



EPA 1996 Clean Water Needs Survey: Small Community Wastewater Needs

Clean Water Needs Survey Overview

To assess the wastewater treatment needs of communities across the United States, the Environmental Protection Agency (EPA) regularly conducts the Clean Water Needs Survey (CWNS). The CWNS determines community wastewater needs by estimating the treatment required by a community to meet a projected 20-year population growth. The CWNS summarizes cost information (e.g., needs) for communities of all sizes, but only for projects eligible for State Revolving Funds (SRF). Congress uses this information to allocate SRF funds to the states.

The CWNS defines a "need" as a cost estimate for a project eligible for funding under the SRF program in accordance with Title VI of the Clean Water Act (CWA). The estimates include costs associated with protection of public health or

Did you know . . . ?

- Small communities will need \$13.8 billion by the year 2016 to meet Clean Water Act requirements.
- Small communities will need close to 21,000 wastewater treatment facilities by the year 2016.
- Sixty percent of the Nation's total small community need is represented by only 10 States (IL, IN, OH, PA, NC, NY, TX, VA, WI, and WV).

abatement of water quality problems. Listed below are types of costs included in the CWNS, and those costs not included because they are ineligible for federal assistance under the SRF program:

The Needs Survey includes costs for:

- Municipal wastewater
 - conveyance
 - storage
 - treatment
 - recycling
 - reclamation
- Stormwater and nonpoint source programs

The Needs Survey does not include cost estimates for:

- Operation and management
- Connections between homes and sewers
- Land acquisition for treatment plant construction or expansion
- Native American Tribes
- Alaska Native Villages
- Private wastewater facilities

Small Community Needs

This fact sheet focuses on a subset of the communities described in EPA's 1996 CWNS Report to Congress. The fact sheet highlights wastewater treatment needs of communities of 10,000 or fewer people (e.g., small communities), because their needs are often overshadowed by those of larger communities.

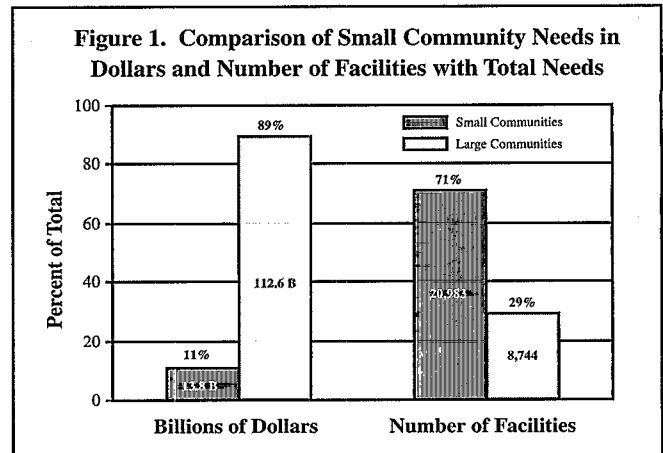
The 1996 CWNS determined that the total documented wastewater need for small communities through the year 2016 is \$13.8 billion. This represents 11 percent of the total \$139.5 billion documented need for all communities within the Nation. The Survey asked state officials to prioritize facilities based on needs that "address the most serious risks to human health, and are necessary to ensure compliance with requirements of the CWA." Small communities, however, often lack the resources to develop the detailed planning and engineering studies it takes to prioritize needs. Many of these communities could not appropriately document their existing needs and, therefore, they were not accurately reported.

Additionally, EPA quantifies some, but not all, needs in its CWNS as mentioned before. For example, cost estimates for indoor plumbing of homes or for connecting them to sewers are not included, since they are not eligible for SRF funding. The 1990 U.S. Census data indicate that in small communities, 758,298 housing units still lack complete plumbing and, therefore, do not have access to sewage disposal systems. Consequently, the wastewater treatment needs of smaller populations are greater than those reported in the 1996 CWNS.

