RURAL WATER INFRASTRUCTURE

Federal Agencies Provide Funding but Could Increase Coordination to Help Communities

Statement of Alfredo Gomez, Director, Natural Resources and Environment Team

Accessible Version
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What GAO Found

Seven federal agencies provide funding or technical assistance to rural communities in developing drinking water and wastewater systems and complying with federal regulations. The Environmental Protection Agency’s (EPA) Drinking Water and Clean Water Revolving Funds (SRF) are the largest source of funding and assistance, receiving $907 million and $1.45 billion respectively in fiscal year 2014, some of which goes to rural communities. The Department of Agriculture’s (USDA) Rural Utilities Service provides the next largest source of funding at $485 million in fiscal year 2014. The other five federal agencies that provide funding or technical assistance to rural communities are the Department of Housing and Urban Development; Department of Health and Human Service’s Indian Health Service; Department of Commerce’s Economic Development Administration; U.S. Army Corps of Engineers; and Department of the Interior’s Bureau of Reclamation.

GAO’s work on rural water infrastructure funding found the following issues that affect the ability of rural communities’ to fund water and wastewater infrastructure.

- Communities typically paid for drinking water and wastewater infrastructure through the rates charged to users of the drinking water and wastewater systems. In some cases, however, these communities did not have the number of users needed to share the cost of major infrastructure projects while maintaining affordable user rates. As a result, they depended heavily on federal and state grants and subsidized loan programs.
- Some rural communities did not have technical expertise and had to hire consultants and engineers to help design water or wastewater projects and complete the technical documents necessary to apply for funding. This included developing preliminary engineering plans and environmental documents. Some federal and state programs pay for technical service providers that communities can use to help them design and finance their projects, and apply for funding.
- Rural communities faced potentially duplicative application requirements when applying to multiple state or federal programs, making it more costly and time-consuming to complete the application process. For example, engineers GAO interviewed estimated that preparing additional preliminary engineering work could cost anywhere from $5,000 to $50,000 and that the cost of an additional environmental analysis could add as little as $500 to a community’s costs or as much as $15,000. As of February 2015, EPA, USDA, and several of the other federal agencies had taken steps to improve coordination of funding and assistance to rural communities. Most notably, the agencies developed a standard engineering report that communities can use to apply for funding from multiple agencies.
I am pleased to be here today as you consider the infrastructure needs facing the nation’s rural drinking water and wastewater systems. As you know, the nation’s water utilities face the task and costs of upgrading aging and deteriorating infrastructure in both drinking water plants and wastewater treatment systems, including collection systems, treatment plants, and distribution systems. The Environmental Protection Agency (EPA) estimates that the funding needs for drinking water infrastructure overall total $384.2 billion (as of 2011) and for wastewater infrastructure needs totals $298 billion (as of 2008). Many rural communities face significant challenges in financing the costs of replacing or upgrading aging and obsolete drinking water and wastewater infrastructure. The demand for drinking water and wastewater infrastructure projects in communities with populations of 10,000 and fewer people, which are often considered rural communities, is estimated by federal agencies to be almost $190 billion in the coming decades.

A number of federal agencies provide grants, subsidized loans, and technical assistance to rural communities for drinking water and clean water infrastructure development. This testimony draws on our reports reviewing EPA’s Drinking Water and Clean Water State Revolving Funds (SRF), the largest sources of federal funding for water and wastewater infrastructure, as well as programs managed by the Departments of Agriculture (USDA); Commerce; Housing and Urban Development; Health and Human Services; and the Interior; and the U.S. Army Corps of Engineers.

1These data are from EPA’s drinking water needs assessments. The most recent needs assessment is EPA, Drinking Water Infrastructure Needs Survey and Assessment: Fifth Report to Congress, EPA 816-R-13-006 (Washington, D.C.: April 2013) and the most recent clean water needs assessment is EPA, Clean Watersheds Needs Survey 2008: Report to Congress, EPA-832-R-10-002 (Washington, D.C.). EPA conducts a separate survey and assessment for each type of infrastructure, drinking water and wastewater, on separate 4-year schedules. The costs shown reflect the 20 year projected drinking water and wastewater infrastructure costs starting with the year that each survey was conducted.
My statement today is based on our prior reports issued from September 2007 through October 2012, for which we updated information as appropriate through February 2015. My statement focuses on (1) the federal agencies that provide funding or technical assistance for rural communities and fiscal year 2014 funding and (2) issues identified in our work that affect rural communities’ ability to fund water and wastewater infrastructure. Detailed information about scope and methodology for this work can be found in each of our issued reports. The work upon which this statement is based was conducted in accordance with generally accepted government auditing standards.

