

EXECUTIVE SUMMARY

The total reported water quality needs for the nation as of January 1, 2008, are \$298.1 billion¹ (Figure ES-1). This figure represents capital needs for up to a 20-year period for publicly owned wastewater pipes and treatment facilities; combined sewer overflow (CSO) correction; and stormwater management. In addition to presenting needs, this *Clean Watersheds Needs Survey (CWNS) 2008 Report to Congress* (hereinafter referred to as “this Report”) also summarizes technical information such as flows, populations served, and treatment levels provided by facilities. The data in this Report were summarized from a comprehensive census survey of more than 34,000 wastewater facilities and water quality projects.

Scope and Methods

This Report is a collaborative effort between the States, the District of Columbia, U.S. Territories (collectively referred to as *States* for the remainder of this Report) and U.S. Environmental Protection Agency (EPA). From September 2005 through December 2007, the CWNS 2008 National Workgroup (whose members are denoted by an asterisk in the acknowledgements) provided input on the survey methods.

Needs in this Report include the unfunded capital costs of projects as of January 1, 2008 that

- Address a water quality or a water quality-related public health problem existing as of January 1, 2008, or expected to occur within the next 20 years
- Meet the seven CWNS documentation criteria

Documentation criteria and needs categories are described in Chapter 1 of this Report. Documentation criteria ensured the legitimacy of needs and the accuracy of cost and technical information in this Report. To meet the criteria, a description and location of a water quality or water related public health problem, as well as site-specific pollution abatement measures with detailed cost information was required. Needs that did not meet these documentation criteria are classified as Unofficial Cost Estimates.

¹ All needs amounts in this Report are shown in January 2008 dollars.

