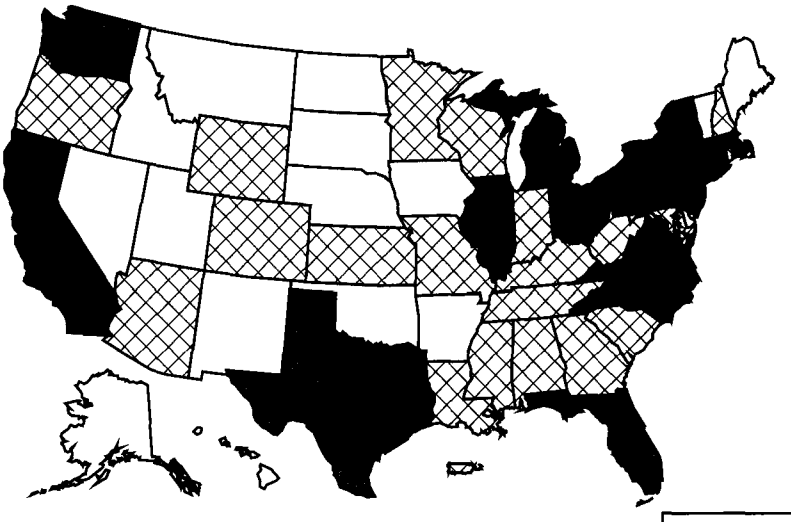
How Are the Documented Needs Distributed?

Figure 1 presents a geographical distribution of the total documented needs and shows that needs continue to be generally concentrated in the highly populated northern and Sunbelt States such as New York, California, Massachusetts, Ohio, and Florida. The less populated States, generally located in the Rocky Mountains and the Plains, have lower levels of documented needs. Appendix A provides a detailed presentation of needs for each State and U.S. territory.

Figure 2 presents a geographical distribution of the documented needs to correct 375 CSO (Category V) problems. As expected, the majority of the needs are in the eastern coastal States (EPA Regions 1–3), the Great Lakes States (EPA Region 5), and along the west coast (EPA Regions 9 and 10). This concentration of needs reflects the age of the infrastructure in these areas and the fact that combined sewers were acceptable control methods at the time these facilities were built.

FIGURE 1

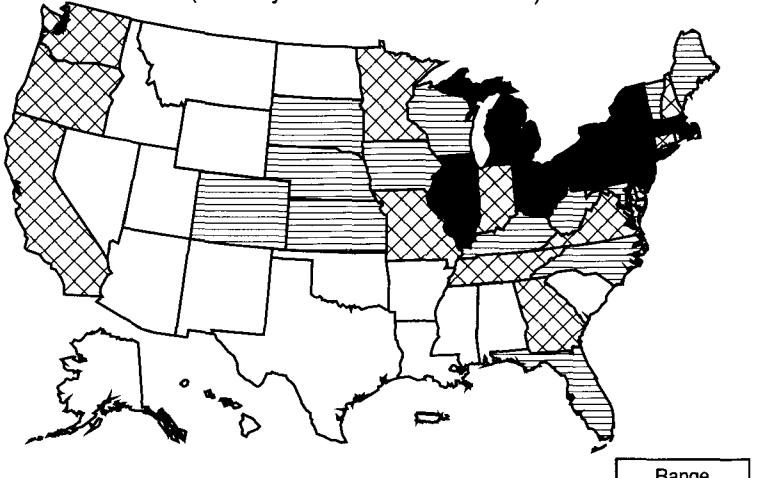
DISTRIBUTION OF DOCUMENTED DESIGN YEAR NEEDS
(January 1992 Dollars in Billions)



Total Documented Needs = $111.9 Billion

FIGURE 2

DISTRIBUTION OF DOCUMENTED DESIGN YEAR NEEDS
TO CORRECT COMBINED SEWER OVERFLOWS
(January 1992 Dollars in Billions)



Total Documented Design Year Needs to Correct Combined Sewer Overflows = $22.4 Billion

What Is the Status of Municipal Wastewater Treatment Infrastructure?

Sustained State and Federal investment has yielded significant improvements in the Nation's municipal wastewater treatment infrastructure. In the last 14 years, the number of secondary and advanced treatment facilities has steadily increased. Municipalities currently operate more than 20,000 treatment and collection facilities (serving a population of 180.6 million), of which 15,613 provide treatment. This represents a slight increase from 15,591 reported in the 1988 Needs Survey[1].

Presently, 14,745 or approximately 94 percent of all treatment facilities are providing at least secondary treatment compared to 13,802 facilities (89 percent) in 1988. Although 69 collection facilities may still discharge raw sewage, this is a decline from 117 facilities reported in 1988. The majority of these small collection facilities are located in rural areas and only experience raw discharges during periods of high loadings into the system. Table 4 characterizes the current treatment capabilities for all operating domestic wastewater facilities compared to 1988.

The infrastructure improvements from meeting the 1992 documented needs are summarized in Table 5. Major improvements would be made in the level of treatment provided. When all needs are met, facilities providing treatment will increase to 18,966 and the population served will increase to 251.4 million or 87 percent of the Nation.

[1] Comparisons are made to 1988 because comparable numbers were not developed from the 1990 Needs Survey.

TABLE 4

TREATMENT LEVEL OF OPERATIONAL FACILITIES

LEVEL OF TREATMENT	1988 NUMBER OF FACILITIES	1992 NUMBER OF FACILITIES	CHANGE
No Discharge	1,854	1,981	+7%
Less than Secondary	1,789	868	-52%
Secondary	8,536	9,086	+6%
Greater than Secondary	3,412	3,678	+8%
Total Facilities	15,591	15,613	+0%*

* Percent change is less than 0.5.

TABLE 5

INFRASTRUCTURE IMPROVEMENTS FROM MEETING DESIGN YEAR NEEDS

INDICATORS	IMPROVEMENT FROM 1992	IMPROVEMENT TO 2012	CHANGE
Number of treatment facilities providing secondary or more advanced treatment	14,745	18,830	+28%
Number of treatment facilities providing less than secondary treatment	868	68*	-92%
Design capacity of treatment facilities (million gallons per day)	39,380	45,542	+16%
Millions of people receiving treatment	181	251	+39%
Total number of operational facilities	15,613	18,966†	+22%

* Includes facilities granted Section 301(h) ocean discharge waivers and interim treatment facilities discharging to other facilities meeting secondary treatment or better.

† Level of treatment data were unavailable for 68 of these facilities, but it appears that these facilities will be at secondary treatment or better when all their needs have been met.

Reported/ Documented Needs

How Were the Needs Documented?

The documentation types for the 1992 Needs Survey were based on the 17 types used in the 1988 Needs Survey plus 7 added for 1990 to document new SRF eligibilities resulting from the 1987 CWA Amendments. Some additional alternative types for documenting small communities were added on a case-by-case basis as well.

Documentation is used both to verify the existence of needs and to present cost estimates to meet the needs. EPA reviewed State-submitted documentation for each new facility and each category of need to ensure that the documentation (1) *established that there was a current public health or water quality problem* and (2) was *project-specific* (e.g., documentation describing a county-wide problem of septic system failures due to poor soils was unacceptable to document the needs of a particular town in that county). The 24 EPA-approved documentation types for the 1992 Needs Survey are described in Appendix D, including their applicability for documenting needs or costs.

Once a State adequately documented a water quality or public health problem, EPA accepted it into the Needs Survey as a need regardless of whether a documented cost estimate was available. For documented needs without cost estimates, EPA used nationally derived cost curves to calculate the dollar value of needs.[2] The curves use level of treatment, general type of treatment, population, flow, and type of proposed improvement to generate cost estimates.

It is difficult to document needs and costs for projects serving small communities because in many cases local governments have not had the resources to develop the necessary planning and engineering studies. For this reason, EPA established less stringent documentation requirements for small community facilities. In general, alternative documentation for small communities consisted of a description of a need and a preliminary cost estimate from an engineer. Appendix D presents the alternative documentation types for accepting small community needs in the 1992 Needs Survey.

EPA strongly encouraged States to submit any available documentation of needs and costs for new enforceable requirements and other SRF expanded eligibilities (e.g., SW, NPS, and ground-water, estuarine, and certain wetlands protection activities). Since the new enforceable requirements and new SRF eligibilities were established by the 1987 CWA Amendments, many States have not yet been able to develop adequate documentation to establish needs and costs for inclusion in the 1992 Needs Survey. States should be able to document these newer needs for inclusion in future Needs Surveys as planning and engineering studies are completed. Needs and costs that do not meet EPA documentation requirements are discussed in the "What Are the Separate State Estimates?" section.

[2] Texas and Connecticut use their own State-derived and EPA-accepted cost curves to estimate costs for their sewers.

What Are the Separate State Estimates?

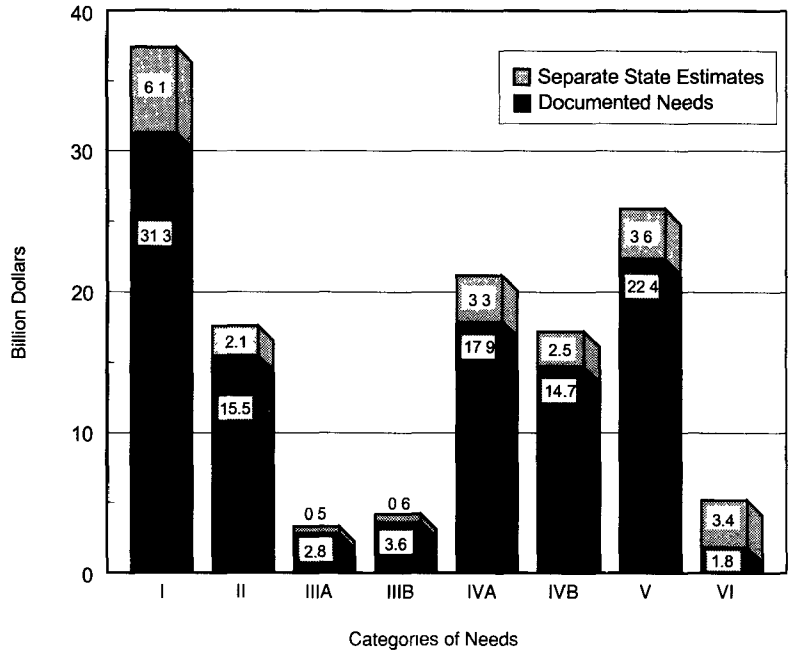
EPA provides States the opportunity to submit separate estimates for needs that they believe are valid but that do not meet EPA documentation criteria.

The States were allowed to report separate needs for the traditional needs categories (Categories I through VI). A total of 44 States reported needs that could not be documented using the EPA documentation types. Figure 3 compares the EPA and separate State estimates (SSEs). These needs, which are shown in Appendix A, represent a total of $22.1 billion in addition to the EPA documented needs. The types of cost estimates identified by the individual States are generally grouped into four broad categories:

- Needs to build centralized wastewater treatment facilities for unsewered communities that have not been adequately documented.
- Needs to build or expand wastewater treatment systems in small communities that are unable to secure funding through the SRF program or are unable to document the need.
- Needs to address CSO problems where no formal study that documents a public health or water quality problem exists.
- Needs for existing facilities that are currently operating at a satisfactory level but are projected to need replacement or a major upgrade during the next 20 years.

FIGURE 3

CHARACTERIZATION OF SEPARATE STATE ESTIMATES AND DOCUMENTED NEEDS BY CATEGORY
(January 1992 Dollars in Billions)



Separate State Estimates = $22.1 B
EPA Documented Needs for Categories I-VI = $110.0 B

What Are the Needs for Small Communities?

Small communities, particularly those communities with limited financial, technical, administrative and legal resources, are encountering difficulties qualifying for and repaying SRF loans. These communities have less access to private credit markets and are often compelled to delay addressing their needs. Small communities in particular cannot rely on economies of scale to the extent that large communities can. Nevertheless, they must continue to comply with CWA requirements.

The total documented need for wastewater treatment and collection systems for small communities was estimated at $13.4 billion. An additional $5.4 billion in SSEs (Categories I-V) was also reported. A small increase in needs for small communities resulted from adding alternative documentation types as explained below. A State-by-State listing of the total needs reported for small communities is presented in Appendix A.

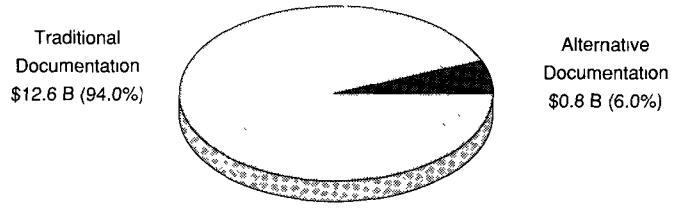
EPA defines a "small community" as a community with a wastewater treatment facility serving less than 10,000 people and processing no more than 1 million gallons of wastewater per day. These communities include small towns and rural areas that find it very difficult to finance needed projects because of their small financial base.

EPA made a special effort in the 1992 Needs Survey to obtain a better representation of the needs of small communities. Many small communities are not able to adequately document existing needs. For this reason, alternative documentation was accepted for documenting small community needs (see details under "How Were the Needs Documented?"). As shown in Figure 4, 10 States were able to document small community needs of $0.8 billion by using alternative documentation; more States are expected to be able to make use of alternative documentation in future Needs Surveys.

