

Executive Summary

The total publicly owned treatment works needs for the Nation as of January 1, 2004, are \$202.5 billion (Figure ES-1). This figure represents documented needs for up to a 20 year period. In addition to presenting needs, this *Clean Watersheds Needs Survey (CWNS) 2004 Report to Congress* (hereinafter referred to as “this Report”) also summarizes technical information such as flow, population and effluent for projects related to publicly owned municipal wastewater collection and treatment, combined sewer overflow (CSO) correction, municipal stormwater management, and recycled water distribution. The data in this Report were summarized from a comprehensive census survey of more than 30,000 water quality programs and projects which are generally eligible for funding under the Clean Water State Revolving Fund (CWSRF) program.¹

Scope and Methods

This Report was a collaborative effort between 49 States, the District of Columbia, Puerto Rico² (collectively referred to as *States* for the remainder of this Report) and EPA. Using recommendations of the CWNS 2004 National Workgroup (whose members are denoted by an asterisk in the acknowledgements), EPA defined a *need* as a project, with associated costs, that addresses a water quality or public health problem.

To be included as a documented need in Chapter 2 of this Report, a need must have existed as of January 1, 2004 and must have met the documentation criteria set forth in Chapter 1. These documentation criteria ensured the legitimacy of needs and the accuracy of cost and technical information in this Report by requiring a description and location of a water quality or public health problem, as well as site-specific pollution abatement measures with detailed cost information. Needs that did not meet these documentation criteria, as well as needs that are not defined in CWA Section 516(b)(1)(B), are included in Appendix A, Tables A-2, A-11, A-12, and A-13.

EPA prepared this Report to meet the requirements set forth in section 516(b)(1) of the Clean Water Act (CWA):

“The [EPA] Administrator, in cooperation with the States, ...shall make....(B) a detailed estimate...of the cost of construction of all needed publicly owned treatment works in all of the States...”

This is the 14th survey. The first occurred in 1972, and the 13th survey addressed needs as of January 1, 2000.

National Results

State Highlights

The largest reported total publicly owned wastewater treatment works needs, both more than \$20 billion, occur in New York and California. Florida, Illinois and Ohio each have needs in excess of \$10 billion. The States with the largest needs per capita are the District of Columbia (\$3,670), Hawaii (\$1,660) and West Virginia (\$1,400). Over three-fourths (76.8 percent) of the total needs reported are concentrated in

¹ The use of CWSRF eligibility rules in determining eligibility for the CWNS 2004 is independent of, and does not affect, States' annual determinations on which projects are eligible for CWSRF funding. There are some CWSRF-eligible projects that are not captured in the CWNS, as well as a few exceptional needs in CWNS that are not necessarily eligible for CWSRF funding. Although CWSRF eligibility is defined in the CWA and clarified by national EPA guidance, individual States might have policies not to fund certain kinds of projects. If those projects meet national eligibility criteria, however, they may be included in the CWNS.

² Alaska, American Samoa, Guam, Northern Mariana Islands and the Virgin Islands did not participate in the CWNS 2004.

18 States; 20 States each reported less than 1 percent of the total needs. Appendix A, Table A-1 presents the total needs for all categories and by State. Figure ES-1 presents the national needs by category.