Table 1 displays (1) the five states with the largest documented needs for small communities, and (2)

| State | Amount (Millions*) | Percent of Total State Need |
|----------------|--------------------|-----------------------------|
| Ohio | \$1,499 | 21 |
| Pennsylvania | \$1,430 | 24 |
| West Virginia | \$950 | 58 |
| North Carolina | \$781 | 20 |
| New York | \$699 | 4 |

* 1996 Dollars



their needs as a percentage of total state need. The need within these five states accounts for 38 percent of the total \$13.8 billion small community need in the country. Tables 2 and 3 provide a state-by-state listing of wastewater and facility needs. Data was compiled from the 1996 Needs Survey Report to Congress.

Treatment Facilities in Small Communities

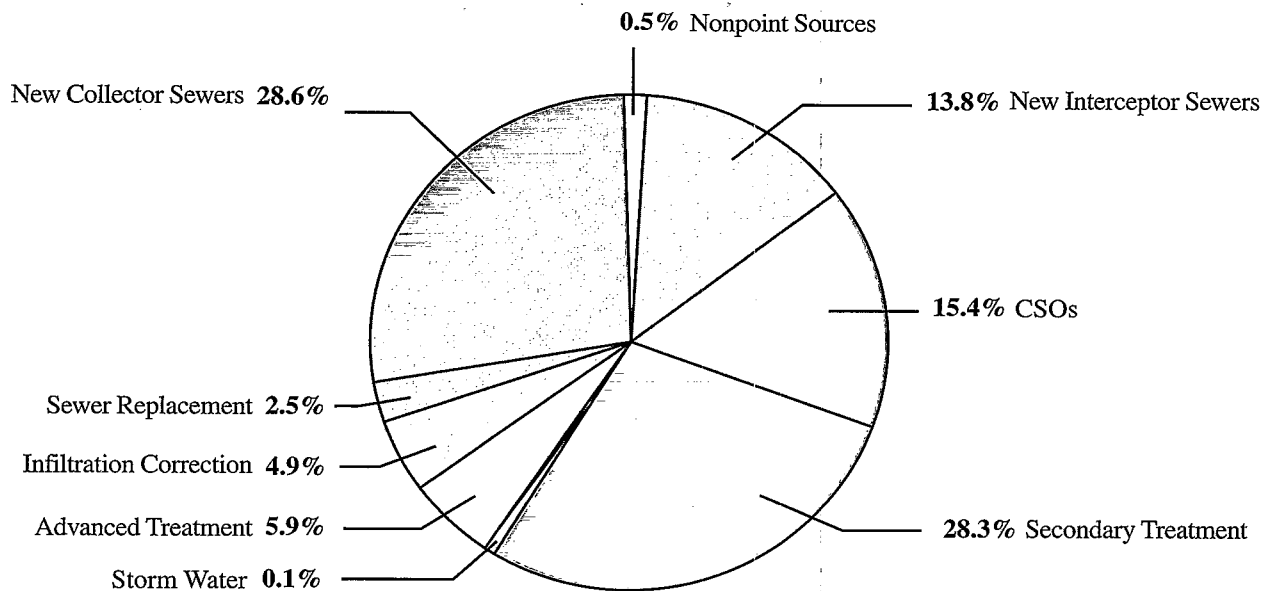
Nearly 21,000 wastewater treatment facilities will be needed to serve small communities by the year 2016. This represents 71 percent of all facilities needed for all community sizes throughout the United States (Figure 1). In six states (Alaska, Iowa, North Dakota, South Dakota, Nebraska, and West Virginia), more than 90 percent of all needed wastewater treatment facilities will serve communities of 10,000 or fewer people.