Figure 5, which presents small community and national

FIGURE 4

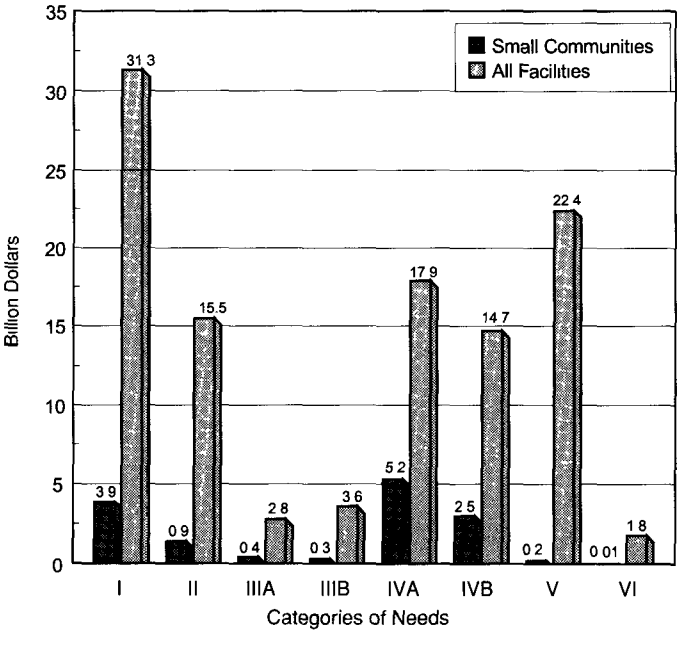
DOCUMENTED SMALL COMMUNITY NEEDS
(January 1992 Dollars in Billions)



Total Documented Small Community Needs for Categories I-VI = $13.4 B

FIGURE 5

CHARACTERIZATION OF SMALL COMMUNITY AND TOTAL DOCUMENTED NEEDS BY CATEGORY
(January 1992 Dollars in Billions)



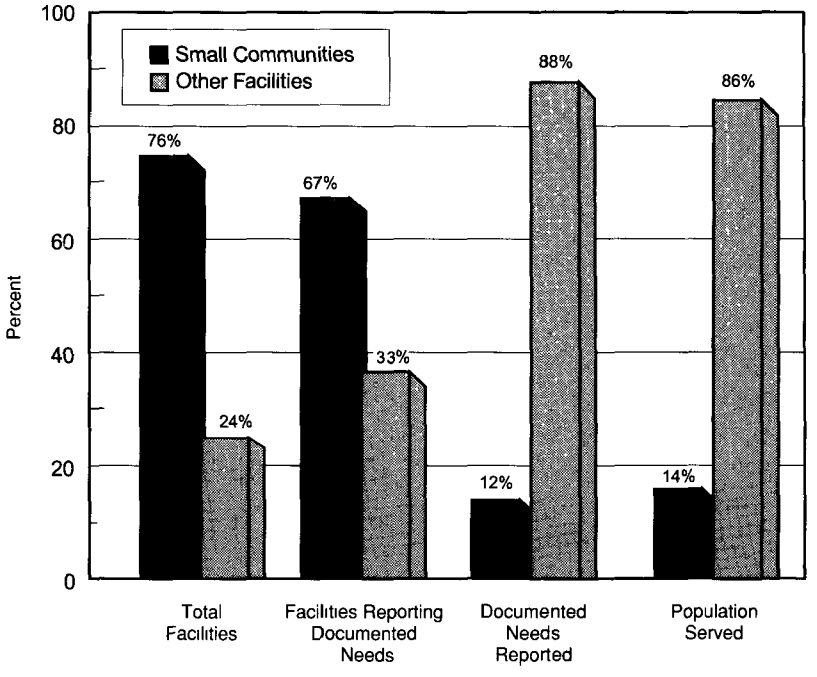
Total Documented Small Community Needs = $13.4 B
Total Documented Needs for Categories I-VI = $110.0 B

needs by category, demonstrates that small communities generally have the same proportionate mix in needs (by needs category) as the rest of the Nation except for collector sewer and CSO needs. As shown in this figure, approximately 30 percent of the needs reported for small communities are for secondary treatment (Category I). New collectors represent about 40 percent of the total documented needs. This large need for new collectors reflects the need to replace significant numbers of failing septic systems with centralized treatment and collection systems in rural settings where there are greater distances between dwellings. An additional difference in relative distribution of needs is that only a few very small communities have CSOs.

As shown in Figure 6, although a significant number of the total facilities (67 percent) reporting needs in this Needs Survey serve small communities, they account for only 12 percent of the total design year dollar needs of the Nation. Fourteen percent of the national population receiving collection or treatment will live in these small communities when all design year needs are met.

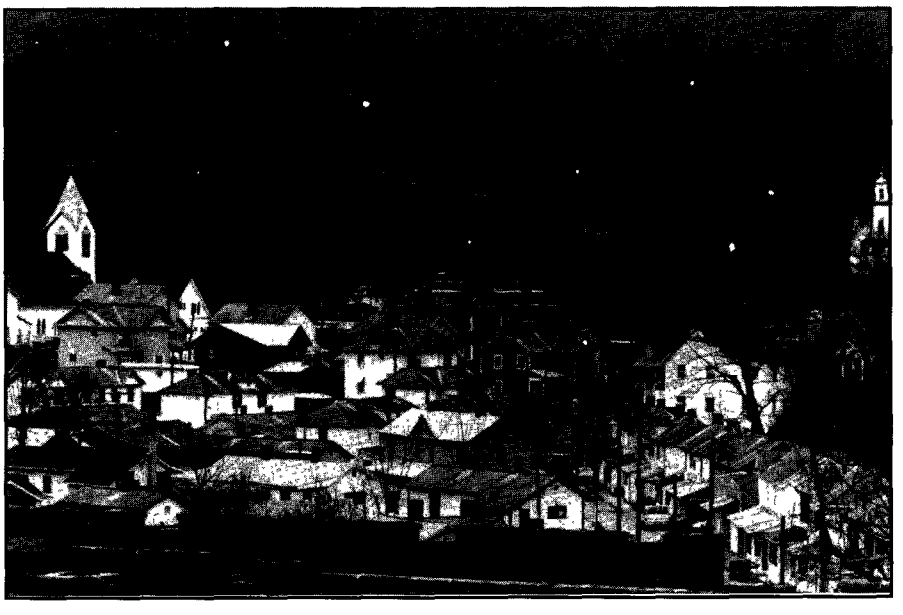
FIGURE 6

COMPARISON OF SMALL COMMUNITY FACILITIES TO THE NATION WHEN ALL DOCUMENTED NEEDS ARE MET
(January 1992 Dollars in Billions)



Total Facilities = 28,582
Total Documented Needs for Categories I-VI = $110.0 B

Note: This figure includes collection and treatment systems

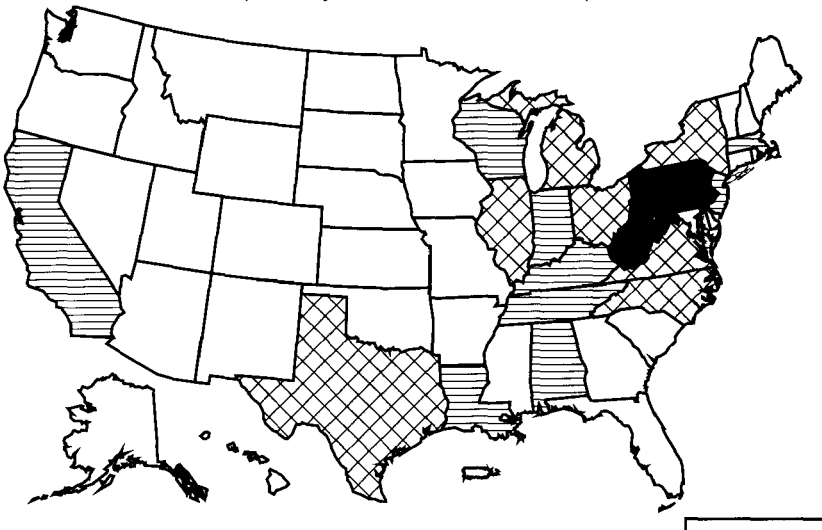


Geographic Distribution of Small Community Needs

To show how small community dollar needs are distributed geographically across the Nation, they are disaggregated by State in Figure 7. Needs are generally greatest in the mid-Atlantic and southern regions, with the notable exception of California. Two reasons account for these distributions of need: 1) some States have been more successful in funding small community needs, and 2) some States have better information about the needs of their small communities.

FIGURE 7

NATIONAL DISTRIBUTION OF DOCUMENTED SMALL COMMUNITY NEEDS - DESIGN YEAR NEEDS BY STATE FOR CATEGORIES I-VI
(January 1992 Dollars in Billions)



Total Documented Needs for Small Communities for Categories I-VI = $13.4 Billion

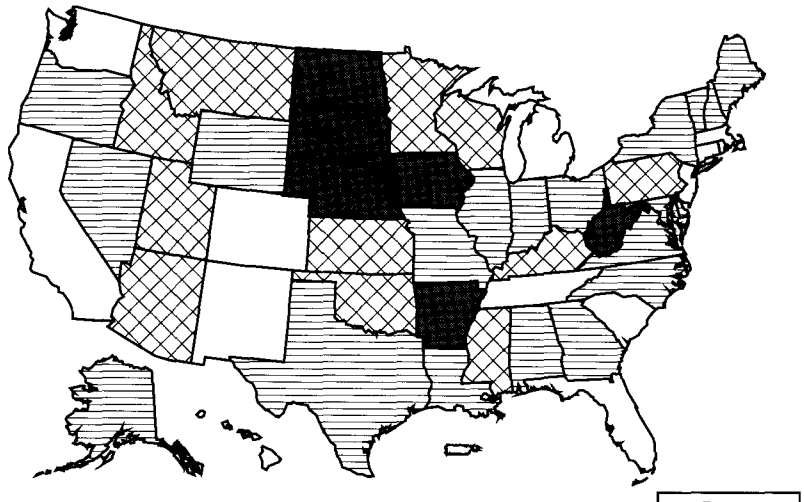
Proportional Small Community Needs Distribution

For comparison, Figure 8 shows the proportion of small community facilities to total facilities within each State. This figure helps highlight that although small community needs do not appear to be great in many States, they make up the major portion of all facilities in those States.

In future Needs Surveys, EPA will strive to increase the number of small community needs with adequate documentation, as well as to identify additional small community needs that are currently unidentified.

FIGURE 8

1992 SMALL COMMUNITY FACILITIES WHEN ALL DOCUMENTED NEEDS ARE MET
(Percent of Total State Facilities)



Small Community Facilities = 21,853
Total Facilities = 28,582

NOTE: This figure includes collection and treatment systems. Values for total facilities include multiple facilities for larger communities.

Modeled Needs

What Are Modeled Needs?

In 1991 and 1992, several bills were introduced in the Congress to define a technology-based requirement. Historically, the Needs Survey data base has lacked complete, documentable information on CSO correction needs. For the 1992 Needs Survey, EPA used a two-pronged approach to estimate CSO needs by obtaining more complete technical data needed to clarify the CSO picture nationally and by developing models which would generate national needs estimates.

With the 1987 CWA Amendments expanding the potential for using Federal funds for storm water and nonpoint source control needs, models were also developed to estimate the cost of these program development activities. EPA recognized that any modeling efforts it undertook for these programs would be very preliminary and incomplete in comparison to the precision it expected from the CSO modeling effort. Nonetheless, EPA undertook this first modeling effort for the 1992 Needs Survey, hoping to build a base for future refinements and additions as better planning and cost information became available.

How Were the Combined Sewer Overflow Needs Modeled?

BACKGROUND

Currently about 1,100 communities served by 1,303 CSO facilities nationwide use combined sewer systems, which are designed to carry sanitary and industrial wastewater and storm water. These facilities are mainly located in older cities in the Northeast, the mid-central States, and along the west coast. Combined sewer overflows occur when the capacity of the combined sewer system is exceeded during a storm event. During these storm events, part of the combined flow in the collection system is discharged untreated into receiving waters. The overflows may contain high levels of suspended solids, floatables, heavy metals, nutrients, bacteria, and other pollutants. Pollution from CSOs can pose health risks, degrade the ecology of receiving waters, and impair the beneficial use of water resources.

As point sources, CSOs are regulated under the CWA. In August 1989, EPA issued a CSO strategy reiterating that all CSO discharges must comply with both the technology-based and water quality-based requirements of the CWA. To implement the CWA requirements, permit writers develop case-by-case standards based on best professional judgment. States with CSO municipalities have submitted permitting strategies and started an implementation program.

In December 1992 EPA concluded a negotiated dialogue with State, municipal, and environmental organizations that resulted in publication of a draft CSO policy containing more specific guidance on controlling CSO problems. Briefly, the draft policy expects all permittees to develop long-term CSO control plans after considering a reasonable range of alternatives.

It should be noted that the final CSO policy may be different from the draft policy.

CSO DATA COLLECTION

The 1992 Needs Survey for CSO needs had two main purposes: 1) to improve statistical information on CSOs and 2) to develop national CSO estimates for complying with the CWA requirements.

EPA provided an opportunity for communities to describe their combined sewer systems more completely than was possible in the past. To accomplish this enhanced description, data on major interceptor areas served by combined and separate sewers, capacity limitations, the average number of overflows per year, and the amount of precipitation that causes an overflow were requested. This information helped EPA develop cost estimates from its models for alternative strategies and goals.

GOALS FOR CSO CONTROL MEASURES

When the Needs Survey data were collected in the summer of 1992, the draft CSO policy was not yet available. CSO needs submitted by the States were based on CSO abatement plans that were developed based on the States' interpretations of meeting CWA and water quality standards requirements. As a consequence, not all of the submitted, documented CSO correction needs correspond to the draft policy. To present a fair and consistent estimate of total national CSO control needs, EPA used a modeled estimate that closely corresponds to one approach for determining local design requirements allowed in the draft CSO policy.

CSO CONTROL POLICY

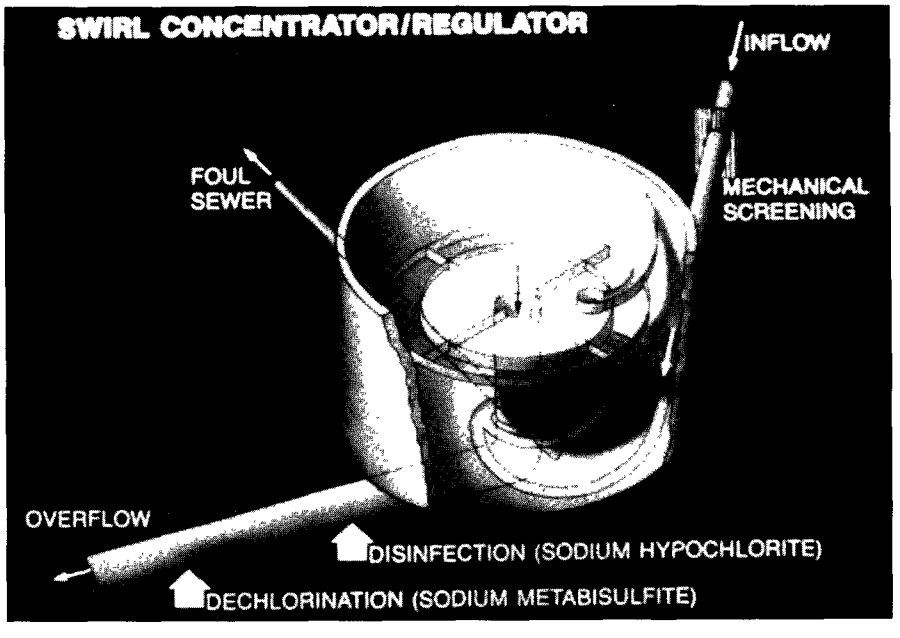
The long-term CSO control plans developed by municipalities should evaluate a wide range of controls that would be sufficient to meet CWA requirements, including technology- and water quality-based requirements. Considering the complexities in developing a control plan, when data, modeling, and other evidence do not give a clear picture, the draft strategy offers a "presumptive" approach. The presumptive approach allows a municipality three options to control their CSOs: (1) limiting, on average, the number of overflow events to between four and seven per year, (2) eliminating or capturing for a minimum of primary treatment no less than 85 percent by volume of the annual rainfall flow through the system, or (3) eliminating or reducing the mass of pollutants equivalent to the above 85 percent volume control. In addition, the presumptive approach establishes a minimum of primary clarification, solids and floatables disposal, and, if appropriate, disinfection of the CSO flows controlled by the municipality.

COST-ESTIMATING METHODOLOGY

The methodology developed to address CSO needs was based on draft CSO policy option 2 (described above), which requires elimination or capture for treatment of no less than 85 percent by volume. EPA determined that this option would represent the most likely approach for most municipalities since in many cases it would be the least costly approach. The cost estimate was developed as follows:

- ***Review and analyze rainfall records.*** Rainfall records were analyzed to determine typical rainfall patterns for that area of the country. This rainfall pattern tells the amount of rain expected for a given land area.