Background

Across the country, about 52,000 community water systems provide drinking water to communities, while more than 16,000 wastewater plants treat sewage and return it to a nearby water body. Like all communities across the nation, rural communities often have old or aging drinking water and wastewater systems. Federal agencies define rural differently, depending on agency guidelines and individual project or program authorizations. USDA’s Rural Utilities Service provides funding to communities of 10,000 or fewer people. EPA considers communities with 10,000 and fewer people as small. According to EPA, small public water systems have difficulties meeting the requirements of the Safe Drinking Water Act to provide safe drinking water to their customers. The smallest water systems, those serving fewer than 3,300 persons, make up only 8 percent of the population served, but represent nearly 83 percent of all systems with reported funding needs, according to EPA.

The need for a water infrastructure project can arise for multiple reasons, including bringing a system into compliance with wastewater or drinking water standards and replacing or upgrading aging equipment. For

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3A community water system is a public water system that serves at least 15 connections used by year-round residents or that regularly serves at least 25 residents year-round. Cities, towns, and small communities such as retirement homes are examples of community water systems.
example, arsenic is often present naturally in groundwater, and many rural communities that use groundwater may need to upgrade drinking water treatment systems to meet federal standards for arsenic. Others may need to update basic wastewater systems, which treat wastes by allowing them to settle out in ponds or lagoons, with more sophisticated equipment that mechanically and biologically removes solids and contaminants.

Our previous work on water infrastructure needs identified serious problems in providing safe drinking water and sanitation (wastewater) infrastructure in one largely rural region of the country, the region along the U.S.-Mexico border. U.S. residents along the border who do not have safe drinking water supplies often buy and store water in outdoor tanks or barrels for drinking and other domestic uses. This practice represents a significant health risk because the water is often transferred or stored in open containers and is subject to contamination. In addition, some residents rely on substandard septic systems or cesspools to dispose of sewage because they do not have access to wastewater treatment systems.

Federal agencies administer a number of programs that provide funding and technical assistance to rural communities to help them build water and wastewater systems and comply with federal regulations. EPA’s Drinking Water and Clean Water SRF programs and the USDA’s Rural Utilities Service program provided most of the funding, but there are a total of seven key agencies that provide funding for rural water infrastructure:

- EPA annually provides grants to states to help finance local drinking water and wastewater projects nationwide through the Drinking Water and Clean Water SRF programs, some of which goes to rural communities. States use this funding, along with a required 20 percent match, to capitalize their state revolving funds. The funds

4GAO-10-126.
5GAO-10-126.
6The Drinking Water SRF Program was established to make funds available to drinking water systems to finance infrastructure improvements. The Clean Water SRF Program was established to fund wastewater treatment projects.
provide low-cost loans or other financial assistance for a wide range of water infrastructure projects. In addition, EPA provides funds from the Drinking Water and Clean Water SRF programs to tribal nations throughout the United States for water and wastewater projects.

- USDA provides grants, loans, and technical assistance for rural water and wastewater projects through its Rural Utilities Service. USDA can provide assistance for various activities, such as construction of water treatment and sewage collection facilities, connection of single-family homes to water distribution or wastewater collection lines, and training for the operation of water and wastewater utilities. USDA targets its funding to communities with fewer than 10,000 inhabitants.

- The Department of Housing and Urban Development disburses grants to states and local governments through the Community Development Block Grant Program to fund housing, infrastructure, and other community development activities. The annual appropriation for the block grants is split according to formulas, so that 70 percent is allocated among eligible metropolitan cities and counties, and 30 percent among the states to serve cities with populations of fewer than 50,000 and counties with populations of fewer than 200,000.

- The Department of Health and Human Service’s Indian Health Service constructs water and wastewater projects through its Sanitation Facilities Construction Program. This assistance is available to tribal nations within the United States, and through the program, Indian Health Service constructs various projects, including distribution and collection lines, treatment facilities, and home connections.