Type of Wastewater Treatment Infrastructure Needed in Small Communities

The type of treatment technologies needed by small communities is shown in Figure 2. The top three needs are:

- New collector sewers: 28.6 percent
- Secondary treatment: 28.3 percent
- Combined sewer overflows (CSOs): 15.4 percent

Figure 2. Category of Need by Percentage Within Small Communities

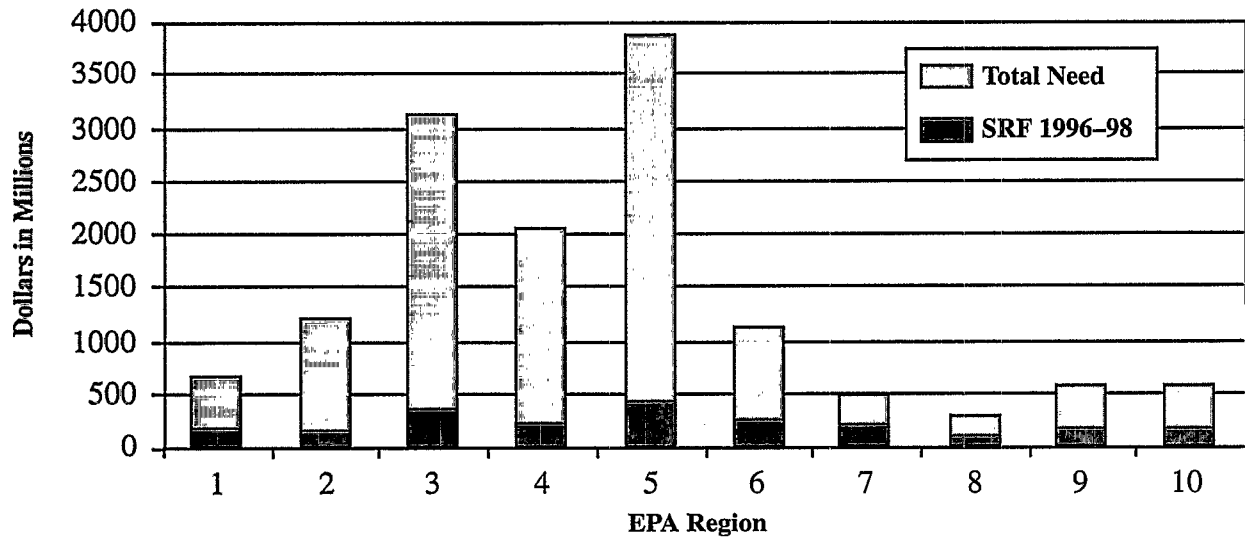


Total Small Community Needs = \$13.8 Billion

Small communities have a greater need than larger communities for basic sewage treatment infrastructure (i.e., the need to extend wastewater collection and treatment to less populated areas). For example, new collector sewers account for 28.6 percent of the total documented needs in small communities but represent only 6.0 percent of the total need in large communities.

Region 5 (which includes IL, IN, MI, MN, OH and WI) has the greatest small community need among the 10 EPA Regions (Figure 3). Region 5 needs nearly \$3.8 billion to meet the goals of the Clean Water Act. The states in Region 5 have provided \$450 million in SRF funding to these communities from 1996 through 1998. This represents approximately 1 percent of the amount required to meet the projected needs in Region 5 by 2016.

Figure 3. Total Estimated Small Community Needs by EPA Region and Proportion of That Need Met by SRF Disbursements From 1996-1998.



Additional copies of this fact sheet may be obtained by contacting the Office of Water Resources Center in EPA at (202) 260-7786 and referring to the document number EPA 832-F-99-058. You may also visit our Website (<http://www.epa.gov/OWM/smallc.htm>) to obtain other summaries of this information.

Table 2. Clean Water Needs Survey Data (1996): State-by-State Listing of Total Small Community (Population <10,000) Documented Needs (January 1996 Dollars in Millions) for Publicly Owned Wastewater Treatment Facilities and Other State Revolving Fund Eligibilities for the Year 2016.*