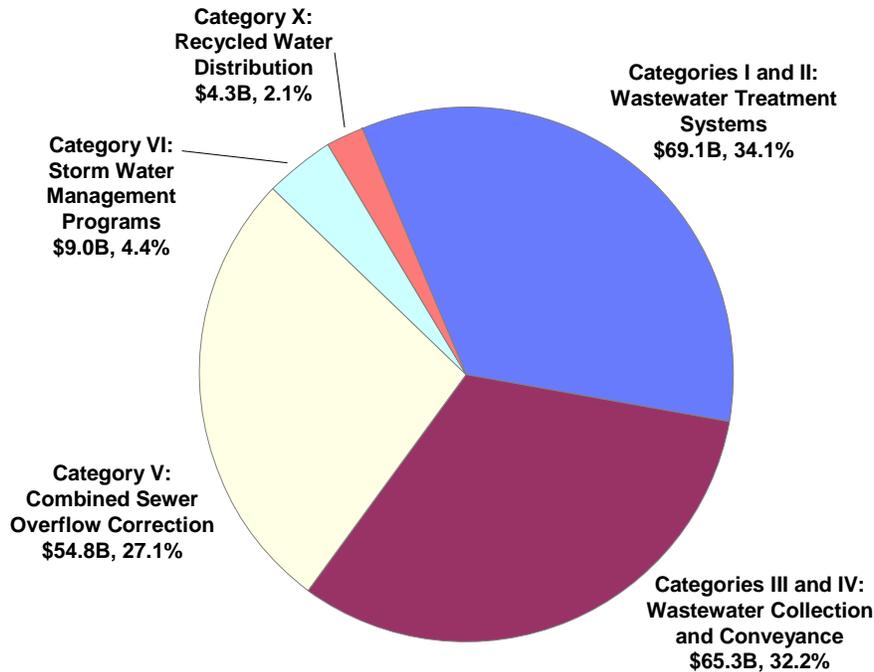


Figure ES-1. CWNS 2004 total documented needs (January 2004 dollars).

Wastewater Treatment, Collection and Conveyance

The national needs for the wastewater treatment and collection categories (Categories I through V) are \$189.2 billion. The needs for wastewater treatment (Categories I and II) include the capital costs of replacement, rehabilitation, expansion, upgrade or process improvement of existing treatment plants and construction of new treatment plants. Needs for wastewater collection and conveyance (Categories III and IV) include capital costs for replacement, rehabilitation or expansion of existing collection systems and construction of new collection systems. Needs for CSO (Category V) include measures for preventing or controlling periodic discharges of a mixture of stormwater and untreated wastewater that occur when the capacity of a sewer system is exceeded during a rainstorm.

The largest wastewater treatment and collection needs were reported by New York, California, Illinois and Ohio, each with more than \$10 billion. Minnesota, Oklahoma, Idaho, Oregon, Tennessee and Colorado experienced increases in Category I–V needs of more than 50 percent between 2000 and 2004. Notably, Puerto Rico, which did not participate in the CWNS 2000, reported \$3.7 billion in Category I–V needs.

Stormwater Management Programs

Twenty-eight States and the District of Columbia reported \$9.0 billion in stormwater management program needs (Category VI). These needs include the capital costs for developing and implementing municipal stormwater management programs to meet the requirements of Phases I and II of the National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4)

regulations.³ These needs generally do not include projects such as installing or rehabilitating storm sewers, some of which are included in the SSEs in Appendix A, Table A-11.

The largest stormwater management program needs were reported by Texas, Florida, Arizona and Minnesota, each with more than \$0.9 billion in needs. Florida, Minnesota and Texas experienced the largest increase in these needs.

Recycled Water Distribution

Recycled water distribution (Category X) is a new category designed to report on the increasing trend toward using recycled water for beneficial uses such as irrigation. Fifteen States reported \$4.3 billion in recycled water distribution (Category X) needs. California (\$1.9 billion) and Florida (\$1.7 billion) account for 84 percent of the Category X needs.

Small Community Needs

Small communities⁴ have documented needs of approximately \$17.0 billion, representing about 9 percent of the \$193.5 billion in documented wastewater treatment and collection system needs for the Nation. Small community needs are \$5.0 billion for wastewater treatment (Categories I and II); \$10.4 billion for collection and conveyance (Categories III and IV), and \$1.6 billion for CSO correction (Category V).

Pennsylvania, West Virginia and New York reported small community needs of more than \$1.0 billion each. Maryland (\$167 million) followed by Colorado (\$158 million) reported the largest increases in small community needs. Illinois, Minnesota, Alabama, Wyoming, Ohio and Rhode Island each reported an increase in small community needs ranging from \$80 million to \$135 million.

Other Documented Needs

Needs that met CWNS documentation requirements but are not defined in CWA Section 516(b)(1)(B) are summarized in Appendix A, Table A-2. This table includes nonpoint source (NPS) pollution control (Category VII) needs that are associated with implementing NPS management programs under section 319 of the Clean Water Act (CWA,) as well as developing and implementing Comprehensive Conservation and Management Plans (CCMPs) for estuaries under section 320 of the CWA.