- ***Estimate combined sewer flows.*** Of the total amount of



rainfall, only a certain percentage enters the collection system. This percentage, called the runoff coefficient, was estimated form the information supplied by the States about the sewer system characteristics. Based on these assumptions, flows resulting from storm events were calculated.

- ***Calculate flows that require CSO control measures.*** Using the estimated flow and the typical rainfall pattern for the area, a design flow to treat 85 percent of the average total storm flow into the collection system was calculated. It was assumed that a small part of this flow, equal to 50 percent of the current POTW treatment capacity, would be treated at the POTW and the rest would be treated at specially designed and constructed CSO treatment facilities.

- ***Determine required facilities to provide the additional treatment.*** CSO treatment facilities were assumed to consist of primary sedimentation, chlorine disinfection, and dechlorination. Primary treatment units were sized for an overflow rate of 1000 gallons/square feet/day. For a side wall depth of 11.2 feet, these sedimentation tanks provide 2 hours of detention time.

- ***Calculate cost of additional treatment facilities.*** Unit costs for sedimentation facilities were taken from EPA documents and the contractor's in-house documents. A 35 percent contingency and engineering cost was added to the unit costs.

A more detailed description of the methodologies can be found in a separate supplementary document.

MODELED ESTIMATE FOR 1992 CSO NEEDS

EPA's estimate of the national CSO correction cost is $41.2 billion. This estimate is consistent with the draft 1992 CSO policy presumptive approach described above. The modeled estimate compares to State-documented costs of $22.4 billion for 375 of the approximately 1,303 CSOs needing correction.

How Were the Storm Water and Nonpoint Source Estimates Prepared?

STORM WATER

Storm water (SW) runoff from urban areas is a significant contributor to the surface water quality impairment of the Nation's waters. SW runoff from urban and industrial areas typically contains significant quantities of pollutants that are similar to those found in wastewater and industrial discharges and, consequently, have been found to cause similar impacts on water quality. Pollutants commonly found in SW runoff include nitrogen, phosphorus, sediment, heavy metals, pesticides, herbicides, biochemical oxygen demand (BOD), and synthetic organic compounds. In addition to pollutants, the increased quantity of SW discharged from rapidly urbanizing areas also poses a threat of significant impact on aquatic ecosystems due to physical alterations.

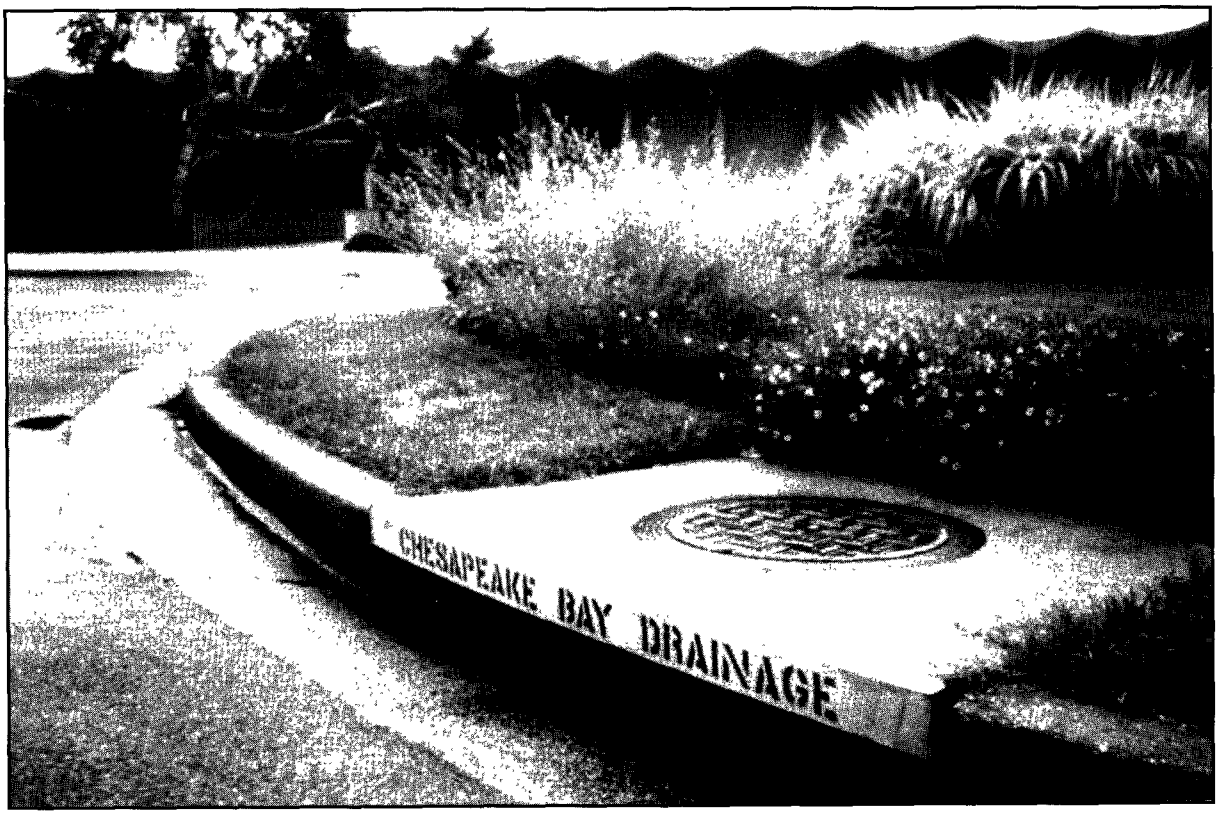
How Is Storm Water Regulated?

To help improve the quality of SW discharges, Congress amended the CWA in 1987 to add Section 402(p), which directs EPA to develop National Pollutant Discharge Elimination System (NPDES) permit application requirements for the following classes (types) of SW discharges:

- Discharges from municipal separate storm sewer systems (MS4s) serving a population of 100,000 or more;
- SW discharges associated with industrial activity; and
- SW discharges that the Administrator (or the State, as the case may be) determines contribute to a violation of a water quality standard or are significant contributors of pollutants to waters of the United States.

Section 402(p)(3) of the CWA specifies that permits for MS4s serving a population of 100,000 or more must meet a new statutory standard that requires controls to reduce the discharge of pollutants to the maximum extent practicable. The legislative history for this provision indicates that permits for MS4 discharges will not necessarily require traditional end-of-pipe controls; rather, they will require municipalities to develop and implement site-specific SW management programs.

Under NPDES regulations, municipalities submit a two-part application for discharges from their SW systems. Part 1 of the



permit application focuses primarily on existing information to characterize the municipal system. In Part 2 of the application, the municipality (or county) submits additional information to characterize the system, proposes a municipal SW management program to control pollutants from the system to the maximum extent practicable, provides an assessment of the effectiveness of the proposed controls, proposes a 5-year monitoring program, and provides a fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the proposed management program.

The regulations and guidance for Part 2 applications identify 19 components of an SW management program, which are organized into 4 classes of controls: (1) measures to reduce pollutants in runoff from commercial and residential areas, (2) measures to detect and remove illicit connections and improper disposal into storm sewers, (3) measures to reduce pollutants in runoff from industrial sites, and (4) measures to reduce pollutants in runoff from construction sites.

Currently, based on the 1990 Census, there are 254 incorporated municipalities and urbanized, non-incorporated areas of counties that have MS4s serving a population of 100,000 or more. EPA will not issue NPDES permits for MS4s serving municipalities or urbanized, unincorporated areas having a population of less than 100,000 people until October 1, 1994.

The regulatory definition of "storm water discharges associated with industrial activities" includes a wide variety of facilities that may be owned or operated by municipalities. Some examples are vehicle maintenance operations, wastewater treatment plants, sanitary landfills, airports, highway maintenance facilities, and electrical power generating facilities. However, section 1068(c) of the Intermodal Surface Transportation Act of 1991 provides that EPA shall not require any municipality with a population of less than 100,000 to apply for or obtain a permit for any SW discharge associated with an industrial activity other than an airport, power plant, or uncontrolled sanitary landfill owned or operated by such municipality before October 1, 1994, unless an NPDES permit has already been issued or the discharge has been determined to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States. (An uncontrolled sanitary landfill as used here means a landfill or open dump, whether opened or closed, that does not meet the requirements for runon and runoff established pursuant to subtitle D of the Solid Waste Disposal Act.)

In the coastal zone, diffuse urban runoff and discharges from MS4s serving less than 100,000 people are subject to the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990. See separate discussion under "What Is Nonpoint Source Pollution?"

Goals of The 1992 Storm Water Needs Survey

One of the goals of the 1992 Needs Survey data collection effort was to develop a methodology to estimate costs of implementing NPDES SW programs on a nationwide basis. For the purpose of the 1992 Needs Survey, the SW needs assessment is limited to activities for developing and implementing municipal SW management programs pursuant to NPDES permits for discharge from municipal separate storm sewer systems. Some examples of SRF-eligible program development and implementation costs are:

- Review existing statutory authority and develop new statutes or regulations;
- Develop training materials and train new staff;
- Develop public education materials; and
- Purchase equipment needed to carry out an SW management program.

Over the course of future Needs Surveys, the methodology will be refined to estimate costs for SW management more accurately, especially costs for structural controls that may be eligible for SRF funding. Total SW program control costs (most of which are annual operating costs, ineligible for SRF funding) are beyond the scope of the Needs Survey, which reports only eligible capital costs.

Cost-Estimating Methodology

The steps used to estimate costs for the development of SW control plans were as follows:

- ***Extract cost components from Part 2 permit applications.*** Costs for components of municipal SW control programs were extracted from a selected sample of Part 2 permit applications and categorized as new or continuing program costs. Only new program costs were used in this estimate.

- ***Develop average cost components.*** Average costs for program components determined to be "capital" costs (i.e., one-time costs for assessments, development of new statutes or regulations, equipment purchases, developing training and educational materials, etc.) and thus SRF-eligible were calculated.

- ***Calculate per capita costs.*** Using these cost data, per capita costs of $1.46 were calculated and applied to the total regulated population of approximately 80 million.

A more detailed description of the methodology can be found in a separate supplementary document.

Limitations of Storm Water Cost Modeling

The modeled estimate of national SW management costs totalled $116.5 million. This is only the estimated SRF-eligible portion of costs municipalities are expected to incur to develop an SW management program in response to the NPDES regulations governing MS4s. *The methodology was based on a limited sample and could well have resulted in understating the need.*

The following costs are *not* included in the SW estimates presented in this report due to insufficient information or ineligibility:

- O&M costs for SW management (since they are ineligible for SRF funding).

- Costs for developing the Part 1 and Part 2 applications.

- Costs for continued operation of the programs proposed in Part 2 of the application.

- Costs for constructing extensive SW retention and treatment devices. It should be noted, however, that eight States submitted documented estimates totaling $1.8 billion for SW control facilities. A large portion of this is for conveyance facilities, rather than retention and treatment.

- Costs for controlling runoff from industrial activities owned and operated by municipalities.

- Costs for establishing programs for controlling discharges from municipal SW sewers serving less than 100,000 people.

Costs for SW structural controls could run into tens of billions of dollars. In addition, O&M costs for the continued operation of municipal SW programs as well as O&M of control facilities are significant. These facilities are very expensive to maintain, perhaps in the order of billions of dollars per year.

EPA believes the modeled estimate is reasonable, considering how few of the total SW program implementation costs the model attempted to estimate. Information that would provide a basis for modeling all potential costs for implementing the SW program were not available for this first modeling effort. Further work needs to be done to develop cost estimates for structural and other management practices that may need to be implemented by many cities.

What Is Nonpoint Source Pollution?

Nonpoint source (NPS) pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural pollutants and pollutants resulting from human activity, finally depositing them into lakes, rivers, wetlands, coastal waters, and ground waters. NPS pollution is *not* regulated by NPDES permits.

Sources of NPS pollution include agriculture (croplands, pasture and grazing lands, and small confined animal facilities); silviculture (timber cutting and other forestry operations); diffuse runoff, including sand and snowmelt materials, from paved surfaces, roads, and bridges; drainage from abandoned mines and other past resource-extraction operations; hydrologic modification; construction activities; and inappropriate disposal of wastes on the land.

The distinction between NPS and diffuse point sources is sometimes unclear and difficult to distinguish. Although diffuse runoff is generally treated as NPS pollution, runoff that enters and is discharged from conveyances such as those described in the SW section is treated as a point source discharge and hence is subject to the permit requirements of the Clean Water Act. In contrast, NPS discharges are not subject to Federal permit requirements. Under section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA), municipal and commercial SW discharges in the coastal zone that are not covered by Phase I of the SW permit program, must comply with the requirements of the CZARA. States are encouraged to develop consistent approaches in dealing with urban SW runoff.

Goals of the 1992 NPS Needs Survey

The 1987 amendments to the CWA allow the use of SRFs to fund selected non-Federal NPS control activities that are contained in approved Section 319 NPS Management Plans. This Needs Survey is an initial effort to report NPS needs that are potentially eligible for SRF funding. Documented NPS needs of $693 million were reported by 12 States in the 1992 Needs Survey and are shown in Appendix A. Since few States have developed comprehensive estimates for nonpoint source control, EPA developed a "model" to estimate national costs.

What Is Included or Excluded From the NPS Estimates?

The modeled estimates include activities to develop and implement NPS management programs to control runoff from agriculture (cropland, pastureland, and rangeland), confined animal facilities with fewer than 1000 animal units, and silviculture.

EPA did not develop a modeled needs estimate for other sources of NPS pollution, including abandoned mine lands; atmospheric deposition; hydrologic modifications; construction; inappropriate land disposal; marinas; runoff from streets, highways, and bridges; urban/suburban areas not covered by NPDES SW permits; and remediation of polluted sediments causing a water quality problem. EPA attempted to develop an estimate for control devices or management practices to reduce pollution from abandoned mines, but reliable inventory data and sufficient information on remediation technologies were not available. Note that this could potentially be a very large cost to States with significant numbers of abandoned mines.

Additional NPS costs that were excluded include ineligible, recurring O&M costs as well as technical assistance, engineering, and related services that are often provided to farmers or others free of charge by Federal and State agencies.

Inclusions

- agriculture
  - cropland, rangeland, pastureland
  - confined animal feedlots
- silviculture

Exclusions

- federal lands
- abandoned mines
- inappropriate land disposal of wastes
- O&M

Modeled Needs Estimate for NPS Controls

The total modeled need reported for agriculture, confined animal facilities, and silviculture is $8.8 billion. Table 6 summarizes the estimates by category. The methodologies used to develop the estimates are presented in the paragraphs that follow. A more detailed description of the methodologies can be found in a separate supplementary document. These estimates are preliminary and will be refined for the next Needs Survey.