| State | Total (\$) Small Community Need | Percent of Total State Needs | Percent of Total National Small Community Needs | Secondary Treatment (\$) | Advanced Treatment (\$) | Infiltration/ Inflow Correction (\$) | Sewer Replacement/ Rehabilitation (\$) | New Collector Sewers (\$) | New Interceptor Sewers (\$) | Combined Sewer Overflows (\$) | Storm-water (\$) | Nonpoint Sources (\$) | Sum of Traditional SRF Eligibilities (\$) |
|----------------|---------------------------------|------------------------------|---|--------------------------|-------------------------|--------------------------------------|--|---------------------------|-----------------------------|-------------------------------|------------------|-----------------------|---|
| Alabama | 253 | 32% | 1.8% | 50 | 29 | 1 | 5 | 116 | 52 | 0 | 0 | 0 | 253 |
| Alaska | 257 | 53% | 1.9% | 247 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 3 | 254 |
| Amer. Samoa | 0 | 0% | 0.0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arizona | 192 | 9% | 1.4% | 79 | 44 | 0** | 12 | 46 | 11 | 0 | 0 | 0 | 192 |
| Arkansas | 145 | 55% | 1.0% | 63 | 13 | 2 | 0** | 41 | 26 | 0 | 0 | 0 | 145 |
| California | 340 | 3% | 2.5% | 180 | 6 | 11 | 3 | 96 | 43 | 0 | 1 | 0 | 339 |
| Colorado | 124 | 27% | 0.9% | 90 | 20 | 2 | 4 | 0 | 8 | 0 | 0 | 0 | 124 |
| Connecticut | 79 | 4% | 0.6% | 15 | 1 | 1 | 0 | 36 | 26 | 0 | 0 | 0 | 79 |
| Delaware | 37 | 17% | 0.3% | 5 | 0 | 0 | 0** | 20 | 12 | 0 | 0 | 0 | 37 |
| Florida | 49 | 1% | 0.4% | 15 | 4 | 6 | 0 | 19 | 5 | 0 | 0 | 0 | 49 |
| Georgia | 84 | 5% | 0.6% | 28 | 18 | 5 | 2 | 13 | 18 | 0 | 0 | 0 | 84 |
| Guam | 0 | 0% | 0.0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hawaii | 17 | 2% | 0.1% | 11 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 17 |
| Idaho | 74 | 24% | 0.5% | 38 | 0 | 0** | 5 | 14 | 17 | 0 | 0 | 0 | 74 |
| Illinois | 616 | 6% | 4.4% | 161 | 10 | 16 | 62 | 143 | 53 | 171 | 0 | 0 | 616 |
| Indiana | 647 | 13% | 4.7% | 78 | 39 | 12 | 7 | 96 | 50 | 365 | 0 | 0 | 647 |
| Iowa | 71 | 8% | 0.5% | 15 | 0** | 0** | 2 | 8 | 2 | 44 | 0 | 0 | 71 |
| Kansas | 135 | 10% | 1.0% | 61 | 9 | 21 | 4 | 18 | 22 | 0 | 0 | 0 | 135 |
| Kentucky | 377 | 16% | 2.7% | 85 | 14 | 15 | 9 | 132 | 78 | 44 | 0 | 0 | 377 |
| Louisiana | 245 | 34% | 1.8% | 77 | 24 | 2 | 2 | 96 | 44 | 0 | 0 | 0 | 245 |
| Maine | 205 | 27% | 1.5% | 50 | 2 | 6 | 5 | 33 | 27 | 82 | 0 | 0 | 205 |
| Maryland | 96 | 7% | 0.7% | 45 | 5 | 2 | 2 | 14 | 16 | 12 | 0 | 0 | 96 |
| Massachusetts | 169 | 5% | 1.2% | 54 | 13 | 3 | 0** | 74 | 24 | 0 | 0 | 1 | 168 |
| Michigan | 294 | 6% | 2.1% | 106 | 3 | 2 | 3 | 127 | 30 | 23 | 0 | 0 | 294 |