- The Department of Commerce’s Economic Development Administration provides grants to economically distressed areas through its Public Works and Economic Development Program. Grant funds are to be used for construction of public facilities, including water and wastewater facilities.

- The U.S. Army Corps of Engineers (Corps) provides assistance for water and wastewater projects in rural communities as directed by Congress. Congress has authorized and appropriated funds for the Corps to provide assistance for a number of projects, including

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7 USDA defines a rural area as a city of 10,000 or fewer residents or any unincorporated area.

8 The Economic Development Administration defines an area as economically distressed if it meets one of the following three conditions: (1) an unemployment rate that is at least 1 percent greater than the national average, (2) a per capita income that is 80 percent of the national average or less, or (3) the area has experienced or is about to experience a special need arising from sudden and severe changes in economic conditions.
projects that benefit rural communities in need of water or wastewater infrastructure.

- The Bureau of Reclamation (Reclamation) can be directed by Congress to provide assistance for drinking water or wastewater treatment projects in response to individual project authorizations. In 2006, Reclamation received authorization, under the Rural Water Supply Act, to establish a rural water supply program.

As we have reported, EPA’s SRF programs are the largest sources of federal assistance to states and local communities for water infrastructure development. From fiscal years 2005 through 2014, funding for the Drinking Water SRF averaged $931 million annually and for the Clean Water SRF about $1.3 billion annually. In fiscal year 2014, the SRF programs were funded at $907 million and $1.45 billion respectively. See table 1 for fiscal year 2014 program funding by agency and requested fiscal year 2015 funding.

Table 1: Selected Water and Wastewater Infrastructure Programs, Fiscal Year 2014 Funding and Fiscal Year 2015 Funding Request (dollars in millions)

<table>
<thead>
<tr>
<th>Agency and Program or Project</th>
<th>FY2014 funding</th>
<th>FY 2015 funding request</th>
<th>Type of financial assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA, Clean Water State Revolving Fund Loan Program</td>
<td>$1,449</td>
<td>$1,018</td>
<td>Grants to states to capitalize loan funds</td>
</tr>
<tr>
<td>EPA, Drinking Water State Revolving Fund Loan Program</td>
<td>$907</td>
<td>$757</td>
<td>Grants to states to capitalize loan funds</td>
</tr>
<tr>
<td>USDA, Rural Utilities Service, Water and Waste Disposal Program</td>
<td>$485</td>
<td>$247</td>
<td>Grants</td>
</tr>
<tr>
<td>Housing and Urban Development, Community Development Block Grant</td>
<td>$3,030</td>
<td>$2,800</td>
<td>Formula grants</td>
</tr>
<tr>
<td>Department of the Interior, Bureau of Reclamation, Rural Water Supply</td>
<td>$67</td>
<td>$34</td>
<td>Loans and grants</td>
</tr>
<tr>
<td>Economic Development Administration, Public Works and Economic Development Program</td>
<td>$96</td>
<td>$85</td>
<td>Grants</td>
</tr>
<tr>
<td>Indian Health Services, Facilities and Environmental Health Support</td>
<td>$211</td>
<td>$221</td>
<td>Facility construction and technical assistance</td>
</tr>
<tr>
<td>U.S. Army Corps of Engineers</td>
<td>Est. $45 (general) $38 (environmental infrastructure)</td>
<td>$26 (general)</td>
<td>Loans Technical planning services or grants</td>
</tr>
</tbody>
</table>

Source: GAO analysis of Congressional Research Service and Indian Health Service data. | GAO-15-450T

Note: Funding refers to appropriations for fiscal year 2014 and budget request amounts for fiscal year 2015.
While these seven federal agencies can each provide funding for water and wastewater infrastructure in rural communities, they have varying eligibility criteria that may focus funding to specific communities on the basis of population size, economic need, or geographic location. For example, the USDA Rural Utilities Service program specifically provides funding to communities with populations of 10,000 or less. The Drinking Water SRF program, however, prioritizes funding on the basis of environmental improvement but may offer special technical assistance to small communities, and must set-aside a portion of funding specifically for such communities. Similarly, the Economic Development Administration has established formal nationwide programs with standardized eligibility criteria and processes under which communities compete for funding. Specifically, the agency’s criteria require projects to be located in economically distressed communities, regardless of the size of the population served, and the projects must save or create jobs. In contrast, Reclamation and the Corps have not historically had rural water supply and wastewater programs; rather, they have provided funding to specific projects in defined geographic locations under explicit congressional authorizations.