TABLE 6

MODELED NEEDS FOR NONPOINT SOURCE POLLUTION CONTROL
(January 1992 Dollars in Billions)

NEEDS CATEGORY	DESIGN YEAR NEEDS
Agriculture (Cropland, Pastureland, and Rangeland)	3.7
Confined Animal Facilities (< 1000 animal units)	2.7
Silviculture	2.4
GRAND TOTAL	8.8

CROPLAND, PASTURELAND, AND RANGELAND

Runoff from crop production and grazing land carries primarily sediments, salts, nutrients, and pesticides to the downstream receiving waters. Sediments generally result from erosion of cropland and grazing land. Excessive chemical fertilizer application or animal manure on land frequently results in high concentrations of nitrogen and phosphorus in runoff or leaching of nitrogen to ground water. Pesticide applications on cropland and pastures can introduce toxic pollutants into both surface water and ground water.

The estimated need for controlling runoff from cropland, pastureland, and rangeland is $3.7 billion. A discussion of the methodology used to develop the estimate follows.

Methodology

A cost-estimating methodology was developed to address control of erosion and pollutant export from cropland and grazing land. The methodology is based on applying a "best management system." A best management system is a combination of soil conservation practices and other management measures that, when applied, will achieve NPS pollution control through reduced transport of sedimentation, nutrients, and chemicals into surface and ground water.

Erosion control was addressed by implementation of soil conservation practice groups identified by USDA's Agricultural Stabilization and Conservation Service (USDA-ASCS). Water quality management was addressed by applying additional control measures, such as nutrient management, pesticide management, and irrigation water management.

The primary objective in developing this cost-estimating methodology was to search for best management practices (BMPs) (those that are the best available and economically achievable) and estimate the implementation costs. This was accomplished as follows:

- ***Review National Resources Inventory (NRI) data.*** This national data base provides data on area of farm land, crop type, soil erosion rate, soil loss tolerance, slope, and conservation practices in use in 1987.
- ***Develop a Best Management System.*** If land required erosion control, conservation practice groups were selected to reduce soil erosion to the soil loss tolerance level specified for that land. Additional measures to provide water quality management were also selected to complete the best management system.
- ***Determine needs for cropland, pastureland and rangeland.*** Total capital costs of erosion control and water quality management were computed for cropland, pastureland and rangeland in each State.

CONFINED ANIMAL FACILITIES

A confined animal facility is a lot or facility used for raising or housing animals, processing and storing products, manure and runoff storage areas, and silage storage areas.

Runoff from confined animal facilities may contain nutrients, oxygen-demanding substances, organic solids, salts, and sediments. Runoff includes process-generated wastewater and precipitation that comes into contact with manure, litter, or other material used in or resulting from the production of animals.

For the purposes of this Needs Survey, costs were estimated only for confined animal operations with fewer than 1000 "animal units." Confined animal operations (feedlots) with 1000 or more animal units are considered "point sources," and estimating costs for facilities to control runoff from them was beyond the scope of the modeling effort. The relationship between "animal unit" and number of animals is shown below.

The estimated need for controlling runoff from confined animal facilities is $2.7 billion. A discussion of the methodology used to develop EPA's estimates follows.

Methodology

The methodology is based on model feedlot facilities, which were intended to represent typical facility sizes within each livestock category. Livestock categories considered are beef feedlots, dairies, swine feedlots, and broiler and layer houses. The approach used is similar to that used in the economic analysis for the CZARA, and cost data from that analysis were used in developing the Needs Survey cost estimates.

It was assumed that facility runoff was going to be controlled primarily through diversions for runoff containment and channeling of on-site effluent to the ultimate control structures. All runoff collected in these control structures was assumed to be used for irrigation.

The steps in estimating the cost of controlling NPS pollution from feedlot operations were as follows:

- ***Identify model feedlots.*** Model feedlots were obtained to represent typical facility sizes within each livestock category.
- ***Develop NPS management plan.*** NPS runoff control measures were identified, and a typical management plan was selected for the model feedlots in each livestock category.
- ***Estimate needs for confined animal facilities.*** The number of livestock operations in each model feedlot was obtained from the 1987 Census of Agriculture data for each State. The total cost of implementing the NPS management plan was then estimated using this national data base. Estimates for two control options were developed. Option 1 included lined retention ponds and irrigation for ultimate disposal. Option 2 also included irrigation for ultimate disposal but used filter strips in lieu of lined retention ponds, a technique that is also appropriate. The estimate presented in this report is for Option 1. This is considered by the agricultural community to be the more effective approach although it has the higher cost of the two options.

Type of Animal	No. of Animals	Animal Units
Dairy Cattle	0.7	1
Beef Cattle	1.0	1
Swine	2.5	1
Layers	100.0	1
Broilers	100.0	1

SILVICULTURE

Silvicultural activities have the capability of degrading water and habitat quality if sufficient care is not taken to prevent adverse effects. Sediment from erosion due to access roads and other harvesting activities, temperature increase due to riparian shade removal, and pesticides and fertilizers used during timber operations are some of the major pollutants exported from timber-harvesting sites to receiving waters.

The estimated need for controlling runoff from silvicultural operations is $2.4 billion. A discussion of the methodology used to develop EPA's estimate follows.

Methodology

The methodology developed for estimating the costs of controlling NPS pollution from silvicultural activities employed the following components:

- ***Develop estimates of annual forestland area harvested per State.*** The area of forestland harvested annually was computed by using the U.S. Forest Service's *Forestry Statistics of the United States, 1987*. The distribution of the timberland area in relation to the type of terrain and presence of streams, however, was developed by considering the geographical characteristics of each State. Only privately owned forest lands were considered.

- ***Identify silviculture best management practices (BMPs).*** Silviculture BMPs were identified to control erosion from roads built to gain access to harvesting sites, to control the introduction of pesticides into watercourses, to maintain the stability of stream banks, and to ensure the revegetation of harvested sites, among other purposes. BMPs assumed were similar to those used for CZARA but were more refined.

- ***Identify typical comprehensive management plans.*** Typical comprehensive management plans were identified for controlling pollution and adverse habitat impacts for various site and timber characteristics.

- ***Develop cost estimates for management plans.*** Estimates for the per acre cost of implementing BMPs were obtained for various types of forest management units (FMUs). These estimates indicated that the greatest variations in BMP implementation cost were caused by the general slope of the FMU and the presence or absence of a watercourse on an FMU.

- ***Estimate needs for silvicultural activities.*** Total costs of managing NPS pollution from silvicultural activities were estimated for each State. Six scenarios representing three different assumptions as to the percentage of forest harvested from shallow, moderate, and steep slopes and the presence or absence of nearby watercourses were evaluated. The estimate presented in this report is the average of the six scenarios. (The lowest-cost scenario and the highest-cost scenario differed by only 15 percent.)

Limitations of Nonpoint Source Control Modeling

The estimates presented in the 1992 Needs Survey represent EPA's initial effort to assess needs nationally for selected aspects of NPS control. The estimates are preliminary and represent only a portion of the expected NPS activities (specifically, agriculture and forestry). Estimates will be refined and enhanced in future Needs Surveys.

Several cautions on use of this information are appropriate:

- The model for agriculture used the 1987 National Resource Inventory (NRI) data base. The U.S. Department of Agriculture (USDA) has been implementing the Conservation Reserve and Conservation Compliance programs since the 1987 NRI data base was assembled. As of late 1992, 35.4 million acres were enrolled in the Conservation Reserve Program. An additional 60 million acres are being treated under conservation compliance. Thus, the NPS needs estimates for highly erodible cropland may be overstated.

- The estimates for confined animal facilities were prepared assuming *no* controls were in place. Therefore, the estimates presented may overstate the real need.

- Estimates for NPS BMPs assumed that practices and requirements developed under CZARA would be applied nationwide. As yet the CWA does not make such a requirement, and it has not been determined whether future amendments to the CWA will be equivalent to those in the CZARA. Therefore, the cost estimates developed for agriculture and silviculture would change equivalently.

- While NPS costs that were estimated may be overstated, other SRF-eligible areas with potentially very high costs, such as nonpoint source runoff from abandoned mines, were not included.

- While State-by-State estimates may be possible for the activities analyzed for this report, those figures would probably not accurately reflect the distribution of needs for all NPS activities eligible for SRF funds.

- The estimates for agricultural controls, confined animal controls, and silvicultural controls are for capital investment or initial implementation of NPS controls, not ongoing costs of operation and maintenance, which are not eligible for SRF funds and represent a portion of the costs for NPS control.

Concluding Remarks

How Comprehensive Is the 1992 Needs Survey?

The 1992 Needs Survey is the most complete and comprehensive survey undertaken yet. The States completed a significant data collection effort to document not only the new needs, but also those needs which were identified, but not included in the 1990 Needs Survey. Documented needs for advanced wastewater treatment significantly increased because the installation of controls to meet secondary treatment has proven to be insufficient to meet water quality standards in many cities. Needs for secondary treatment and collector sewers also increased substantially associated with a growing and shifting population. The reporting of needs for CSOs, SW, and NPS also improved significantly with better documentation and the use of various modeling techniques.

Although the scope and quality of needs reporting have improved, a number of gaps remain. Moreover, many States lack the resources to collect and report current information to EPA, including technical information and flow and population served by the facilities. As noted above, water quality standards continue to be revised to control toxics, nutrients, and other pollutants. Additionally, while EPA made a good first attempt to estimate the SRF-eligible needs for SW and NPS runoff, we recognize that the full scope of needs covered by these programs has not been fully addressed in this report. EPA expects that needs for these various activities eligible for SRF assistance will be more fully addressed in future Needs Surveys.

Glossary

NOTE: Definitions are provided to help the reader understand the terms used, but are not necessarily to be used for legal purposes.

Abandoned Mine Land (AML)
Land mined prior to the implementation of the Surface Mining Control and Reclamation Act that has not been adequately reclaimed and is adversely affecting public health and safety or the environment.

Advanced Treatment
See Categories of Needs, Category II.

Best Available Technology (BAT)
Defined in the 1972 Clean Water Act as the very best control and treatment measures that have been or are capable of being achieved.

Best Conventional Technology (BCT)
Defined in the 1977 Amendments to the Clean Water Act as the very best control and treatment measures that have been or are capable of being achieved for conventional pollutants, such as biological oxygen demand, suspended solids, fecal coliform bacteria, and pH.

Best Management Practice (BMP)
A practice or combination of practices that are determined to be an effective and practicable (including technological, economic, and institutional considerations) means of controlling point and nonpoint pollutants at levels compatible with environmental quality goals.

Best Management System
A combination of conservation practices or management measures that, when applied, will achieve desired nonpoint source pollution control through reduced transport of sediment, nutrients, and chemicals into surface and ground water.

Categories of Needs
Needs estimates address the following categories:

1) **Secondary Treatment (Category I)**
The minimum level of treatment that must be maintained by all treatment facilities except those facilities granted ocean discharge waivers under section 301(h) of the Clean Water Act. Treatment levels are specified in terms of the concentration of conventional pollutants in the wastewater effluent discharged from a facility after treatment. Secondary treatment requires a treatment level that will produce an effluent quality of 30 mg/l of BOD5 and TSS. In addition, the secondary treatment must remove 85 percent of BOD5 and TSS from the influent wastewater. Needs reported in this category are necessary to attain secondary treatment. Needs to attain incremental reductions in conventional pollutant concentrations beyond secondary treatment requirements are included in Category II.

2) **Advanced Treatment (Category II)**
A level of treatment more stringent than secondary treatment or a significant reduction in nonconventional pollutants present in the wastewater treated by a facility. Needs reported in this category are necessary to attain incremental reductions in pollutant concentrations beyond basic secondary treatment.

3) **Infiltration/Inflow Correction (Category IIIA)**
Control of the problem of penetration into a sewer system of water other than

Glossary

wastewater from the ground through such means as defective pipes or manholes (infiltration) or from sources such as drains, storm sewers, and other improper entries into the system (inflow). Included in this category are costs for correction of sewer system infiltration/inflow problems. Costs also are reported for preliminary sewer system analysis and for detailed sewer system evaluation surveys.

4) **Replacement/Rehabilitation of Sewers (Category IIIB)**
Reinforcement or reconstruction of structurally deteriorating sewers. This category includes cost estimates for rehabilitation of existing sewer systems beyond those for normal maintenance. Costs are reported if the corrective actions are necessary to maintain the structural integrity of the system.

5) **Collector Sewers (Category IVA)**
Pipes used to collect and carry wastewater from an individual source to an interceptor sewer that will convey the wastewater to a treatment facility. This category includes the costs of constructing new collector sewer systems and appurtenances.

6) **Interceptor Sewers (Category IVB)**
Major sewer lines receiving wastewater flows from collector sewers. The interceptor sewer carries wastewater directly to the treatment plant or to another interceptor. This category includes costs for constructing new interceptor sewers and pumping stations necessary for conveying wastewater from collector sewer systems to treatment facilities or to another interceptor.

7) **Combined Sewer Overflows (CSO) (Category V)**
A discharge of a mixture of storm water and untreated domestic wastewater that occurs when the flow capacity of a sewer system is exceeded during a rainstorm. Costs reported are for facilities to prevent or control periodic bypassing of untreated wastes from sewers that convey a combination of wastewater and storm water to achieve water quality objectives. This category does not include costs for overflow control allocable to flood control or drainage improvement, or for treatment or control of storm water in separate storm and drainage systems.

8) **Storm Water Pollution Control (SW) (Category VI)**
Activities to plan and implement municipal storm water management programs pursuant to National Pollutant Discharge Elimination System (NPDES) permits for discharges from municipal separate storm sewer systems. This includes structural and nonstructural measures that (1) reduce pollutants from runoff from commercial and residential areas that are served by the storm sewer, (2) detect and remove illicit discharges and improper disposal into storm sewers, (3) monitor pollutants in runoff from industrial facilities that discharge to municipal separate storm sewers, and (4) reduce pollutants in construction site runoff.

Collector Sewers
See Categories of Needs, Category IVA.

Combined Sewer Overflows (CSO)
See Categories of Needs, Category V.

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Combined Sewer Systems
Sewer systems designed to carry both domestic sanitary wastewater and storm water.

Confined Animal Facility (Feedlot)
A facility for the controlled feeding of animals that tends to concentrate large amounts of animal waste that cannot be absorbed by the soil and, hence, may be carried to nearby streams or lakes by rainfall runoff. Facilities with less than 1000 animal units are generally considered nonpoint sources. Facilities with more than 1000 animal units or facilities with water quality problems are point sources and are regulated under NPDES.

Conservation Practice Group
Combination of practices identified by the Agricultural Stabilization and Conservation Service of the U.S. Department of Agriculture to address erosion control and water quality for agricultural land.

Conveyance Needs
The cost estimate to construct, expand, or upgrade sewer systems for transporting wastewater to treatment plants.

Design Year Needs
The cost estimate for building publicly owned wastewater treatment facilities eligible for assistance under the CWA to serve the population expected within 20 years.

Facilities Plans
Plans and studies that directly relate to the construction of treatment works necessary to comply with the Clean Water Act. A facilities plan investigates needs and provides information on the cost-effectiveness of alternatives. A recommended plan and an environmental assessment of the recommendations are also presented in a facilities plan.