| Minnesota | 254 | 31% | 1.8% | 140 | 8 | 14 | 12 | 46 | 14 | 0 | 0 | 20 | 234 |
| Mississippi | 309 | 39% | 2.2% | 79 | 11 | 35 | 13 | 100 | 71 | 0 | 0 | 0** | 309 |
| Missouri | 244 | 9% | 1.8% | 61 | 0 | 5 | 7 | 102 | 41 | 28 | 0 | 0 | 244 |
| Montana | 64 | 54% | 0.5% | 30 | 4 | 2 | 9 | 14 | 5 | 0 | 0** | 0 | 64 |
| Nebraska | 41 | 7% | 0.3% | 33 | 3 | 1 | 0 | 2 | 2 | 0 | 0** | 0 | 41 |
| Nevada | 14 | 39% | 0.1% | 5 | 0 | 2 | 2 | 2 | 3 | 0 | 0 | 0 | 14 |
| New Hampshire | 60 | 8% | 0.4% | 14 | 3 | 3 | 1 | 26 | 13 | 0 | 0 | 0 | 60 |
| New Jersey | 492 | 7% | 3.5% | 172 | 34 | 31 | 33 | 139 | 49 | 14 | 0 | 20 | 472 |
| New Mexico | 65 | 40% | 0.5% | 16 | 16 | 1 | 2 | 28 | 2 | 0 | 0 | 0 | 65 |
| New York | 699 | 4% | 5.0% | 241 | 21 | 30 | 19 | 184 | 89 | 99 | 0 | 16 | 683 |
| No. Marianas | 3 | 6% | 0.0% | 3 | 0 | 0 | 0 | 0** | 0** | 0 | 0 | 0 | 3 |
| North Carolina | 781 | 20% | 5.6% | 59 | 136 | 32 | 23 | 338 | 186 | 0 | 1 | 6 | 774 |
| North Dakota | 20 | 22% | 0.1% | 10 | 0 | 0 | 8 | 0 | 1 | 0 | 0** | 1 | 19 |
| Ohio | 1,499 | 21% | 10.8% | 183 | 48 | 299 | 7 | 222 | 120 | 620 | 0 | 0 | 1,499 |
| Oklahoma | 74 | 23% | 0.5% | 27 | 17 | 5 | 1 | 10 | 14 | 0 | 0 | 0 | 74 |
| Oregon | 93 | 5% | 0.7% | 45 | 16 | 5 | 6 | 14 | 7 | 0 | 0 | 0** | 93 |
| Pennsylvania | 1,430 | 24% | 10.3% | 350 | 51 | 9 | 9 | 573 | 118 | 320 | 0 | 0 | 1,430 |
| Puerto Rico | 0 | 0% | 0.0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rhode Island | 12 | 1% | 0.1% | 0** | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 |
| South Carolina | 82 | 5% | 0.6% | 34 | 4 | 1 | 2 | 21 | 20 | 0 | 0 | 0 | 82 |
| South Dakota | 40 | 31% | 0.3% | 22 | 1 | 0** | 2 | 4 | 3 | 0** | 8 | 0 | 32 |
| Tennessee | 107 | 12% | 0.8% | 19 | 5 | 16 | 12 | 28 | 27 | 0 | 0 | 0 | 107 |
| Texas | 589 | 12% | 4.2% | 234 | 50 | 12 | 5 | 166 | 122 | 0 | 0 | 0 | 589 |
| Utah | 36 | 12% | 0.3% | 11 | 0 | 0 | 2 | 19 | 4 | 0 | 0 | 0 | 36 |
| Vermont | 115 | 36% | 0.8% | 14 | 21 | 4 | 0** | 30 | 9 | 37 | 0 | 0 | 115 |
| Virgin Islands | 9 | 10% | 0.1% | 4 | 0 | 0** | 5 | 0 | 0 | 0 | 0 | 0 | 9 |
| Virginia | 589 | 15% | 4.2% | 116 | 52 | 28 | 1 | 246 | 146 | 0 | 0 | 0 | 589 |
| Washington | 121 | 10% | 0.9% | 53 | 1 | 14 | 4 | 21 | 23 | 0 | 4 | 1 | 116 |
| West Virginia | 950 | 58% | 6.9% | 181 | 14 | 19 | 17 | 250 | 193 | 276 | 0 | 0 | 950 |
| Wisconsin | 555 | 27% | 4.0% | 211 | 42 | 8 | 11 | 222 | 61 | 0 | 0 | 0 | 555 |
| Wyoming | 8 | 21% | 0.1% | 6 | 0 | 0 | 1 | 0** | 1 | 0 | 0 | 0 | 8 |
| Total | 13,861 | 11% | 100.0% | 3,926 | 812 | 683 | 344 | 3,971 | 1,908 | 2,135 | 14 | 68 | 13,779 |