Our October 2012 report on rural water infrastructure funding found several issues that affect rural communities’ ability to obtain funding for water and wastewater infrastructure.9 These issues include financing, technical expertise, and agency coordination.

Communities typically paid for drinking water and wastewater infrastructure through the rates charged to users of the drinking water and wastewater systems. In some cases, however, these communities did not have the number of users needed to share the cost of major infrastructure projects while maintaining affordable user rates. In addition, unlike larger, urban communities that can issue their own public bonds to pay for major water and wastewater infrastructure improvements, it can be difficult for rural communities to independently finance such major improvements. In many cases, rural communities had limited access to financial markets, restricting their ability to issue bonds to raise capital. As a result, these communities depended heavily on federal and state grants and

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9GAO-13-111.
subsidized loan programs to finance their water and wastewater infrastructure projects.

Rural communities did not generally have the technical expertise to rebuild or replace their water and wastewater systems. As we reported in October 2012, they had few staff and often hired consultants and engineers to help them design a water or wastewater project, including developing preliminary engineering plans and environmental documents. Generally, once a community determines that it will build an infrastructure project, it seeks funding from various sources. Once funding is confirmed, a community or its consultant designs the project, obtains construction bids, contracts to build the project, and, if applicable, seeks reimbursement from funding agencies. Some federal and state programs pay for technical service providers that communities can use to help communities design and finance their projects, and apply for funding. Communities can also get assistance from local planning districts, which are voluntary associations of county and municipal governments that provide development assistance to their membership. In addition, according to EPA documents, in many cases, small systems may not be able or eligible to apply for loan assistance through the Drinking Water SRF because of a lack of technical, financial, or managerial capacity. EPA provides technical assistance through the Drinking Water SRF to help complete engineering studies to highlight operational areas for improvement, additional assistance in completing an environmental review and developing cost estimates during the planning process, or assistance completing an application for funding. The Rural Utilities Service also provides funding to nonprofits that provide technical assistance to communities with drinking water and wastewater issues. In 2011, EPA and USDA’s Rural Utilities Service signed a memorandum committing to work together to help rural communities face the challenges of aging infrastructure, increased regulatory requirements, workforce shortages, increasing costs and declining rate bases.10

Our 2012 report also found coordination issues between the agencies that provide funding to rural communities for water and wastewater infrastructure.11 Our analysis showed that EPA and USDA had not taken

11 GAO-13-111.
some of the actions specified in a 1997 memorandum of understanding on interagency coordination. For example, we found potentially duplicative application requirements when applying to multiple state or federal programs, including preliminary engineering reports and environmental analyses, which may make it more costly and time-consuming for communities to complete the application process. Federal and state programs each have their own application process through which communities can apply for funding, although the application processes generally include similar steps. These steps are (1) completing an application that asks for, among other things, basic demographic, legal, and financial information associated with the project; (2) developing a preliminary engineering report that provides basic design specifications and other technical information for the project; and (3) conducting an environmental analysis that considers the environmental effects of the proposed project and alternatives. In some states we reviewed, communities told us that they had to complete separate but very similar application documents for the state SRF and state-level Rural Utilities Service programs. For example, in Colorado, an engineer for several projects we reviewed told us that the engineering firm had to complete preliminary engineering reports for both the state SRF programs and the state-level Rural Utilities Service program even though the reports had similar formats and information. In addition, in Colorado, North Carolina, and South Dakota, the state-level Rural Utilities Service program did not typically accept environmental analyses prepared for the SRF program because the state’s analyses were less rigorous, according to Rural Utilities Service officials.