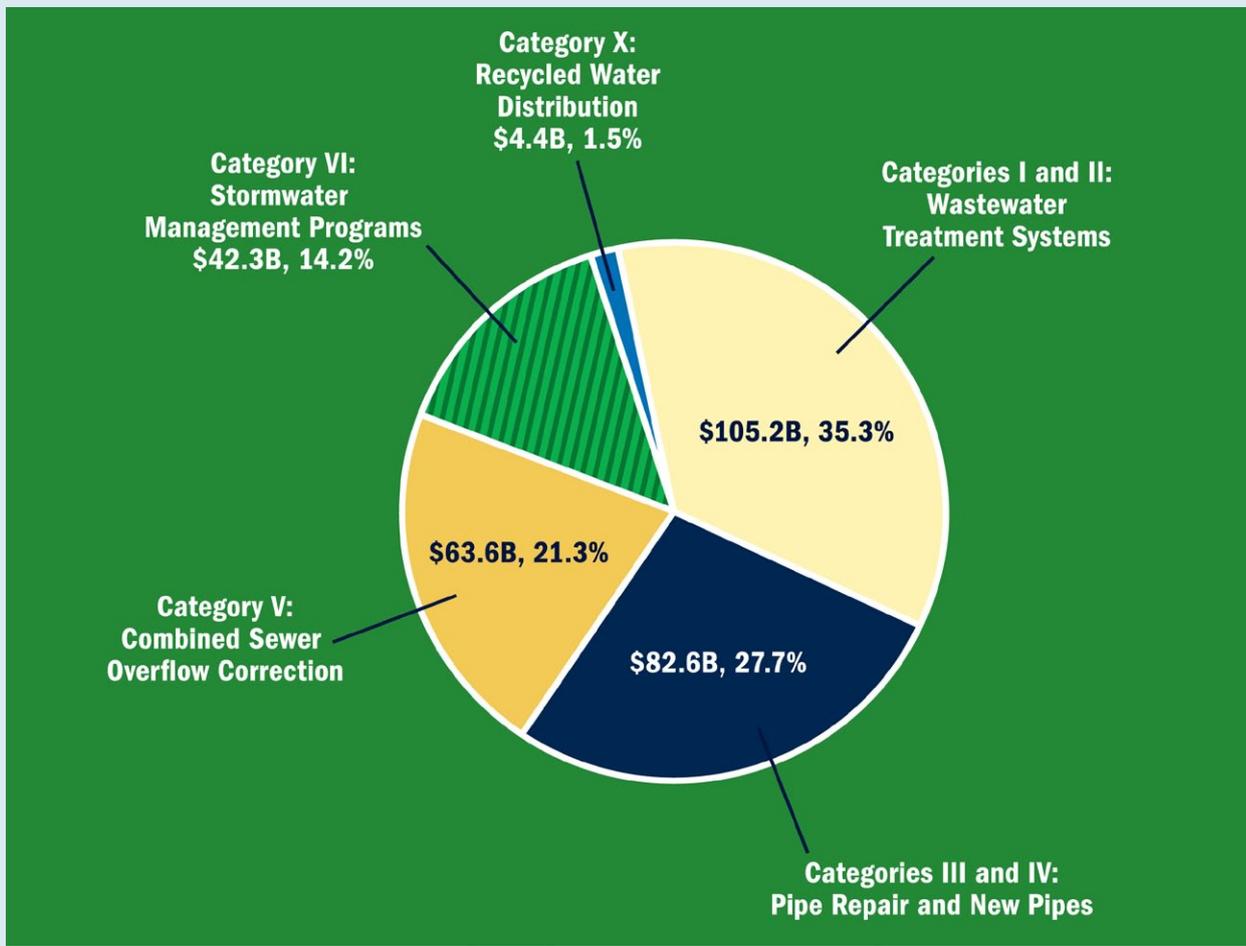


Figure ES-1. CWNS 2008 total documented needs (January 2008 dollars in billions).

National Results by CWNS 2008 Category

Wastewater Treatment, Pipe Repairs, and New Pipes (Categories I through IV)

The needs for Wastewater Treatment, Pipe Repairs, and New Pipes are \$187.9 billion, an increase of \$28.6 billion (18 percent) since 2004. Of this increase, \$16.3 billion is for Advanced Wastewater Treatment (Category II) needs, \$7.0 billion is for Secondary Wastewater Treatment (Category I) needs, and \$4.8 billion is for Pipe Repair (Category III) needs.

These needs increases are mainly for improvements to rehabilitate aging infrastructure, to meet more protective water quality standards, and to respond to and prepare for population growth. New York (\$17.0 billion), California (\$16.3 billion), Florida (\$9.4 billion), and New Jersey (\$6.3 billion) reported almost half (47 percent) of the Secondary Treatment (Category I) and Advanced Treatment (Category II) needs. Similarly, nearly half (47 percent) of the Pipe Repair (Category III) and New Pipe (Category IV) needs were reported by California (\$7.9 billion), Florida (\$6.5 billion), New York (\$5.0 billion), Ohio (\$4.4 billion), Texas (\$4.2 billion), Puerto Rico (\$3.7 billion), North Carolina (\$3.7 billion), and Massachusetts (\$3.6 billion).

Recycled Water Distribution (Category X)

The needs for Recycled Water Distribution are \$4.4 billion, a decrease of \$0.7 billion (14 percent) since 2004. California (\$1.7 billion) and Florida (\$1.2 billion) account for 66 percent of needs. Decreases in States' reported needs were mainly related to limited resources to enter needs, limited document availability, and difficulty with cross-program coordination. State increases in needs are a result of an increased recognition that recycled wastewater can be beneficial in meeting water quality standards, accommodating population growth, and saving money.

Combined Sewer Overflow (CSO) Correction (Category V)

The needs for Combined Sewer Overflow Correction are \$63.6 billion, a decrease of \$1.4 billion (2 percent) since 2004. Illinois (\$10.9 billion), New Jersey (\$9.3 billion), Pennsylvania (\$8.7 billion), Ohio (\$7.5 billion), New York (\$6.6 billion), and Indiana (\$5.0 billion) reported 74 percent of the needs. They also account for 565 of the 767 facilities with CSO Correction (Category V) needs. The States that reported increases indicate that the greater needs are from an increase in the availability of appropriate documents, primarily completed Long-Term Control Plans (LTCPs). Decreases in needs are from a variety of factors, including insufficient and outdated documentation; newly developed LTCPs showing less costs than were previously estimated with cost curves; and the allocation of significant funding for CSO projects since 2004.

Stormwater Management (Category VI)

The needs for Stormwater Management are \$42.3 billion, including \$7.6 billion for Conveyance Infrastructure (Category VI-A), \$7.4 billion for Treatment Systems (Category VI-B), and \$17.4 billion for Green Infrastructure (Category VI-C). New Jersey (\$15.6 billion), Pennsylvania (\$6.0 billion), California (\$3.8 billion), Maryland (\$3.8 billion), Texas (\$3.1 billion), Florida (\$2.5 billion), and New York (\$1.1 billion) reported 85 percent of the needs. The \$42.3 billion in stormwater management needs represents an increase of \$16.9 billion (67 percent) since 2004. Of the \$42.3 billion in stormwater management needs, \$33.0 billion is in regulated communities, and \$9.3 billion is in unregulated communities. The main reasons for increases in these needs are improved EPA and State communication across programs; States' increased abilities to document stormwater management needs; and emerging efforts to use green infrastructure as a supplement to traditional stormwater conveyance and treatment systems. States that reported decreases in Stormwater needs cited lack of time and money to document the needs, as well as low availability of appropriate documentation.