A facilities plan includes a description of the treatment works for which construction drawings and specifications are to be prepared. The description includes preliminary engineering data, cost estimates for design and construction of the treatment works, and a schedule for completion of design and construction.

Fertilizer
Any organic or inorganic material of natural or synthetic origin that is added to soil to supply elements essential to plant growth.

Forest Management Unit (FMU)
A parcel of forestland that is harvested, regenerated, and managed as a single entity. Its size in area, shape, and boundaries are determined by operational considerations, such as forest cover type, forest age, density of trees, timber merchantability, soil productivity, and presence of natural boundaries, such as ridge tops, streams, and roads.

Herbicide
A chemical substance designed to kill or inhibit the growth of plants, especially weeds.

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Infiltration/Inflow Correction
See Categories of Needs, Category IIIA.

Interceptor Sewers
See Categories of Needs, Category IVB.

Lagoon
A pond in which algae, sunlight, and oxygen interact to restore wastewater to a quality that is often equal to that of the effluent from the secondary treatment stage. Lagoons are widely used by small communities to provide wastewater treatment.

Municipal Separate Storm Sewer
Any pipe or system of pipes that is owned or operated by a State or local government entity used for collecting and conveying storm water.

National Pollutant Discharge Elimination System (NPDES)
A provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA, a State, or (where delegated) a tribal government on an Indian reservation.

National Resources Inventory (NRI)
A national data base for all non-Federal rural lands that provides information on the status, condition, and trends of soil, water, and related resources.

Need
The estimated eligible cost for constructing publicly owned wastewater treatment facilities and funding Sections 319 and 320 activities that are potentially eligible for Federal financial assistance under the Clean Water Act.

Needs for the Traditional Eligibilities (Categories I - V)
Documented cost estimates for the seven categories of needs for publicly owned wastewater treatment facilities. These needs are limited to the costs eligible for Federal financial assistance under Title II of the Clean Water Act.

New State Revolving Fund Eligibilities
The 1987 Amendments to the Clean Water Act allow State Revolving Funds (SRF) to be used to fund certain activities that are now eligible for funding under Title VI of the CWA. These new eligibilities include certain nonpoint source pollution control, ground-water protection, estuarine protection, and wetlands protection activities.

1) **Estuarine Protection**
   Activities necessary to develop and implement Comprehensive Conservation and Management Plans for protecting estuaries under the National Estuary Program. Estuarine protection activities focus on restoring and maintaining the chemical, physical, and biological integrity of the estuary and controlling nonpoint sources of pollution.

2) **Ground-Water Protection**
   Activities addressed in a State's ground-water protection strategy that must be a part of the nonpoint source management program under section 319(i) of the Clean Water Act to build State institutional capabilities to protect ground-

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water resources from nonpoint sources of contamination. Activities include demonstrations, enforcement, technical assistance, education, and training. Wellhead protection and underground injection control for Class V wells, as well as water conservation programs, may be included.

3) **Nonpoint Source Pollution Control**
Activities to implement an EPA-approved State nonpoint source management program. Nonpoint sources are pollution sources that are diffuse and do not enter surface waters from a discernible, confined, and discrete conveyance (such as a pipe or ditch). Pollutants are generally carried off the land by storm water runoff or melting snow. Sources of nonpoint source pollution include agriculture; confined animal facilities with less than 1000 animal units; silviculture; diffuse runoff, including sand and snowmelt materials, from paved surfaces, roads, and bridges; drainage from abandoned mines and other past resource-extraction operations; hydrologic modification; construction activities; and inappropriate disposal of wastes on the land.

5) **Wetlands Protection**
Activities to protect and restore wetlands that are an integral part of a nonpoint source management program or part of implementation or development of comprehensive estuary conservation and management plans.

Nonpoint Sources
Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet. The pollutants are generally carried off the land by storm water runoff. Sources of nonpoint source pollution include agriculture, silviculture, urban, mining, construction, dams and channels, inappropriate land disposal of waste, and saltwater intrusion.

Nutrient
An element, or component, essential for organism growth and development, such as carbon, nitrogen, phosphorus, etc.

Pesticide
Any chemical agent used for control of plant or animal pests. Pesticides include insecticides, herbicides, fungicides, nematocides, and rodenticides.

Primary Treatment
The first stage of wastewater treatment, including removal of floating debris and solids by screening and sedimentation.

Replacement/Rehabilitation of Sewers
See Categories of Needs, Category IIIB.

Reserve Capacity
Extra treatment capacity built into treatment plants and interceptor sewers to accommodate flow increases due to future population growth.

Secondary Treatment
See Categories of Needs, Category I.

Separate State Estimates
Needs that are not included in the 1992 EPA estimates because these needs are

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justified with documents other than the EPA-established documentation types or have no written documentation.

Silviculture
Management of forestland for timber and timber products.

Small Community
A community with less than 10,000 population and total flows of less than 1 million gallons of wastewater per day.

State Revolving Fund
Revolving funds are financial institutions that make loans for specific water pollution control purposes and use loan repayments, including interest, to make new loans for additional water pollution control activities. Under the State Revolving Fund (SRF) program, States and municipalities are primarily responsible for financing, constructing, and managing wastewater treatment facilities. The SRF program is based on the 1987 Amendments to the Clean Water Act, which called for replacement of the Construction Grants program with the SRF program.

Technology-based Controls
Effluent limitations applicable to direct and indirect sources that are developed on a category-by-category basis using statutory factors, not including water quality effects.

301(h) Ocean Discharge Waiver
A variance (authorized under Section 301(h) of the CWA) from secondary treatment requirement for treatment facilities discharging to bays or estuaries.

Treatment Facility
A structure constructed to treat wastewater, storm water, or combined sewer overflow prior to discharging to the environment. Treatment is accomplished by subjecting the wastewater to a combination of physical, chemical, and/or biological processes that reduce the concentration of contaminants in the wastewater.

Wastewater
Dissolved or suspended waterborne waste material. Sanitary or domestic wastewater refers to liquid material collected from residences, offices, and institutions. Industrial waste refers to wastewater from manufacturing facilities. Municipal wastewater is a general term applied to any liquid treated in a municipal treatment facility and usually includes a mixture of sanitary and pretreated industrial wastes.

Wastewater Infrastructure
The pipes and appurtenances for the collection, treatment, and disposal of sewage in a community. The level of treatment will depend on the size of the community, the type of discharge, and/or the designated use of the receiving water.

Water Quality Criteria
Specific levels of water quality that, if reached, are expected to render a body of water suitable for its designated use. The criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, farming, fish production, or industrial processes.

Glossary

Water Quality Standards
State-adopted and EPA-approved ambient standards for water bodies. The standards cover the use of the water body and the water quality criteria that must be met to protect the designated use or uses.

Appendices

These Appendices contain State and national summaries of various cost data, as well as, lists of documentation types. Appendix A presents cost data from the 1992 Needs Survey, including summaries by State of Design Year Needs and Separate State Estimates. Appendix B contains summaries by State of Design Year Needs for the 1990 needs estimates. Appendix C contains selected technical data from the 1992 Needs Survey. Appendix D contains a summary of acceptable documentation for the 1992 Needs Survey.

List of Appendix Tables

Appendix A: Summary of 1992 Needs Survey Estimates

Table A-1

1992 Needs Survey[†]
Total Documented Needs for Publicly Owned Wastewater Treatment Facilities and Other SRF Eligibilities
(January 1992 Dollars in Millions)

Table A-1 summarizes the 1992 EPA assessment of total documented needs by State for traditional and other SRF eligibilities to satisfy the design year (2012) population. All values are presented in millions of January 1992 dollars.

The total documented needs represent the capital investment necessary to build publicly owned wastewater treatment facilities (Categories I through V) needed to serve the design year population and satisfy other types of needs eligible for funding under the SRF program. These other eligible needs include storm water (Category VI) and nonpoint source pollution control, and ground-water, estuarine, and wetlands protection. These needs include all planning, design, and construction activities eligible for funding under Title II and Title VI of the Clean Water Act.

Needs estimates presented in Table A-1 may vary slightly from those presented in Tables 1, 2, and 3 due to rounding.

	Category of Need										
State	I	II	IIIA	IIIB	IVA	IVB	V	VI	NPS	Other SRF Expanded Eligib.[‡]	Total
Alabama	142	153	51	36	333	133	0	0	0	0	848
Alaska	70	0	5	0	21	106	0	0	0	0	202
Arizona	701	69	2	1	182	301	0	0	0	0	1256
Arkansas	113	22	27	3	33	28	0	0	0	0	226
California	5388	144	128	706	684	784	556	6	0	0	8396
Colorado	129	197	0*	1	25	25	0*	0	172	0	549
Connecticut	339	650	32	23	345	206	599	0	0	0	2194
Delaware	57	2	0	8	79	40	2	0	0	0	188
Dist. of Columbia	0	122	0	0	0	0	80	0	20	0	222
Florida	1331	778	30	33	3022	851	4	885	0	0	6934
Georgia	190	890	44	35	79	477	229	0	0	0	1944
Hawaii	132	4	0	0	69	66	0	0	0	0	271
Idaho	69	52	0*	2	71	59	0	0	0	0	253
Illinois	587	305	82	354	178	244	1399	0	0	0	3149
Indiana	193	148	52	27	349	124	886	0	0	0	1779
Iowa	34	16	0	0	1	25	5	0	0	0	81
Kansas	84	64	38	50	50	316	16	0	0	0	618
Kentucky	203	35	79	19	586	348	31	0	0	0	1301
Louisiana	427	49	50	35	407	261	0	0	0	0	1229
Maine	148	0*	22	10	80	50	50	0	0	0	360
Maryland	241	731	23	70	244	168	30	0	0	0	1507
Massachusetts	3274	25	60	30	749	875	2721	0	0	0	7734
Michigan	814	6	170	27	551	520	1606	0	0	0	3694
Minnesota	572	130	18	24	44	60	124	0	0	0	972
Mississippi	211	71	74	59	112	131	0	0	0	0	658
Missouri	214	2	102	76	72	124	771	0	4	0	1365

Table A-1 — Continued

1992 Needs Survey†
Total Documented Needs for Publicly Owned Wastewater Treatment Facilities and Other SRF Eligibilities
(January 1992 Dollars in Millions)

	Category of Need										
State	**I**	**II**	**IIIA**	**IIIB**	**IVA**	**IVB**	**V**	**VI**	**NPS**	**Other SRF Expanded Eligib.‡**	**Total**
Montana	20	0	0	1	30	14	0	0	0	0	65
Nebraska	97	1	1	31	2	39	61	12	0*	2	246
Nevada	78	39	2	3	23	20	0	0	0*	0	165
New Hampshire	105	10	10	5	282	208	236	0	0	0	856
New Jersey	1958	269	227	328	402	275	1290	7	3	0*	4759
New Mexico	43	0*	1	17	33	29	0	0	0	0	123
New York	5023	5670	178	543	2308	1808	7046	549	11	0	23136
North Carolina	317	1525	111	47	1072	910	1	20	22	20	4045
North Dakota	15	0	0	23	0	0*	0	0	0	0	38
Ohio	1249	248	360	348	628	370	1632	113	145	0	5093
Oklahoma	176	106	14	13	32	122	0	0	0	0	463
Oregon	429	368	13	140	292	110	108	0*	0	0	1460
Pennsylvania	598	130	12	18	968	163	1167	0	0	0	3056
Rhode Island	143	57	2	9	258	142	327	0	0	0	938
South Carolina	245	109	17	4	132	171	0	0	0	0	678
South Dakota	37	0	1	29	13	23	1	5	0	0	109
Tennessee	223	332	146	47	314	420	281	42	31	11	1847
Texas	1804	634	195	89	472	1459	0	0	0	0	4653
Utah	114	0	0	0	85	31	0	0	0	0	230
Vermont	61	19	1	1	17	7	57	0	0	0	163
Virginia	460	1073	126	167	468	513	456	144	0	0	3407
Washington	966	25	141	86	512	664	610	0	16	5	3025
West Virginia	358	41	30	30	451	275	21	0	0	0	1206
Wisconsin	453	127	55	2	251	167	5	0	0	0	1060
Wyoming	5	0	1	1	12	1	0	0	269	1109	1398
American Samoa	4	0	0	0	29	3	0	0	0	0	36
Guam	33	0	0*	0	9	4	0	0	0	0	46
Northern Marianas	22	0	0	0*	5	16	0	0	0	0	43
Palau	15	0	0	0	0	1	0	0	0	0	16
Puerto Rico	545	5	40	16	477	441	23	0	0	0	1547
Virgin Islands	53	1	1	16	0	0	0	0	0	0	71
Total	31312	15454	2774	3643	17943	14728	22431	1783	693	1147	111908

† Micronesia and Marshall Islands not considered in 1992 Needs Survey due to free association.
‡ Includes documented needs to address ground-water, estuarine, and wetlands protection.
* Estimate is less than $0.5 million.

Table A-2

1992 Needs Survey†
Documented Needs for the SRF Expanded Eligibilities
(January 1992 Dollars in Millions)

Table A-2 summarizes the 1992 EPA assessment of documented needs for the SRF expanded eligibilities by State. All values are presented in millions of January 1992 dollars.

The documented needs for the SRF expanded eligibilities represent the capital investment necessary to implement activities in approved State Nonpoint Source Management Plans under Section 319 and to develop and implement conservation and management plans under Section 320 (National Estuary Program) of the Clean Water Act. These needs have met the established documentation criteria and are eligible for funding under Title VI of the Clean Water Act.

Needs estimates presented in Table A-2 may vary slightly from those presented in Tables 1, 2, and 3 due to rounding.

	Category of Need				
State	Nonpoint Source	Ground Water	Estuaries	Wetlands	Total
Alabama	0	0	0	0	0
Alaska	0	0	0	0	0
Arizona	0	0	0	0	0
Arkansas	0	0	0	0	0
California	0	0	0	0	0
Colorado	172	0	0	0	172
Connecticut	0	0	0	0	0
Delaware	0	0	0	0	0
Dist. of Columbia	20	0	0	0	20
Florida	0	0	0	0	0
Georgia	0	0	0	0	0
Hawaii	0	0	0	0	0
Idaho	0	0	0	0	0
Illinois	0	0	0	0	0
Indiana	0	0	0	0	0
Iowa	0	0	0	0	0
Kansas	0	0	0	0	0
Kentucky	0	0	0	0	0
Louisiana	0	0	0	0	0
Maine	0	0	0	0	0
Maryland	0	0	0	0	0
Massachusetts	0	0	0	0	0
Michigan	0	0	0	0	0
Minnesota	0	0	0	0	0
Mississippi	0	0	0	0	0
Missouri	4	0	0	0	4

Table A-2 — Continued

1992 Needs Survey[†]
Documented Needs for the SRF Expanded Eligibilities
(January 1992 Dollars in Millions)

State	Category of Need: Nonpoint Source	Ground Water	Estuaries	Wetlands	Total
Montana	0	0	0	0	0
Nebraska	0*	2	0	0*	2
Nevada	0*	0	0	0	0*
New Hampshire	0	0	0	0	0
New Jersey	3	0*	0	0	3
New Mexico	0	0	0	0	0
New York	11	0	0	0	11
North Carolina	22	15	5	0	42
North Dakota	0	0	0	0	0
Ohio	145	0	0	0	145
Oklahoma	0	0	0	0	0
Oregon	0	0	0	0	0
Pennsylvania	0	0	0	0	0
Rhode Island	0	0	0	0	0
South Carolina	0	0	0	0	0
South Dakota	0	0	0	0	0
Tennessee	31	11	0	0	42
Texas	0	0	0	0	0
Utah	0	0	0	0	0
Vermont	0	0	0	0	0
Virginia	0	0	0	0	0
Washington	16	4	0	1	21
West Virginia	0	0	0	0	0
Wisconsin	0	0	0	0	0
Wyoming	269	1079	0	30	1378
American Samoa	0	0	0	0	0
Guam	0	0	0	0	0
Northern Marianas	0	0	0	0	0
Palau	0	0	0	0	0
Puerto Rico	0	0	0	0	0
Virgin Islands	0	0	0	0	0
Total	693	1111	5	31	1840

[†] Micronesia and Marshall Islands not considered in 1992 Needs Survey due to free association.
* Estimate is less than $0.5 million.

