

Coordination of Efforts to Address Alaska's Rural Water and Sewer Needs

Background

Village Safe Water (VSW) embraces and depends on collaboration with communities, other agencies, and organizations to achieve its goals and objectives. VSW was created in 1972 with the passage of the State Village Safe Water Act. The role of the program is to work with rural communities to develop sustainable water and sewer facilities. In order to accomplish this, the program has three central functions, which include allocation of capital funds, project administration, and program coordination.

Funding Allocation

Currently, funding for water and sewer capital improvements in Alaska villages comes from the State of Alaska and five federal agencies. All funding is allocated using a data system that was jointly developed by VSW, the Alaska Native Tribal Health Consortium (ANTHC) and federal funding partners, including the Indian Health Service and two EPA tribal set-aside programs; USDA-Rural Development; and EPA Alaska Village Grant Program. Each year, this group of agencies works collaboratively to identify funding needs throughout the state, and then allocate funds to address these needs.

An important criterion for allocation of funding is the local capacity to operate and maintain existing facilities. In order to assess this, VSW works closely with the Rural Utility Business Advisor Program in DCCED and the Remote Maintenance Worker Program in DEC. This collaboration continues throughout the design and construction phases.

The disparity between available funding from all sources (\$63.66 million) and the cost of addressing critical health related sanitation needs (\$724 million) is approximately \$660 million. Critical health needs include first time service for homes without piped or covered haul and upgrades or replacement to address substantial health threats.

Project Administration

Once funding is allocated for individual projects, either VSW or ANTHC are assigned as the lead agency and are responsible for project administration throughout the planning, design and construction phases. Projects typically require two to four years to be completed, and both agencies work together to ensure that funding and technical assistance efforts are closely coordinated. Projects are constructed using local labor and overseen using a construction administrator, rather than construction contracting. This method of construction, called (local labor) "force account" construction, is preferred by Alaska villages because it employs and trains local workers. Also, because local residents are involved in construction, they are better able to maintain facilities after project completion.

Efforts to Provide Service to Remaining Unserved Homes

Over 3,300 homes in rural communities still lack indoor water and sewer service. The majority of these homes are located in villages with no centralized water and sewer system. The primary reason these homes and communities are still unserved is due to the high capital and operating costs associated with building and maintaining a centralized system in small, remote communities. Many of these villages have geographical challenges that make water and sewer service extremely challenging, and most households have very low incomes, making it difficult to pay a high monthly water and sewer bill.

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Besides working with other agencies on funding allocation and project administration, VSW plays a leading role in joint efforts to develop new approaches to address water and sewer needs. In 2012, VSW initiated a new project to spur worldwide research to develop innovative and cost effective water and sewer systems for homes in remote Alaska villages. The project, called "The Alaska Water and Sewer Challenge," focuses on decentralized water and wastewater treatment, recycling, and water minimization. These approaches have a high potential for use in individual homes and housing clusters. The goal is to significantly reduce the capital and operating costs of in-home running water and sewer in rural Alaska homes.

The Challenge project is coordinated by a steering committee made up of professionals from agencies that include the Indian Health Service, the Centers for Disease Control and Prevention, USDA-Rural Development, EPA, the Arctic Research Commission, the University of Alaska and three state programs. Funding for the project comes from the State of Alaska and EPA. Through an international solicitation begun in August 2013, the Alaska Water and Sewer Challenge called for teams to compete to create cost-effective designs for water and sewer technologies that can be constructed and operated in an arctic climate. A phased selection process has narrowed the number of teams to six. These six teams have been funded to submit written design narratives and make presentations to the project steering committee next summer. At that point, three teams will be selected to proceed with the next phase, which calls for prototype development and laboratory testing.

This novel public-private partnership combines the best that both types of organization provide. The purpose is to provide a service that is commonly in the realm of government service but in this case is very difficult to provide; by bringing in innovation from the private sector, new solutions or combinations of solutions are expected. The ultimate solutions will not become the intellectual property of the government agencies but rather will be retained by the teams that develop them, thus providing a long-term profit motive.

Other Activities

VSW also works closely with the Arctic Research Commission, the Centers for Disease Control and Prevention, and several other agencies to coordinate an annual workshop on rural sanitation. This one-day meeting, which is held in conjunction with the Alaska Health Summit in January, typically focuses on one aspect of water and sewer development, and includes over forty professionals from throughout Alaska and other arctic nations. This year's workshop topic is wastewater treatment and disposal. Past topics have included operation and maintenance, research needs, and washeterias.

VSW also took a lead role in discussions with the U.S. State Department as projects were being selected for development during the two-year chairmanship of the Arctic Council, which will last from April 2015 – April 2017. In a project approved by the State Department, members of the Arctic Council will work together to focus on the challenge of developing *Safe and Affordable Access to Household Running Water and Sewer*. The key event of the project is a two day international symposium to be held in Anchorage, Alaska during the summer of 2016. The conference will bring together researchers, engineers, manufacturers and vendors, and health experts to discuss challenges and solutions associated with making running water and sewer in small Arctic communities safe, affordable and sustainable. A comparison of the different regulatory frameworks and approaches utilized by Arctic nations will be discussed together with problems and solutions regarding the potential impact of climate change on sanitation infrastructure in the Arctic.