Small Community Needs

The needs for small communities are approximately \$22.7 billion, representing about 8 percent of the \$298.1 billion total documented needs. Pipe Repair and New Pipe (Categories III and IV) needs, Wastewater Treatment (Categories I & II) needs, and CSO Correction (Category V) needs for small communities are \$11.4 billion, \$8.5 billion, and \$2.7 billion, respectively. Pennsylvania (\$2.9 billion), New York (\$1.5 billion), Iowa (\$1.5 billion), Utah (\$1.4 billion), Illinois (\$1.2 billion), West Virginia (\$1.0 billion), and Ohio (\$1.0 billion) account for 50 percent of the small community needs. Eight additional States reported between \$0.5 billion and \$1.0 billion in small community needs.

State Highlights

New Jersey, California, and New York, all with close to \$30 billion in needs, reported the largest total needs. Florida, Illinois, Ohio, Pennsylvania, and Texas each have needs in excess of \$10 billion. New Jersey, California, Massachusetts, New York, Pennsylvania, Nevada, Iowa, and Utah are the States with the largest increases in needs since 2004, each with an increase of more than \$2 billion.² More than half (58 percent) of the total needs reported are concentrated in the eight States reporting needs in excess of \$10 billion. Twenty-three States each reported less than 1 percent of the total needs. Appendix B (Table B-1) presents the total needs for all categories by State. The District of Columbia (\$4,315), New Jersey (\$3,750), Guam (\$2,089), Nebraska (\$1,813), West Virginia (\$1,663), New York (\$1,527), and Maryland (\$1,505) reported the largest needs per capita.

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 and Appendix B, Table B-3. These appendices includes Nonpoint Source (NPS) Pollution Control (Category VII) needs and Decentralized Wastewater Treatment (Category XII) needs that are associated with implementing NPS management programs under section 319 of the CWA and Comprehensive Conservation and Management Plans (CCMPs) for estuaries under section 320 of the CWA.

Unofficial Cost Estimates

Forty-seven States reported Unofficial Cost Estimates of \$36.8 billion. Unofficial Cost Estimates did not meet this Report's Chapter 1 definition of needs. States entered those cost estimates for purposes other than this Report, such as State-level planning and communication with State legislatures and other groups involved with addressing and preventing water quality problems.

Tribal Needs

EPA does not track Tribal needs because the Indian Health Service (IHS) conducts a Sanitation Deficiency Survey of tribal needs for wastewater, drinking water, and solid waste and provides a report to Congress annually under Public Law (P.L.) 86-121. As of November 2007, tribal wastewater needs totaled \$719.2 million. The largest needs were reported in Alaska (\$282 million), Arizona (\$110 million), New Mexico (\$78 million), and California (\$59 million).

² In comparing 2004 needs to 2008 needs, the 2004 needs total include Category VII-D NPS Urban Pollution Control needs that were reported as unofficial need in Appendix F of the CWNS 2004 Report to Congress.

Trends in the Nation's Ability to Provide Wastewater Treatment

While this and prior CWNS reports show significant increases in needs, the nation is still making significant progress in providing wastewater treatment. Figure ES-2 shows that the number of people provided with advanced wastewater treatment increased dramatically (from 7.8 million people in 1972 to 113.0 million people in 2008). Moreover, the population served by less-than-secondary treatment decreased from more than 50 million in 1972 to 3.8 million in 2008.

In comparison to 2004, an additional 3.6 million people now receive centralized collection and wastewater treatment, for a current total of 226.4 million people or 74 percent of the U.S. population. There are now 2,251 non-discharging³ facilities, an increase of 3 percent since 2004. Such non-discharging facilities now serve 16.9 million people, or 5.5 percent of the U.S. population.

If the Wastewater Treatment (Categories I and II) needs specified in this Report are met, the number of non-discharging facilities and facilities that provide secondary or more advanced treatment is projected to increase by 6 percent from 14,625 to 15,451. The population being served by those facilities is projected to increase by 26 percent. The number of facilities that provide less-than-secondary treatment is projected to decline from 30 to 19 facilities, but the populations served by those facilities are projected to increase from 3.75 million to 3.88 million people. Overall, it is projected that a total of 15,618 facilities will serve a future population of 284.2 million people, or 79 percent of the U.S. population.