Table A-3

1992 Needs Survey†
Design Year Separate State Estimates
(January 1992 Dollars in Millions)

Table A-3 summarizes the States' assessment of needs to satisfy the design year (2012) population for selected wastewater treatment facilities that the States believe to be legitimate but that either were justified with documents outside the established documentation criteria of the 1992 Needs Survey or had no written documentation. The Separate State Estimates are optional and in addition to the EPA estimates. All values are presented in millions of January 1992 dollars.

These needs are shown in Table A-3 by category of need in each State and U.S. Territory.

	Category of Need								
State	**I**	**II**	**IIIA**	**IIIB**	**IVA**	**IVB**	**V**	**VI**	**Total**
Alabama	0	9	0	0	0	0	0	0	9
Alaska	0	0	0	0	0	0	0	0	0
Arizona	21	0	0	0	0	56	0	0	77
Arkansas	190	70	113	98	126	111	2	0	710
California	472	37	0	144	32	6	0	0	691
Colorado	1	0	0	0	0	1	0	11	13
Connecticut	121	488	0	0	7	4	165	0	785
Delaware	0	0	0	0	0	0	0	0	0
Dist. of Columbia	0	100	0	0	0	0	0	0	100
Florida	0	0	0	0	0	0	0	0	0
Georgia	1	17	10	2	1	40	44	0	115
Hawaii	875	0	0	0	154	126	0	0	1155
Idaho	119	0	4	7	12	12	0	0	154
Illinois	47	8	1	2	9	4	1	0	72
Indiana	25	18	4	4	0	2	9	0	62
Iowa	3	0	0	0	0	0	0	0	3
Kansas	1	64	4	0	0	0	0	0	69
Kentucky	78	26	1	1	108	49	2	0	265
Louisiana	27	29	0	1	29	26	0	0	112
Maine	4	0	0*	0	3	0*	717	0	724
Maryland	1	0	0	0	1	0	0	5	7
Massachusetts	101	59	15	0	161	115	0	0	451
Michigan	16	0	0	0	4	0*	0	0	20
Minnesota	100	1	20	27	22	12	42	0	224
Mississippi	0	0	0	2	0	2	0	2	6
Missouri	60	0	0	0	31	12	519	0	622
Montana	10	0*	0	0*	7	3	0	2	22
Nebraska	15	28	0*	0*	0*	1	260	15	319

Table A-3 — Continued

1992 Needs Survey[†]
Design Year Separate State Estimates
(January 1992 Dollars in Millions)

State	Category of Need								
	I	II	IIIA	IIIB	IVA	IVB	V	VI	Total
Nevada	377	103	0*	1	15	53	0	0*	549
New Hampshire	33	16	14	8	25	21	94	0	211
New Jersey	277	0	0	0	0	0	17	0	294
New Mexico	0	0	0	0	0	0	0	0	0
New York	1084	425	68	118	309	255	278	34	2571
North Carolina	41	221	9	0	60	49	0	2660	3040
North Dakota	0	0	0	0	0	0	0	0	0
Ohio	77	45	48	36	120	443	329	3	1101
Oklahoma	0	0	0	0	0	0	0	0	0
Oregon	0	0	10	11	1	0	0	0	22
Pennsylvania	423	136	7	11	484	242	787	0	2090
Rhode Island	0	0	0	0	0	0	0	0	0
South Carolina	7	0	2	0	6	4	0	0*	19
South Dakota	6	0	0	5	0	0*	0	2	13
Tennessee	589	59	106	38	202	168	254	43	1459
Texas	304	89	27	27	102	269	0	0	818
Utah	183	0	0	0	763	34	0	0	980
Vermont	3	7	0	0	13	2	5	1	31
Virginia	121	21	18	3	64	44	1	50	322
Washington	49	0*	1	0	0	81	0	1	132
West Virginia	236	9	2	19	462	229	32	8	997
Wisconsin	6	1	0	0	13	3	0	572	595
Wyoming	34	20	8	11	2	2	0*	5	82
American Samoa	0	0	0	0	0	0	0	0	0
Guam	0	0	0	0	0	0	0	0	0
Northern Marianas	0	0	0	0	0	0	0	0	0
Palau	0	0	0	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0	0	0	0
Total	6138	2106	492	576	3348	2481	3558	3414	22113

[†] Micronesia and Marshall Islands not considered in 1992 Needs Survey due to free association.
* Estimate is less than $0.5 million.

Table A-4

1992 Needs Survey[†]
Small Community Facilities and Design Year Needs Summary
(January 1992 Dollars in Millions)

Table A-4 provides a summary of all small community wastewater collection and treatment facilities identified in the 1992 Needs Survey by State, the number of those small community facilities with identified needs, the relative percentages of each group to the total publicly owned wastewater treatment facilities within each State, and the total needs by State for those small community facilities with identified needs. The needs summaries include documented and separate State estimates for Categories I through VI and Categories I through V, respectively, to satisfy the design year (2012) population living in those small communities. All needs values are presented in millions of January 1992 dollars.

State	Number of Small Community Facilities	Small Communities as Percent of Total State Facilities	Number of Small Community Facilities with Documented Needs	Percent of Documented Small Communities To Total Documented Facilities	Documented Small Community Needs (Cat. I-VI)	Small Community Separate State Estimates (Cat.I-V)
Alabama	458	77	241	79	378	0
Alaska	46	77	11	65	74	0
Arizona	309	81	37	41	51	0
Arkansas	694	90	166	87	125	424
California	543	56	175	47	459	20
Colorado	295	69	72	76	40	2
Connecticut	120	53	43	37	131	6
Delaware	31	70	10	53	25	0
Dist. of Columbia	0	0	0	0	0	0
Florida	120	27	35	13	101	0
Georgia	615	77	120	52	144	7
Hawaii	16	40	11	39	45	34
Idaho	209	85	33	60	38	37
Illinois	840	71	375	70	506	18
Indiana	391	75	283	73	284	21
Iowa	895	91	18	49	16	1
Kansas	565	89	108	78	62	30
Kentucky	411	83	238	78	443	217
Louisiana	448	76	211	76	435	19
Maine	210	79	60	69	136	59
Maryland	359	76	149	64	181	2
Massachusetts	96	34	51	28	289	92
Michigan	538	68	180	67	566	5
Minnesota	626	84	117	70	136	29
Mississippi	622	89	222	81	247	0
Missouri	752	77	174	67	170	90
Montana	192	89	19	63	20	20
Nebraska	487	93	34	72	16	8
Nevada	63	76	21	66	35	187

Table A-4 — Continued

1992 Needs Survey†
Small Community Facilities and Design Year Needs Summary
(January 1992 Dollars in Millions)

State	Number of Small Community Facilities	Small Communities as Percent of Total State Facilities	Number of Small Community Facilities with Documented Needs	Percent of Documented Small Communities To Total Documented Facilities	Documented Small Community Needs (Cat. I-VI)	Small Community Separate State Estimates (Cat.I-V)
New Hampshire	92	71	58	67	167	40
New Jersey	379	56	208	50	438	249
New Mexico	79	68	15	56	14	0
New York	1005	74	403	64	940	617
North Carolina	566	75	343	67	853	282
North Dakota	372	97	14	67	6	0
Ohio	1033	77	336	70	617	212
Oklahoma	453	85	91	70	75	0
Oregon	185	70	44	51	72	3
Pennsylvania	1636	80	539	85	1257	885
Rhode Island	7	19	2	8	42	0
South Carolina	198	59	98	52	122	9
South Dakota	344	96	124	91	40	8
Tennessee	246	67	170	69	295	217
Texas	1549	76	592	73	944	220
Utah	371	82	18	56	57	96
Vermont	90	75	26	58	50	28
Virginia	386	71	207	69	546	203
Washington	260	68	84	56	168	0*
West Virginia	743	93	341	93	1028	935
Wisconsin	770	85	323	83	462	23
Wyoming	119	76	8	62	4	26
American Samoa	0	0	0	0	0	0
Guam	4	57	1	25	1	0
Northern Marianas	2	40	2	40	3	0
Palau	3	75	3	75	6	0
Puerto Rico	1	3	0	0	0	0
Virgin Islands	9	75	9	75	6	0
Total	21853	76	7273	67	13366	5381

† Micronesia and Marshall Islands not considered in 1992 Needs Survey due to free association.
* *Estimate is less than $0.5 million.*

Table A-5

1992 Needs Survey†
Documented Design Year Needs for Small Communities for
Publicly Owned Wastewater Treatment Facilities and Storm Water Control
(January 1992 Dollars in Millions)

Table A-5 summarizes the 1992 EPA assessment of documented design year needs for small communities by State. The assessment includes needs for traditional eligibilities (Categories I through V) and storm water control (Category VI) to satisfy the design year (2012) population living in small communities. The small community needs shown in Table A-5 are derived by EPA from the total documented design year needs using criteria as defined in the report section entitled "What Are the Needs for Small Communities?". All values are presented in millions of January 1992 dollars.

These small community design year needs have met the established documentation criteria and represent the capital investment necessary to build all publicly owned wastewater treatment facilities needed to serve the design year population of small communities. These are the funds necessary to provide adequate wastewater treatment systems and storm water control in compliance with the Clean Water Act for those small communities who could document their needs.

	Category of Need								
State	I	II	IIIA	IIIB	IVA	IVB	V	VI	Total
Alabama	99	39	6	3	176	55	0	0	378
Alaska	26	0	0	0	14	34	0	0	74
Arizona	26	1	1	0*	10	13	0	0	51
Arkansas	59	13	1	1	32	19	0	0	125
California	192	23	13	7	171	53	0	0	459
Colorado	36	1	0*	1	1	1	0	0	40
Connecticut	19	0*	1	0	62	49	0	0	131
Delaware	11	1	0	0*	6	5	2	0	25
Dist. of Columbia	0	0	0	0	0	0	0	0	0
Florida	35	7	1	0	42	16	0	0	101
Georgia	33	21	8	12	23	47	0	0	144
Hawaii	21	0	0	0	13	11	0	0	45
Idaho	22	0	0*	1	7	8	0	0	38
Illinois	163	11	17	64	140	96	15	0	506
Indiana	84	26	13	8	92	49	12	0	284
Iowa	7	2	0	0*	1	1	5	0	16
Kansas	28	0*	6	9	9	10	0	0	62
Kentucky	92	22	30	6	169	123	1	0	443
Louisiana	116	8	3	5	216	87	0	0	435
Maine	50	0*	7	3	40	33	3	0	136
Maryland	33	31	0*	1	91	15	10	0	181
Massachusetts	79	12	3	1	116	78	0	0	289
Michigan	156	2	9	2	253	95	49	0	566
Minnesota	66	18	5	0*	25	22	0	0	136
Mississippi	57	12	32	13	70	63	0	0	247

Table A-5 — Continued

1992 Needs Survey[†]
Documented Design Year Needs for Small Communities for
Publicly Owned Wastewater Treatment Facilities and Storm Water Control
(January 1992 Dollars in Millions)

	Category of Need								
State	**I**	**II**	**IIIA**	**IIIB**	**IVA**	**IVB**	**V**	**VI**	**Total**
Missouri	51	1	4	7	53	54	0	0	170
Montana	7	0	0	1	8	4	0	0	20
Nebraska	14	0	0	0	1	1	0	0*	16
Nevada	6	0	2	3	21	3	0	0	35
New Hampshire	24	0*	3	2	77	61	0	0	167
New Jersey	151	37	31	14	139	59	3	4	438
New Mexico	7	0*	0	0*	3	4	0	0	14
New York	261	30	32	20	416	177	4	0	940
North Carolina	85	233	23	7	300	203	0	2	853
North Dakota	4	0	0	2	0	0*	0	0	6
Ohio	180	58	44	3	238	67	27	0	617
Oklahoma	24	4	8	1	15	23	0	0	75
Oregon	34	9	2	0*	17	10	0	0	72
Pennsylvania	379	59	4	2	696	103	14	0	1257
Rhode Island	1	0	0	0	21	20	0	0	42
South Carolina	40	8	6	0	22	46	0	0	122
South Dakota	25	0	0*	6	1	6	0*	2	40
Tennessee	86	31	20	7	95	56	0*	0	295
Texas	348	71	21	1	308	195	0	0	944
Utah	19	0	0	0	28	10	0	0	57
Vermont	10	5	1	1	15	7	11	0	50
Virginia	106	51	26	4	226	133	0*	0	546
Washington	59	2	11	0*	68	28	0	0	168
West Virginia	335	18	13	21	402	221	18	0	1028
Wisconsin	158	6	0*	2	229	67	0	0	462
Wyoming	4	0	0*	0*	0*	0	0	0	4
American Samoa	0	0	0	0	0	0	0	0	0
Guam	1	0	0	0	0	0	0	0	1
Northern Marianas	3	0	0	0	0*	0*	0	0	3
Palau	6	0	0	0	0	0	0	0	6
Puerto Rico	0	0	0	0	0	0	0	0	0
Virgin Islands	3	0	0*	3	0	0	0	0	6
Total	3941	873	407	244	5178	2541	174	8	13366

[†] Micronesia and Marshall Islands not considered in 1992 Needs Survey due to free association.
* Estimate is less than $0.5 million.

Table A-6

1992 Needs Survey†
Design Year Separate State Estimates for Small Communities
(January 1992 Dollars in Millions)

Table A-6 summarizes the States' assessment of needs to satisfy the design year (2012) population living in small communities. The small community needs shown in Table A-6 are derived by EPA from the total separate State estimates using criteria as defined in the report section entitled "What Are the Needs for Small Communities?". These needs are shown by category of need in each State and U.S. Territory.

Separate State estimates reported by the States are optional and are for selected wastewater treatment facilities that the States believe to be legitimate but that either were justified with documents outside the established documentation criteria of the 1992 Needs Survey or had no written documentation. All values are presented in millions of January 1992 dollars.