Separate State Estimates

Needs that did not meet CWNS documentation criteria were recorded as Separate State Estimates (SSEs) in Appendix A, Table A-11. In addition to containing needs in the previously described categories, SSEs also contain needs related to confined animal–point source (Category VIII) and mining–point source (Category IX). Confined animal–point source (Category VIII) summarizes needs to address point source pollution from animal production activities that are subject to the concentrated animal feeding operations (CAFO) regulations. Mining–point source (Category IX) addresses problems caused by point source pollution from mining and quarrying activities. Estuary Management (Category XI) needs include a limited number of estuary management best management practices (BMPs) that were not eligible within

³ Some example Category VI costs that might be eligible are the cost for development of ordinances to implement erosion and sediment control practices and post-construction storm water management standards, development and production of materials used for public outreach and involvement, and design and construction of stormwater management ponds.

⁴ *Small communities* are defined as communities with a population of fewer than 10,000 people and an average daily wastewater flow of less than 1 million gallons.

other needs categories. Florida and New Jersey reported \$63 million and \$15 million in estuary management (Category XI) needs, respectively.

Concluding Remarks

Changes in Needs Since 2000

This Report reflects an increase since CWNS 2000 in publicly owned treatment works (POTWs) needs of \$16.1 billion (8.6 percent). The largest increases in national needs are associated with Category I and II wastewater treatment needs (\$5.4 billion increase), Category III-A and III-B sewer repair needs (\$3.5 billion increase), and Category VI stormwater management program needs (\$2.8 billion). The new Category X, recycled water distribution, accounts for \$4.3 billion in needs.

The increases in wastewater treatment needs and in sewer repair needs are due to a variety of factors. These include rehabilitation of aging infrastructure, facility improvements to meet more protective water quality standards, and in some cases, providing additional treatment capacity for handling wet-weather flows. Most (94 percent) of this increase can be attributed to needs increases of more than \$100 million each in only 92 of the 10,152 facilities with reported needs. An additional 78 facilities had needs that decreased by at least \$100 million each.

The increase in stormwater management program needs is due to greater availability of planning documents (Appendix G lists and describes document types) as well as increased intrastate coordination between various agencies in reporting these needs. However, these needs are still underreported. Only 28 States and the District of Columbia submitted stormwater management program needs data.

Trends in the Nation's Ability to Provide Secondary and Advanced Wastewater Treatment

Although this Report presents increasing needs, the Nation's secondary and advanced wastewater treatment capacity has improved dramatically since the CWA was enacted in 1972 (Figure ES-2). For example, the population receiving secondary or advanced treatment from POTWs increased from 84.1 million to 205.0 million, while the population receiving primary or no treatment from POTWs decreased from 51.9 million to 3.3 million. The increasing ability to provide secondary and advanced wastewater treatment is projected to continue if needs in this Report are met. Approximately 285 million people are projected to receive secondary or advanced treatment by 2024.

Funding the Needs

Although local ratepayers ultimately fund most wastewater treatment needs, the CWSRF is one of many supplementary Federal, State and local funding sources. From July 1, 2000, through June 30, 2004, EPA provided an annual average of \$1.3 billion in grants to State CWSRF programs to assist with point and nonpoint source pollution control needs. In the same period, States combined these CWSRF funds with State matching funds, bond proceeds and loan repayments to provide assistance, mostly in the form of loans, of approximately \$4.4 billion per year to local communities. The gap between facilities' funding and their total needs is addressed not only by other Federal, State and local funding sources, but also is expected to be increasingly addressed by activities related to EPA's Sustainable Infrastructure Initiative.

