

## Chapter 6

# Concluding Remarks

All the needs presented in this report existed as of January 1, 2000, and are eligible for CWSRF assistance under the CWA. Unlike wastewater infrastructure planning during the 1970s and 1980s, which used a 20-year planning horizon, current wastewater infrastructure planning horizons vary considerably across the United States. Often this planning horizon is now only 5 or 10 years. This report also differs from the reports presented to Congress in the 1970s and 1980s in that the information gathered by the States now includes data on storm water management programs and a wide variety of NPS pollution control projects in

addition to data on wastewater treatment and collection systems. The planning horizons of the storm water and NPS projects included in the CWNS 2000 range from less than 5 years to 20 years or more.

The 21-month data collection period was an extensive effort by EPA and the States. Although the level of effort that States put forth in reporting their CWNS 2000 data varied considerably because of resource and data availability, numerous advances were made toward increasing the value of the CWNS 2000 data beyond the CWA-mandated reporting requirements.



Photo courtesy of USDA NRCS

EPA believes that more State water quality managers will recognize the ancillary analytical opportunities that the CWNS database provides and will begin using the CWNS data to accomplish multiple objectives. EPA also expects that some of the parameters in future needs surveys will change as water quality management programs continue to address a broader spectrum of water quality problems. The issues described below have emerged as key areas of emphasis during this survey and are currently considered likely to drive the scope and objectives of future surveys.

***Watershed Management and Total Maximum Daily Loads.*** The needs in the CWNS are presented on a State-by-State basis, reflecting the responsibility that States have in achieving water quality standards and other CWA goals. Recently, however, substantial emphasis has been placed on using the watershed approach to address the water quality goals of the CWA more holistically. This is particularly the case as States continue to develop Total Maximum Daily Loads (TMDLs) for impaired waters on a watershed basis, integrating point and nonpoint source pollutant loadings. Rather than managing sources of pollution within political boundaries or from a single type of discharge, the watershed approach provides a more comprehensive perspective for both analysis and efficient use of resources. For example, the CWNS database can be used to summarize ongoing or planned projects in a watershed to facilitate the development of TMDL implementation plans.

EPA anticipates that more States will adopt the watershed approach to more efficiently manage available resources in a watershed and improve communication and coordination among the multiple agencies responsible for water pollution control. EPA and the States have made a concerted effort in the CWNS 2000 to gather information on a watershed basis consistent with the watershed management concept. In Chapter 5 of the report, national watershed analyses and a case study from the Long Island Sound are presented to illustrate the potential of the CWNS to organize needs information by watershed.

***New approaches for managing the investments in municipal wastewater infrastructure.*** Since the early 1970s, Federal, State, and local governments have made significant investments in wastewater infrastructure systems. Most of these investments were directed toward enlarging the capacity of sewers and treatment plants to serve a growing population and to upgrade the level of treatment to secondary treatment and beyond. EPA expects that a large portion of future investments might be directed to rehabilitation, replacement, and other activities that maintain the original capacity and treatment levels or increase efficiency. This is a reasonable expectation because much of the Nation's infrastructure (especially sewers) has reached, or soon will reach, the end of its original design life. New management techniques, including "asset management" and "life cycle cost analysis" will enable municipalities to make more intelligent investments in their wastewater infrastructure.

Asset management is a technique that will enable municipalities to determine the type of capital investment to make and when to make it to maintain the original capacity and function. The intent is to make a series of small, but significant, investments in operation and maintenance rather than letting a system deteriorate to the point of catastrophic failure, at which complete reconstruction might be required. Life cycle cost analysis is an approach in which initial investments in capital projects are determined based on the cost to build, operate, and maintain the facility over its entire useful life rather than on the initial construction cost alone.

***CSO and SSO Correction.*** The Nation has made progress toward planning for CSO and SSO correction. As this survey shows, some States have begun to use long-term control plans to document expected capital expenditures for CSO correction. EPA anticipates that more long-term control plans will be completed before the next survey, and as a result the quality of the CSO correction needs will be greatly improved. In the 1996 Clean Water Needs Survey, EPA recognized that SSOs occur throughout the United States and

initiated work to address SSO costs in coordination with the SSO Federal Advisory Committee and other EPA workgroups. The significant increase in I/I correction (Category III-A) and sewer replacement and rehabilitation (Category III-B) needs also demonstrates that local agencies are planning for SSO correction. Because of the disparity between the modeled SSO costs described in this report and the categories of needs characteristic of SSO needs, EPA expects that more SSO needs will be documented in the next survey.

#### ***Storm Water Management Programs and NPS***

***Pollution Controls.*** Only a limited number of States were able to document storm water management program and NPS pollution control needs. As a result, the needs reported underestimate the actual national needs in those categories. EPA anticipates that more States will be able to document these needs in the next survey, and the Agency will work with States to remove the barriers that might have prevented some States from including appropriate data for these two categories in the CWNS 2000.

#### ***Use of Decentralized Wastewater Treatment and***

***Individual On-site Systems.*** In April 1997 EPA responded to an inquiry by Congress, noting that “Adequately managed decentralized wastewater systems are a cost-effective and long-term option for meeting public health and water quality objectives, particularly in less-densely populated areas” (USEPA, 1997a). No estimate of national cost savings was given, although an evaluation of case studies in the study suggested that decentralized systems are cost-effective, particularly in rural areas. Using both centralized and decentralized wastewater systems can be cost-effective in urban fringe areas, depending on site conditions and the distance to an existing centralized system with available capacity. The response to Congress identified several

barriers to implementing these systems, including public misconceptions and lack of public knowledge. The work to remove these barriers is not yet completed.

Based on the needs presented in this report, EPA projects that 1,687 new treatment facilities will be constructed. Of these facilities, 634 facilities will serve communities with fewer than 1,000 people where abandonment of individual on-site systems is projected. Another 209 facilities are projected for communities with between 1,000 and 10,000 people. EPA expects that the projected increase in centralized collection and treatment systems might be lower in the next survey as more planning authorities recognize that properly designed, constructed, and operated on-site or decentralized systems should be considered a permanent part of the wastewater infrastructure rather than an interim solution.

***Planning and Targeting.*** EPA encourages States to target projects that are necessary to ensure compliance with the requirements of the CWA. EPA also promotes States’ use of enhanced planning and integrated targeting tools that include NPS and estuary projects along with wastewater treatment and collection system projects. The objective of these and other ongoing efforts is to manage CWSRF resources and other funds to more efficiently and effectively address high-priority problems in the watersheds of the United States.



*Photo by Randall McCune, courtesy of Michigan Travel Bureau*