	Category of Need								
State	**I**	**II**	**IIIA**	**IIIB**	**IVA**	**IVB**	**V**	**VI**	**Total**
Alabama	0	0	0	0	0	0	0	0	0
Alaska	0	0	0	0	0	0	0	0	0
Arizona	0	0	0	0	0	0	0	0	0
Arkansas	146	44	39	23	104	68	0	0	424
California	1	0	0	0	16	3	0	0	20
Colorado	1	0	0	0	0	1	0	11	13
Connecticut	5	1	0	0	0	0	0	0	6
Delaware	0	0	0	0	0	0	0	0	0
Dist. of Columbia	0	0	0	0	0	0	0	0	0
Florida	0	0	0	0	0	0	0	0	0
Georgia	1	5	0	0*	1	0*	0	0	7
Hawaii	6	0	0	0	25	3	0	0	34
Idaho	13	0	4	1	10	9	0	0	37
Illinois	9	0*	1	0	7	1	0	0	18
Indiana	13	3	2	3	0	0	0*	0	21
Iowa	1	0	0	0	0	0	0	0	1
Kansas	0*	30	0	0	0	0	0	0	30
Kentucky	67	15	1	1	93	40	0	0	217
Louisiana	5	11	0	0*	3	0*	0	0	19
Maine	0	0	0*	0	3	0*	56	0	59
Maryland	1	0	0	0	1	0	0	4	6
Massachusetts	24	18	0	0	29	21	0	0	92
Michigan	1	0	0	0	4	0*	0	0	5
Minnesota	21	1	1	2	2	2	0	0	29
Mississippi	0	0	0	0	0	0	0	0	0
Missouri	56	0	0	0	25	9	0	0	90
Montana	10	0*	0	0*	7	3	0	1	21
Nebraska	7	0	0*	0*	0*	1	0	1	9

Table A-6 — Continued

1992 Needs Survey[†]
Design Year Separate State Estimates for Small Communities
(January 1992 Dollars in Millions)

	Category of Need								
State	**I**	**II**	**IIIA**	**IIIB**	**IVA**	**IVB**	**V**	**VI**	**Total**
Nevada	146	2	0*	1	15	23	0	0*	187
New Hampshire	10	1	5	2	13	9	0	0	40
New Jersey	249	0	0	0	0	0	0	0	249
New Mexico	0	0	0	0	0	0	0	0	0
New York	256	12	14	12	176	146	1	0	617
North Carolina	38	195	9	0	34	6	0	196	478
North Dakota	0	0	0	0	0	0	0	0	0
Ohio	44	14	6	13	104	24	7	0	212
Oklahoma	0	0	0	0	0	0	0	0	0
Oregon	0	0	1	1	1	0	0	0	3
Pennsylvania	279	96	5	1	411	83	10	0	885
Rhode Island	0	0	0	0	0	0	0	0	0
South Carolina	3	0	0	0	6	0*	0	0*	9
South Dakota	3	0	0	5	0	0*	0	1	9
Tennessee	100	7	46	6	38	20	0	16	233
Texas	72	12	0*	0	72	64	0	0	220
Utah	26	0	0	0	63	7	0	0	96
Vermont	3	7	0	0	13	2	3	1	29
Virginia	78	17	17	3	51	37	0	0	203
Washington	0	0	0	0	0	0	0	0*	0*
West Virginia	230	9	2	11	455	224	4	0	935
Wisconsin	6	1	0	0	13	3	0	0	23
Wyoming	19	0	0	5	1	1	0	0	26
American Samoa	0	0	0	0	0	0	0	0	0
Guam	0	0	0	0	0	0	0	0	0
Northern Marianas	0	0	0	0	0	0	0	0	0
Palau	0	0	0	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0	0	0	0
Total	1950	501	153	90	1796	810	81	231	5612

[†] Micronesia and Marshall Islands not considered in 1992 Needs Survey due to free association.
* Estimate is less than $0.5 million.

Appendix B: Summary of 1990 Needs Survey Estimates

Table B-1

1990 Needs Survey
Design Year Needs for Traditional Eligibilities and Supplemental State Estimates
(January 1992 Dollars in Millions)

Table B-1 summarizes the results of EPA's 1990 Needs Survey for the traditional eligibilities and the supplemental estimates presented by the States. These estimates include planning, design, and construction activities eligible for Federal financial assistance under Title II (Construction grants) and Title VI (State Revolving Fund) of the Clean Water Act. All values are presented in millions of January 1992 dollars. The estimates reflect the sum of Tables B-2 and B-3.

	Category of Need							
State	I	II	IIIA	IIIB	IVA	IVB	V	Total
Alabama	292	152	100	25	258	236	0	1063
Alaska	74	0	5	0	21	108	0	208
Arizona	626	88	2	3	54	242	0	1015
Arkansas	301	93	143	106	158	141	2	944
California	8123	132	548	861	535	827	1746	12772
Colorado	63	44	2	7	3	41	0	160
Connecticut	579	1344	27	18	361	209	418	2956
Delaware	19	3	0	0*	38	25	1	86
Dist. of Columbia	107	194	0	0	0	0	76	377
Florida	2483	854	46	27	2857	1567	3	7837
Georgia	316	384	46	44	101	421	213	1525
Hawaii	1036	4	0	0	174	188	0	1402
Idaho	78	9	12	3	64	79	1	246
Illinois	594	359	90	63	148	360	1605	3219
Indiana	272	157	60	31	266	160	1040	1986
Iowa	179	520	51	1	45	203	6	1005
Kansas	204	105	73	55	48	355	16	856
Kentucky	281	92	81	13	811	544	33	1855
Louisiana	493	34	64	36	344	268	0	1239
Maine	124	1	27	8	79	40	848	1127
Maryland	233	955	129	3	223	308	15	1866
Massachusetts	2698	23	43	20	769	746	1857	6156
Michigan	867	10	77	42	552	676	1466	3690
Minnesota	626	35	37	42	119	88	178	1125
Mississippi	210	79	65	2	92	122	0	570
Missouri	421	25	11	295	133	470	176	1531
Montana	54	2	0	1	41	20	0	118
Nebraska	72	2	2	16	5	17	22	136
Nevada	461	143	2	4	23	73	0	706
New Hampshire	143	26	24	13	307	216	284	1013
New Jersey	2142	210	255	350	446	286	1197	4886

Table B-1 — Continued

1990 Needs Survey
Design Year Needs for Traditional Eligibilities and Supplemental State Estimates
(January 1992 Dollars in Millions)

	Category of Need							
State	**I**	**II**	**IIIA**	**IIIB**	**IVA**	**IVB**	**V**	**Total**
New Mexico	43	0*	1	17	33	29	0	123
New York	3858	2070	206	1577	2623	1493	6633	18460
North Carolina	434	1056	114	79	567	932	1	3183
North Dakota	7	0	0	4	0	5	0	16
Ohio	899	436	333	107	871	1169	705	4520
Oklahoma	180	107	14	13	32	138	0	484
Oregon	499	156	112	204	415	192	119	1697
Pennsylvania	632	120	17	7	635	157	122	1690
Rhode Island	73	30	16	14	115	80	238	566
South Carolina	383	90	27	0	99	208	0	807
South Dakota	48	3	5	6	15	10	2	89
Tennessee	916	113	203	24	324	423	240	2243
Texas	2296	745	256	114	491	1925	0	5827
Utah	418	70	42	4	24	48	0	606
Vermont	91	56	1	5	38	19	64	274
Virginia	812	318	100	40	285	293	488	2336
Washington	1088	25	141	86	323	618	606	2887
West Virginia	596	54	30	29	921	484	22	2136
Wisconsin	553	207	49	2	238	350	76	1475
Wyoming	16	0	1	2	2	1	0*	22
American Samoa	4	0	0	0*	12	3	0	19
Micronesia	61	0	0*	0	16	5	0	82
Guam	33	0	0	0	9	4	0	46
Marshall Islands	26	0	0	0*	2	7	0	35
Northern Marianas	22	0	0	0	5	16	0	43
Palau	15	0	0	0	0	1	0	16
Puerto Rico	662	5	40	16	500	510	20	1753
Virgin Islands	11	0	0*	0	9	10	0	30
Total	38847	11740	3730	4439	17679	18166	20539	115140

* Estimate is less than $0.5 million.

Table B-2

1990 Needs Survey
Documented Design Year Needs for Traditional Eligibilities
(January 1992 Dollars in Millions)

Table B-2 summarizes the results of EPA's 1990 Needs Survey of documented needs for the traditional eligibilities (Categories I through V) by State for the design year population. All values are presented in millions of January 1992 dollars.

These design year needs were derived from those documented during the 1988 Needs Survey. This table is provided as a convenience to those who wish to compare the 1990 and 1992 Needs Survey results. Table B-2 may be compared with Table A-2, excluding needs in Category VI.

Needs presented in Table B-2 may vary slightly from those presented in Table 3 due to rounding.

	Category of Need							
State	**I**	**II**	**IIIA**	**IIIB**	**IVA**	**IVB**	**V**	**Total**
Alabama	194	80	93	20	154	184	0	725
Alaska	74	0	5	0	21	108	0	208
Arizona	626	88	2	3	54	242	0	1015
Arkansas	140	21	57	1	40	36	0	295
California	3527	85	309	706	392	758	1127	6904
Colorado	63	44	2	7	3	41	0	160
Connecticut	287	124	27	18	361	209	418	1444
Delaware	19	3	0	0*	38	25	1	86
Dist. of Columbia	107	194	0	0	0	0	0	301
Florida	1995	469	44	26	2584	1372	0	6490
Georgia	290	124	46	26	84	361	87	1018
Hawaii	124	4	0	0	143	110	0	381
Idaho	38	9	5	2	18	18	1	91
Illinois	478	307	86	42	117	304	1514	2848
Indiana	158	88	48	11	238	125	1023	1691
Iowa	167	24	51	1	43	203	6	495
Kansas	202	3	73	55	48	355	16	752
Kentucky	188	59	85	13	722	455	25	1547
Louisiana	493	34	64	36	344	268	0	1239
Maine	124	1	27	8	79	36	21	296
Maryland	159	375	33	0*	37	80	9	693
Massachusetts	2677	23	43	20	769	746	1857	6135
Michigan	820	7	71	26	484	661	1215	3284
Minnesota	375	34	18	1	27	48	127	630
Mississippi	207	65	63	2	85	120	0	542
Missouri	303	0	7	76	49	407	151	993
Montana	13	4	0	1	19	3	0	40

Table B-2 — Continued

1990 Needs Survey
Documented Design Year Needs for Traditional Eligibilities
(January 1992 Dollars in Millions)

State	Category of Need I	II	IIIA	IIIB	IVA	IVB	V	Total
Nebraska	63	2	1	9	9	12	22	118
Nevada	87	39	2	3	19	21	0	171
New Hampshire	98	10	10	5	281	195	251	850
New Jersey	1586	84	254	343	392	175	857	3691
New Mexico	43	0*	1	17	33	29	0	123
New York	1963	214	178	1708	2105	1094	6211	13473
North Carolina	419	192	94	48	461	628	1	1843
North Dakota	7	0	0	4	0	5	0	16
Ohio	653	364	296	66	692	915	613	3599
Oklahoma	180	107	14	13	32	138	0	484
Oregon	392	141	44	159	358	138	107	1339
Pennsylvania	632	120	17	7	635	157	122	1690
Rhode Island	39	5	0*	0	98	75	205	422
South Carolina	146	29	23	0	68	150	0	416
South Dakota	33	3	2	1	9	15	2	65
Tennessee	381	112	168	11	272	400	10	1354
Texas	2199	720	239	84	377	1655	0	5274
Utah	418	70	42	4	24	48	0	606
Vermont	69	31	1	5	20	18	80	224
Virginia	289	86	31	10	146	171	223	956
Washington	1017	25	141	86	321	587	604	2781
West Virginia	312	24	24	17	372	200	15	964
Wisconsin	233	201	53	0	164	119	230	1000
Wyoming	5	0	1	1	0*	0	0	7
American Samoa	4	0	0	0	12	3	0	19
Micronesia	61	0	0	0*	16	5	0	82
Guam	33	0	0*	0	9	4	0	46
Marshall Islands	26	0	0	0	2	7	0	35
Northern Marianas	22	0	0	0*	5	16	0	43
Palau	15	0	0	0	0	1	0	16
Puerto Rico	628	5	40	16	489	465	23	1666
Virgin Islands	11	0	0*	0	9	10	0	30
Total	25912	4853	2935	3718	14383	14731	17174	83706

* Estimate is less than $0.5 million.

Table B-3

1990 Needs Survey
Design Year Supplemental State Estimates
(January 1992 Dollars in Millions)

Table B-3 summarizes the 1990 Needs Survey State supplemental estimates of incremental needs for the traditional eligibilities (Categories I through V) by State for the design year population. All values are presented in millions of January 1992 dollars.

The supplemental State estimates represent needs which are in addition to the 1990 documented design year needs for the traditional eligibilities.

	Category of Need							
State	**I**	**II**	**IIIA**	**IIIB**	**IVA**	**IVB**	**V**	**Total**
Alabama	98	72	7	5	104	52	0	338
Alaska	0	0	0	0	0	0	0	0
Arizona	0	0	0	0	0	0	0	0
Arkansas	161	72	86	105	118	105	2	649
California	4596	47	239	155	143	69	619	5868
Colorado	0	0	0	0	0	0	0	0
Connecticut	292	1220	0	0	0	0	0	1512
Delaware	0	0	0	0	0	0	0	0
Dist. of Columbia	0	0	0	0	0	0	76	76
Florida	488	385	2	1	273	195	3	1347
Georgia	26	260	0*	18	17	60	126	507
Hawaii	912	0	0	0	31	78	0	1021
Idaho	40	0	7	1	46	61	0	155
Illinois	116	52	4	21	31	56	91	371
Indiana	114	69	12	20	28	35	17	295
Iowa	12	496	0	0	2	0*	0	510
Kansas	2	102	0*	0	0	0	0	104
Kentucky	93	33	(4)	0	89	89	8	308
Louisiana	0	0	0	0	0	0	0	0
Maine	0*	0	0	0	0*	4	827	831
Maryland	74	580	96	3	186	228	6	1173
Massachusetts	21	0	0	0	0	0	0	21
Michigan	47	3	6	16	68	15	251	406
Minnesota	251	1	19	41	92	40	51	495
Mississippi	3	14	2	0	7	2	0	28
Missouri	118	25	4	219	84	63	25	538
Montana	41	(2)	0	0*	22	17	0	78
Nebraska	9	0	1	7	(4)	5	0	18
Nevada	374	104	0*	1	4	52	0	535
New Hampshire	45	16	14	8	26	21	33	163

Table B-3 — Continued

1990 Needs Survey
Design Year Supplemental State Estimates
(January 1992 Dollars in Millions)

State	Category of Need I	II	IIIA	IIIB	IVA	IVB	V	Total
New Jersey	556	126	1	7	54	111	340	1195
New Mexico	0	0	0	0	0	0	0	0
New York	1895	1856	28	(131)	518	399	422	4987
North Carolina	15	864	20	31	106	304	0	1340
North Dakota	0	0	0	0	0	0	0	0
Ohio	246	72	37	41	179	254	92	921
Oklahoma	0	0	0	0	0	0	0	0
Oregon	107	15	68	45	57	54	12	358
Pennsylvania	0	0	0	0	0	0	0	0
Rhode Island	34	25	16	14	17	5	33	144
South Carolina	237	61	4	0	31	58	0	391
South Dakota	15	0	3	5	6	(5)	0	24
Tennessee	535	1	35	13	52	23	230	889
Texas	97	25	17	30	114	270	0	553
Utah	0	0	0	0	0	0	0	0
Vermont	22	25	0*	0	18	1	(16)	50
Virginia	523	232	69	30	139	122	265	1380
Washington	71	0*	0	0*	2	31	2	106
West Virginia	284	30	6	12	549	284	7	1172
Wisconsin	320	6	(4)	2	74	231	(154)	475
Wyoming	11	0	0	1	2	1	0*	15
American Samoa	0	0	0	0	0	0	0	0
Micronesia	0	0	0	0	0	0	0	0
Guam	0	0	0	0	0	0	0	0
Marshall Islands	0	0	0	0	0	0	0	0
Northern Marianas	0	0	0	0	0	0	0	0
Palau	0	0	0	0	0	0	0	0
Puerto Rico	34	0	0*	0	11	45	(3)	87
Virgin Islands	0	0	0	0	0	0	0	0
Total	12935	6887	795	721	3296	3435	3365	31434

* Estimate is less than $0.5 million.