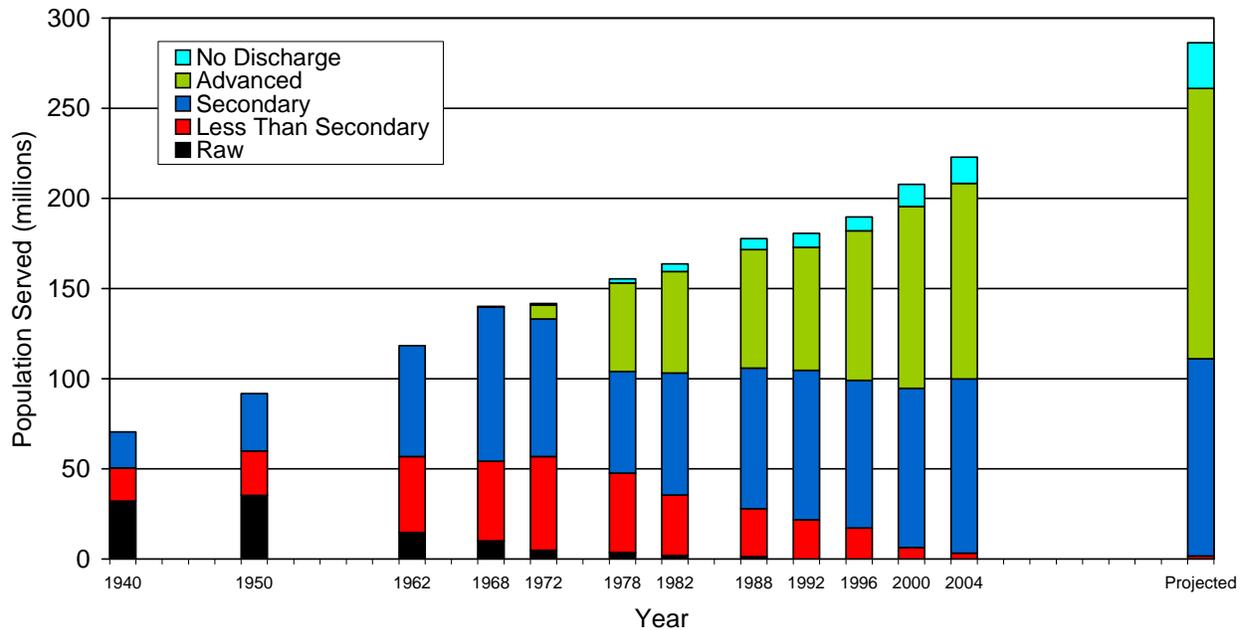


Figure ES-2. Population served by POTWs nationwide for select years between 1940 and 2004 and projected (if all needs are met), organized by wastewater treatment type.
Source: U.S. Public Health Service and USEPA Clean Watersheds Needs Surveys.

Sustainable Infrastructure Initiative

In response to the EPA's Gap Analysis and other recent 20-year estimations of wastewater treatment needs, the EPA Administrator convened a forum in January 2003—*Closing the Gap: Innovative Responses for Sustainable Water Infrastructure*. Using input from industry, government and academia obtained through this forum, EPA developed the Sustainable Infrastructure Initiative. The goal of the initiative is to reduce the infrastructure funding gap through a four part strategy focused on advanced facility management practices, water efficiency promotion, full-cost pricing and a watershed management approach.

The focus on improving CWNS geographic data has made the CWNS 2004 needs and technical data very useful in support of the watershed approach and other aspects of the Sustainable Infrastructure Initiative. With reliable CWNS geographic data, environmental professionals and the public can use CWNS needs and technical data with other environmental data for permitting, impaired water remediation, technology selection, project prioritization and other activities related to cost-efficient, watershed-based protection of water quality and public health.

This trend will continue in future surveys by integrating needs data with emerging efforts such as the CWSRF environmental benefits measurement effort, which seeks to estimate project-specific, water quality benefits. Needs data will also be integrated into Internet-based water quality models and other decision-support tools that support State and local protection of water quality and public health.

Other Future Influences on the Survey

The survey may also evolve in response to individual/decentralized sewage treatment and wastewater treatment plant security needs. EPA's 2003–2008 Strategic Plan recognizes that decentralized systems are a key component of the Nation's wastewater infrastructure. Therefore, EPA will provide national

direction and support to improve the performance of decentralized systems by promoting the concept of continuous management and facilitating upgraded professional standards of practice. The CWNS 2004's focus on improving the overall level of reporting of wet-weather-related needs will also continue.