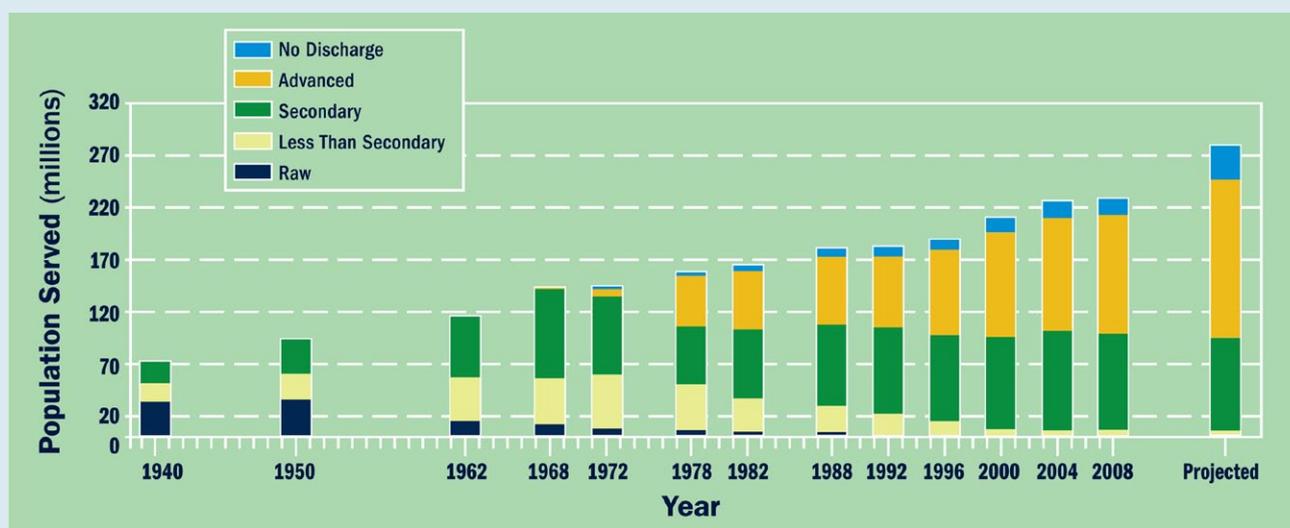


Figure ES-2. Population served by POTWs nationwide for select years between 1940 and 2008 and projected (if all needs are met), organized by wastewater treatment type.

Source: U.S. Public Health Service and EPA Clean Watersheds Needs Surveys

³ *Non-discharging* refers to facilities that do not discharge effluent to surface waters but instead reuse effluent for beneficial purposes (e.g., spray irrigation, ground water recharge).

Funding of Needs

Although local ratepayers ultimately fund most wastewater treatment needs, other funding assistance is available. The Clean Water State Revolving Fund (CWSRF) is one of many supplementary federal, State and local funding sources. From July 1, 2004, through June 30, 2008, EPA provided an annual average of \$1.1 billion in grants to State CWSRF programs.⁴ States combined the CWSRF funds with State-matching funds, bond proceeds, and loan repayments to provide assistance to local communities, mostly in the form of loans. In the same period, this assistance amounted to approximately \$5.5 billion per year. According to U.S. Census Bureau estimates⁵ for the most recent 4-year period available (2002–2006), local governments expended approximately \$15 billion per year to address capital wastewater needs and approximately \$2 billion per year to address capital stormwater needs. Over the past 20 years, the Operation and Maintenance (O&M) portion of total local wastewater expenditures grew from 50 percent to 60 percent. This is an indication of the increasing O&M needs related to aging wastewater infrastructure and to increasing material and energy costs. While local capital expenditures have remained flat over the past 20 years, they have increased over the past 10 years. In general, capital renewal projects have not kept pace with the increasing need to rehabilitate or replace aging infrastructure.

Sustainable Infrastructure Program

EPA's Sustainable Infrastructure Program emphasizes the need for individual utilities to close their infrastructure gap by finding efficiencies that reduce their overall infrastructure costs, while adopting pricing structures that will produce the revenues to meet their needs. Many utilities are adopting Asset Management and other management strategies that reduce costs by optimizing the timing and approach to infrastructure renewal and replacement. Significant cost reductions can also be realized through programs targeting water and energy efficiency. Additionally, collaboration between utilities in an area or watershed can produce efficiencies that reduce costs. Finally, utilities are increasingly implementing sustainable pricing structures. Such structures take into account the long-term infrastructure needs of a system and are designed to generate sufficient revenues to meet utility customers' needs.

Potential Influences on Future Surveys

Over the next two years, the EPA and State CWNS 2012 Workgroup will plan how to evolve CWNS to meet emerging needs and to enhance public data access. Potential changes to the CWNS 2012 include tracking wastewater treatment plant energy efficiency projects and climate change-related needs. In addition, the EPA and State CWNS 2012 Workgroup will continue efforts to address underreporting of needs.

⁴ During a comparable 4-year period (October 1, 2004, through September 30, 2008), Congress provided an additional annual average of \$0.1 billion in Special Appropriation Act Project earmark grants for wastewater treatment, stormwater management, and NPS pollution control projects.

⁵ Based on data from U.S. Census Bureau, Governments Division's State and Local Government Finances Survey (<http://www.census.gov/govs/www/estimate.html>).