Appendix C: Summary of 1992 Needs Survey Technical Information

NOTE: Some States did not update all of the technical data used to generate Tables C-1 through C-5.

Table C-1

1992 Needs Survey
Number of Operational Treatment Facilities and
Collection Systems in 1992

Table C-1 summarizes the number of facilities in operation in 1992. This summary gives the number of treatment facilities and collection systems in each State and U.S. Territory.

State	Treatment Facilities	Collection Systems
Alabama	256	322
Alaska	46	52
Arizona	116	129
Arkansas	288	330
California	586	789
Colorado	275	325
Connecticut	100	142
Delaware	19	36
Dist. of Columbia	1	1
Florida	272	317
Georgia	375	481
Hawaii	26	31
Idaho	162	187
Illinois	725	993
Indiana	360	402
Iowa	712	746
Kansas	569	581
Kentucky	231	281
Louisiana	321	355
Maine	129	164
Maryland	176	277
Massachusetts	117	205
Michigan	378	627
Minnesota	517	638
Mississippi	298	350
Missouri	604	658
Montana	166	170
Nebraska	448	515
Nevada	51	54
New Hampshire	83	112
New Jersey	145	504
New Mexico	102	114
New York	514	902
North Carolina	436	503
North Dakota	297	300
Ohio	671	918
Oklahoma	499	513
Oregon	209	233
Pennsylvania	686	1331
Rhode Island	20	29
South Carolina	199	232
South Dakota	274	276
Tennessee	240	264
Texas	1290	1557
Utah	108	178
Vermont	88	98
Virginia	239	334
Washington	257	322
West Virginia	184	252
Wisconsin	588	772
Wyoming	103	119
American Samoa	2	2
Guam	7	7
Northern Marianas	2	2
Palau	1	1
Puerto Rico	33	33
Virgin Islands	12	12
Total	15613	20078

Table C-2

1992 Needs Survey
Number of Operational Treatment Facilities and
Collection Systems When All Documented Needs Are Met

Table C-2 shows the number of treatment facilities and collection systems that are planned to be in operation when all documented needs are met. A summary is provided for each State and U.S. Territory.

State	Treatment Facilities	Collection Systems
Alabama	414	508
Alaska	54	57
Arizona	175	189
Arkansas	495	559
California	666	907
Colorado	281	338
Connecticut	107	170
Delaware	23	43
Dist of Columbia	1	1
Florida	297	353
Georgia	435	592
Hawaii	31	40
Idaho	196	226
Illinois	819	1117
Indiana	427	503
Iowa	715	751
Kansas	580	606
Kentucky	393	477
Louisiana	465	551
Maine	202	244
Maryland	202	400
Massachusetts	148	269
Michigan	450	771
Minnesota	573	704
Mississippi	493	604
Missouri	643	757
Montana	189	201
Nebraska	452	521
Nevada	67	71
New Hampshire	90	126
New Jersey	149	552
New Mexico	104	116
New York	676	1208
North Carolina	500	657
North Dakota	306	313
Ohio	789	1150
Oklahoma	497	523
Oregon	221	250
Pennsylvania	996	1839
Rhode Island	22	34
South Carolina	238	280
South Dakota	290	292
Tennessee	291	352
Texas	1608	1937
Utah	127	212
Vermont	99	109
Virginia	310	477
Washington	275	367
West Virginia	584	770
Wisconsin	635	885
Wyoming	112	132
American Samoa	2	2
Guam	6	7
Northern Marianas	4	4
Palau	1	1
Puerto Rico	29	34
Virgin Islands	12	12
Total	18966	25171

Table C-3

1992 Needs Survey
Number of Treatment Facilities by Flow Range

Table C-3 is a summary by flow range of all treatment facilities in operation in 1992 as well as those projected to be in operation when all documented needs are met. This table gives four flow ranges in millions of gallons per day (mgd) for 1992 and the design year 2012; the number of facilities in each range; and the cumulative total of their existing flows and design flow capacities. These data are for all types of treatment facilities, regardless of their level of treatment.

TREATMENT FACILITIES IN OPERATION IN 1992

Existing Flow Range (mgd)	Number of Facilities	Total Existing Flow (mgd)
0.00 to 0.10	6003	263
0.11 to 1.00	6545	2295
1.01 to 10.00	2460	7378
10.01 and greater	458	19554
Other*	147	0
Total	15613	29490

TREATMENT FACILITIES IN OPERATION WHEN ALL DOCUMENTED NEEDS ARE MET

Design Flow Range (mgd)	Number of Facilities	Total Future Design Flow Capacity (mgd)
0.00 to 0.10	6451	314
0.11 to 1.00	8094	2849
1.01 to 10.00	3448	10922
10.01 and greater	740	31457
Other*	233	0
Total	18966	45542

*Note: Flow data were unavailable for these facilities.

Table C-4

1992 Needs Survey
Operational Treatment Facility Information

Table C-4 summarizes the level of treatment provided by all wastewater treatment facilities in the United States in 1992 as well as those projected to be in operation when all documented needs are met. This summary provides details on the number of operational facilities, their associated flow, and the population served by each level of treatment. All flow values are given in millions of gallons per day (mgd).

Level of Treatment	Number of Facilities	Design Capacity (mgd)	Number of People Served	Percent of U.S. Population
TREATMENT FACILITIES IN OPERATION IN 1992				
Less than Secondary	868	3724	21,712,715	8.4
Secondary	9086	17928	82,907,949	32.2
Greater than Secondary	3678	16408	68,229,263	26.4
No Discharge	1981	1320	7,764,363	3.0
Total	15613	39380	180,614,290	70.0
TREATMENT FACILITIES IN OPERATION WHEN ALL DOCUMENTED NEEDS ARE MET				
Less than Secondary†	68	390	3,169,807	1.1
Secondary	10410	19086	108,196,765	37.5
Greater than Secondary	5929	24210	124,946,387	43.3
No Discharge	2491	1825	14,993,679	5.2
Other*	68	31	53,899	0.0**
Total	18966	45542	251,360,537	87.0

† Note: Includes facilities with Section 301(h) ocean discharge waivers, and treatment facilities discharging to other facilities meeting secondary treatment or better.
* Note: Level of treatment data were unavailable for these facilities.
** Note: Percent of population served is less than 0.1.

Table C-5

1992 Needs Survey
Number of Combined Sewer Facilities and Number
of Combined Sewer Facilities with Documented Needs

Table C-5 summarizes the number of combined sewer facilities in operation in 1992. This summary gives the number of those facilities with reported documented needs

State	Number of Facilities	Number of Facilities With Documented Needs
Alabama	0	0
Alaska	2	0
Arizona	0	0
Arkansas	0	0
California	5	2
Colorado	6	1
Connecticut	15	7
Delaware	5	1
Dist. of Columbia	1	1
Florida	1	1
Georgia	9	8
Hawaii	0	0
Idaho	1	0
Illinois	177	48
Indiana	132	31
Iowa	20	1
Kansas	3	2
Kentucky	20	6
Louisiana	0	0
Maine	60	5
Maryland	13	6
Massachusetts	39	15
Michigan	119	46
Minnesota	5	2
Mississippi	0	0
Missouri	14	3
Montana	1	0
Nebraska	3	2
Nevada	0	0
New Hampshire	11	4
New Jersey	36	28
New Mexico	0	0
New York	94	37
North Carolina	1	1
North Dakota	0	0
Ohio	122	37
Oklahoma	0	0
Oregon	7	3
Pennsylvania	158	24
Rhode Island	4	2
South Carolina	0	0
South Dakota	16	3
Tennessee	7	4
Texas	0	0
Utah	0	0
Vermont	36	20
Virginia	13	5
Washington	52	8
West Virginia	93	9
Wisconsin	1	1
Wyoming	0	0
American Samoa	0	0
Guam	0	0
Northern Marianas	0	0
Palau	0	0
Puerto Rico	1	1
Virgin Islands	0	0
Total	1303	375

Appendix D: Summary of 1992 Needs Survey Documentation

Table D-1

1992 Needs Survey
List of Acceptable Documentation Types

Table D-1 lists the 24 acceptable criteria for documenting a problem or cost estimate in the 1992 Needs Survey.

	Documentation Type	Justification of Problem	Justification of Cost
1.	Capital Improvement Plan A capital improvement plan must adequately address why the project is needed and provide costs which are project-specific.	Yes	Yes
2.	Infiltration/Inflow (I/I) Analysis	Yes	Yes
3.	Sewer System Evaluation Survey (SSES)	Yes	Yes
4.	Final Engineer's Estimate The final engineer's report is typically submitted as a result of a detailed facility design.	Yes	Yes
5.	Cost of Previous Comparable Construction This document may be used to justify costs if stringent guidelines are followed and the costs are project-specific.	No	Yes
6.	Facilities Plan Excerpts from a facilities plan are acceptable forms of documentation to justify a need and to update cost estimates.	Yes	Yes
7.	Plan of Study This documentation type must be an official project description. A plan of study precedes a facilities plan.	Yes	No
8.	State Priority List A State's project priority list is acceptable as adequate problem documentation if the list was accepted by EPA. The 1-year fundable plus 4-year planning portion of the FY 1991, 1992, or 1993 lists may be used if accepted by the appropriate EPA Regional Office.	Yes	No
9.	State-Approved Area-Wide or Regional Basin Plan An area-wide or regional basin plan (per Section 208 or 303 of the CWA) is an acceptable document to justify that a need exists if specific project descriptions are cited and the plan is State approved. The problem areas should be specifically identified.	Yes	Yes

Table D-1 — Continued

1992 Needs Survey
List of Acceptable Documentation Types

	Documentation Type	Justification of Problem	Justification of Cost
10.	Grant Application Form (Step 3 or 4)	Yes	Yes
11.	Municipal Compliance Plan This document may be used to justify a need and to update costs if the costs are project-specific.	Yes	Yes
12.	Diagnostic Evaluation Results The results of a diagnostic evaluation of a treatment plant may be used if the results indicate that construction is needed to achieve compliance.	Yes	No
13.	Administrative Order/Court Order/Consent Decree These documents may be used to justify that a need exists if they specifically describe an existing or historic problem demonstrating a need to construct.	Yes	No
14.	Sanitary Survey A sanitary survey by a health agency can be used to justify a need if the document specifically identifies an existing or historic problem of high failure rates.	Yes	No
15.	State-Approved Local/County Comprehensive Water and Sewer Plan This document may be used to justify a need and to update costs if the document contains descriptions that are project-specific and cost-specific.	Yes	No
16.	State Certification of Excessive Flow A document that is preliminary to an I/I report may be used to justify that a need exists for Category III.	Yes	No
17.	State Approved Municipal Wasteload Allocation Plan This document may be used to justify a need and to update costs if the document contains descriptions that are project-specific and cost-specific.	Yes	No
18.	NPDES or State Permit Requiring Corrective Action (with schedule) Facilities not meeting effluent limitations and on compliance schedules or facilities required to plan because they are at or near plant capacity may submit this documentation to justify a need.	Yes	No

Table D-1 — Continued

1992 Needs Survey
List of Acceptable Documentation Types

	Documentation Type	Justification of Problem	Justification of Cost
19.	Municipal Storm Water Management Plan This documentation details structural and source controls to be implemented to reduce pollutants in runoff which are discharged to storm sewers, detect and remove illicit discharges and improper disposal into storm sewers, monitor industrial pollutants in runoff, and to reduce pollutants in construction site runoff that are discharged to municipal storm sewers.	Yes	No*
20.	Nonpoint Source Management Plan/Assessment Report This document is a 4-year plan detailing measures to correct nonpoint source pollution.	Yes	No*
21.	Ground-Water Protection Strategy/NPS Report This document may be used to justify a need if it is a part of a Nonpoint Source Management Plan.	Yes	No*
22.	Wellhead Protection Program and Plan This document may be used to justify a need if it is a part of a Nonpoint Source Management Plan.	Yes	No*
23.	Delegated Underground Injection Control Program and Plan This document may be used to justify a need if it is a part of a Nonpoint Source Management Plan.	Yes	No*
24.	Estuary Comprehensive Conservation and Management Plan. This document is a management plan developed for an estuary that has been nominated for the National Estuary Program (NEP).	Yes	No*

* Documentation may have information that can be used to justify costs. Cost justification for Categories I - VI must be project-specific and distributable among the Categories I - VI. Other SRF eligible costs would be entered in the State estimates.

Table D-2

1992 Needs Survey
Small Community Alternative Documentation Types

Table D-2 lists the 12 alternative criteria for documenting a problem or cost estimate for small communities in the 1992 Needs Survey. These criteria represent petitions from specific States and Regions for inclusion of these documents in the 1992 Needs Survey. Each document was reviewed and the acceptability for justification of a need or a cost was determined.

	Documentation Type	Justification of Problem	Justification of Cost
1.	CSO State Strategies — Region I	Yes	No
2.	SRF Preapplication for Loan Assistance — Illinois	Yes	No
3.	1991 State Needs Survey — Illinois	Yes	Yes
4.	SRF Preapplication for Loan Assistance — Wisconsin	Yes	Yes
5.	SRF Loan Program F93 Priority List Questionnaire — South Carolina	Yes	Yes
6.	1992 Water Control Board Wastewater Needs Assessment — Virginia	Yes	Yes
7.	Farmers Home Administration Water and Waste Disposal Loans and Grants Preapplication — Arizona	Yes	No
8.	Farmers Home Administration Water and Waste Disposal Loans and Grants Application — Arizona	Yes	Yes
9.	Wastewater Feasibility Study for Snyder Sanitary District — Colorado	Yes	Yes
10.	Remedial Action Plan — Region 5	Yes	Yes
11.	SRF Preapplication for Loan Assistance — Nebraska	Yes	Yes
12.	1992 State Water Quality Needs Survey — Nebraska	Yes	Yes