If consulting engineers have to provide similar, or even the same, information, in two different engineering reports or environmental analyses, their fees to the community may be higher. Engineers we interviewed estimated that preparing additional preliminary engineering work could cost anywhere from $5,000 to $50,000 and that the cost of an additional environmental analysis could add as little as $500 to a community’s costs or as much as $15,000. Moreover, having to complete

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12The joint memorandum, signed in 1997 by EPA and the USDA, sought to improve coordination among federal and state agencies as they help fund community projects. It identified four major actions that state and state-level federal offices can take to improve coordination and reduce inefficiencies and potential duplication of effort, including: cooperation in preparing planning documents; cooperation in removing policy and regulatory barriers; cooperation on project funding; and cooperation in preparing environmental analyses and meeting other common federal requirements.
separate preliminary engineering reports or environmental analyses may delay a project because of the additional time required to complete and submit these documents. State officials in Montana told us that coordination between federal and state programs and the implementation of uniform application requirements could reduce the time it takes an applicant to complete a rural water infrastructure project by up to half.

In our December 2009 and October 2012 reports, we recommended several actions to improve coordination among the agencies and programs, such as completing an effort to develop guidelines to assist states in developing their own uniform preliminary engineering reports to meet federal and state requirements and starting an effort to create uniform guidelines for environmental analyses that could be used, to the extent appropriate, to meet state and federal requirements. As of February 2015, EPA and USDA had taken, or are in the process of taking, several steps to respond to our recommendations to improve interagency coordination on rural water infrastructure projects:

- EPA and USDA, working with other agencies including the Department of Health and Human Service’s Indian Health Service and the Department of Housing and Urban Development, have developed a uniform preliminary engineering report template and associated guidance, according to EPA and USDA officials. The template has been adopted at the national level by EPA, USDA, and the Indian Health Service, and USDA began web-based training for field staff in May 2013. The agencies worked with 16 states to develop the template and, according to USDA officials, 7 adopted the template for their use, and other states may be using it informally.

- EPA and USDA have begun taking steps to develop guidelines to assist states in developing uniform environmental analyses. The agencies are participating in a work group, along with other federal agencies that fund rural water infrastructure projects (Department of Housing and Urban Development, the Department of Health and Human Services’ Indian Health Service, and the Department of the Interior). The work group has developed a matrix that describes the environmental analyses required by each agency that is to be a tool that communities applying for funding can use to identify and complete appropriate environmental analyses. In addition, EPA is working with USDA to determine the extent to which requirements for EPA and USDA water infrastructure projects duplicate one another. As of February 2015, the agencies have drafted a best practices memorandum that highlights key issues found during this work, as well as what some states are doing to foster interagency
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According to officials, the memorandum is being reviewed within EPA and USDA and is to be sent to the states for their review and comment.

- The agencies are also taking steps in the U.S.-Mexico border region to coordinate policies and procedures and to prioritize funding for projects. For example, several agencies are participating in the Tribal Interagency Task Force (e.g., EPA, USDA, Department of Housing and Urban Development, Indian Health Service, and Department of the Interior), a group that coordinates drinking water and clean water infrastructure projects on tribal lands, including the U.S. Mexico border. In addition, in 2014 EPA and USDA published a report describing a joint effort to address the critical public health and environmental challenges in the U.S.-Mexico Border region. This effort was created to leverage collective resources to assess needs within the border region. USDA announced a grant to fund the needs assessment in April 2014 and awarded the grant in June 2014, with a report expected in 2015.

In conclusion, the nation’s water and wastewater infrastructure needs are large and funding them will be challenging. Rural communities face additional challenges in funding their water and wastewater infrastructure needs, given the financial, technical expertise, and coordination challenges they face overall. Federal agencies, with states, have long played a role in assisting local communities and will likely continue to do so. As they do so, they can and should consider how to ease communities' efforts to obtain funding. In addition, technical assistance and better coordination of federal efforts could help communities' address these challenges.

Chairman Shimkus, Ranking Member Tonko, and Members of the Subcommittee, this concludes my prepared statement. I would be pleased to answer any questions you may have at this time.

If you or your staff members have any questions about this testimony, please contact me at (202) 512-3841 or gozomaj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this testimony. Susan Iott (Assistant Director), Mark Braza, Antoinette Capaccio, Lee Carroll, Bruce Crise, Nicole Dery, John Hocker, Micah McMillan, Tahra Nichols, and Kiki Theodoropoulos made key contributions to this testimony.
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