* This table summarizes the 1996 EPA assessment of documented design year needs for small communities by State. The assessment includes needs for traditional eligibilities (Categories A-G), storm water control, and nonpoint sources to satisfy the design year (2016) population living in small communities. All values are presented in millions of January 1996 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 estimated population of small communities in 2016. 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 that could document their needs.

** Estimate is less than \$0.5 million

Table 3. Clean Water Needs Survey Data (1996): State Listing of Estimated Number of Total Facilities Needed within a State to Serve Small Communities by 2016.

| State | Total Number of Facilities | Facilities Serving Small Communities | Percent of Total Facilities Serving Small Communities |
|----------------|----------------------------|--------------------------------------|---|
| Alabama | 503 | 357 | 71% |
| Alaska | 181 | 165 | 91% |
| Amer. Samoa | 0 | 0 | 0% |
| Arizona | 533 | 325 | 61% |
| Arkansas | 777 | 676 | 87% |
| California | 974 | 526 | 54% |
| Colorado | 420 | 269 | 64% |
| Connecticut | 219 | 92 | 42% |
| Delaware | 106 | 75 | 71% |
| Florida | 480 | 96 | 20% |
| Georgia | 797 | 582 | 73% |
| Guam | 7 | 3 | 43% |
| Hawaii | 34 | 11 | 32% |
| Idaho | 247 | 210 | 85% |
| Illinois | 1,287 | 811 | 63% |
| Indiana | 528 | 396 | 75% |
| Iowa | 986 | 897 | 91% |
| Kansas | 690 | 614 | 89% |
| Kentucky | 492 | 359 | 73% |
| Louisiana | 585 | 439 | 75% |
| Maine | 216 | 164 | 76% |
| Maryland | 433 | 212 | 49% |
| Massachusetts | 282 | 96 | 34% |
| Michigan | 788 | 512 | 65% |
| Minnesota | 824 | 676 | 82% |
| Mississippi | 736 | 640 | 87% |
| Missouri | 1,126 | 788 | 70% |
| Montana | 233 | 196 | 84% |
| Nebraska | 527 | 480 | 91% |
| Nevada | 83 | 55 | 66% |
| New Hampshire | 127 | 65 | 51% |
| New Jersey | 690 | 359 | 52% |
| New Mexico | 133 | 88 | 66% |
| New York | 1,375 | 1,004 | 73% |
| No. Marianas | 5 | 2 | 40% |
| North Carolina | 828 | 439 | 53% |
| North Dakota | 384 | 372 | 97% |
| Ohio | 1,370 | 959 | 70% |
| Oklahoma | 541 | 449 | 83% |
| Oregon | 272 | 182 | 67% |
| Pennsylvania | 2,165 | 1,624 | 75% |
| Puerto Rico | 0 | 0 | 0% |
| Rhode Island | 36 | 4 | 11% |
| South Carolina | 361 | 184 | 51% |
| South Dakota | 360 | 346 | 96% |
| Tennessee | 398 | 247 | 62% |
| Texas | 2,025 | 1,377 | 68% |
| Utah | 448 | 242 | 54% |
| Vermont | 126 | 96 | 76% |
| Virgin Islands | 12 | 9 | 75% |
| Virginia | 556 | 378 | 68% |
| Washington | 392 | 247 | 63% |
| West Virginia | 702 | 632 | 90% |
| Wisconsin | 1,206 | 868 | 72% |
| Wyoming | 142 | 88 | 62% |
| Total | 29,748 | 20,983 | 71% |