



Alaska Native Village and Rural Communities Program Annual Report 2015

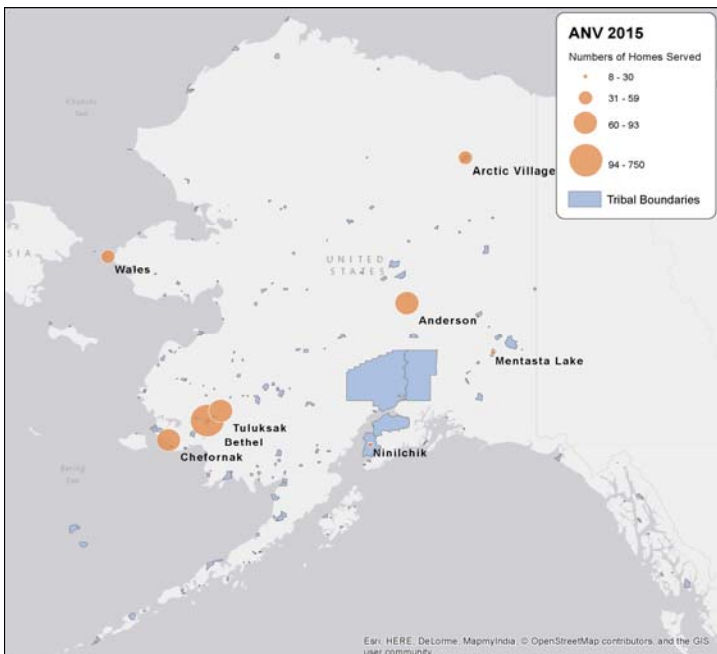
The Alaska Native Village (ANV) Program funds the construction of new drinking water and wastewater systems, or the improvement of existing systems in rural Alaskan communities. In addition the ANV program funds training and technical assistance for the sustainable operation of the systems.

Program Accomplishments

Since its inception in 1996, the ANV program has distributed nearly \$500 million in funds for sustainable and affordable in-home water and sanitation services in 240 Alaskan native villages and 60 non-native underserved communities. Funds are used for the planning, design, construction and/or repair of new or improved water and wastewater systems.

In FY 2015, EPA awarded \$10 million in ANV grant funding to 10 projects that will improve water and/or sanitation services for 1,100 Alaskan homes. An additional \$2 million in grant funds were provided for technical and financial training assistance. Approximately 10% of these homes will benefit from first-time access to safe water and/or wastewater services. Through the continued partnership with local, state and federal governments, the ANV program has helped to improve the health, safety and well-being of thousands of rural Alaskans.

Communities Served



Construction, operation and maintenance of water infrastructure is extremely difficult in rural Alaska. Many of the communities that receive support from the ANV program are low-income, have high rates of unemployment, and are based in locations that are only accessible by water and air. The construction of safe sanitation facilities is perceived as an unattainable goal for some communities due to high operational and construction costs and locations in challenging environments. Where there is no infrastructure, some community members haul water long distances and use buckets or pit privies to dispose of human waste, increasing the risk of exposure to life-threatening bacteria and parasites¹.

To expedite the delivery of critical infrastructure to communities with the greatest need, the ANV program uses the Indian Health Service's Sanitation Deficiency System (SDS) to identify projects for selection. The SDS identifies current sanitary deficiencies for existing homes based on annual surveys by the Indian Health Service. The State of Alaska uses the SDS as a baseline for funding considerations by all Federal and State Agencies. Each year, the ANV program funds the highest-priority projects in the system.

2015 Case Studies

Improving Human Health and Well-Being

The lack of adequately supplied safe drinking water and sewage disposal in rural Alaska can have detrimental impacts. Villages without basic sanitation facilities often have high rates of disease, gastrointestinal infections, severe skin infections and respiratory illnesses². A 2008 study conducted by the Centers for Disease Control and Prevention found that health disparities associated with lack of in-home water service could be addressed through sanitation infrastructure³. Decreasing the occurrence of human contact with sewage is key to preventing adverse health impacts. Villages that receive funding from the ANV program for the construction of sanitation facilities have a lower risk of skin infections and respiratory illnesses and an overall improvement in daily well-being³.

Case Study: First Time In-Home Water & Sewer Access for Homes in Kwethluk, Alaska

Until recently, the Kwethluk Community was the largest underserved community in Alaska, with limited access to drinking water and no wastewater infrastructure. A total of 181 homes lacked access to drinking water and wastewater infrastructure. Community members self-hauled potable water from a central distribution point and disposed of human waste using open buckets that were transferred in collection containers via ATV to a lagoon outside of town. These conditions presented major health risks, as spills were common and contamination was spread throughout the community by rain and airborne dust. In 2009, the ANV program and other partners funded the construction of water source, water treatment facilities, water storage, water distribution, sewer collection, sewer treatment and plumbing to each Kwethluk home. By 2016 this investment will provide in-home access to drinking water and sanitation to this community for the first time, reducing residents' exposure to health risks.



Construction of sewer collection piping in the Kwethluk, Alaska community

Partnering for Infrastructure Resiliency

The ANV program has involved collaboration among EPA and program partners including the Indian Health Service's Sanitation Facilities Construction Program through the Alaska Native Tribal Health Consortium, the State of Alaska Department of Environmental Conservation, State of Alaska Department of Commerce-Community and Economic Development, and the U.S. Department of Agriculture-Rural Development. These collaborations address the basic water and sanitation needs of underserved remote Alaskan villages by creating access to affordable and sustainable sanitation facilities. For each project, a designated lead agency oversees and coordinates development, design, and construction. In addition, the ANV program is authorized to provide training and technical assistance, which helps communities maintain and protect their water infrastructure investments. In addition to supporting construction of infrastructure to address water and sanitation needs in rural Alaskan villages, ANV program partners collaborate to identify ways to enhance the affordability and sustainability of infrastructure investments.

Case Study: Joint Efforts for Sustainability in Quinhagak, Alaska



View of typical remote Alaskan arctic tundra with two people on an all-terrain vehicle

When heating is necessary to keep underground pipes from freezing, the high cost of electricity in rural Alaska (up to 50 cents per kilowatt hour) can result in large energy bills. In 2010, local, state and federal partners coordinated in an effort to assist Quinhagak villages in finding affordable, sustainable solutions to combat freezing pipes and high energy costs. With ANV funds, EPA, Alaska Energy Authority, and the State of Alaska collaborated to construct a system to use excess energy from generators to save money when heating pipes. Typically, diesel generators are used to provide electricity in rural Alaska, as the heat from generators gets blown through and out in a similar fashion as a radiator. Waste heat from generators is then used to circulate the excess heat through piping systems to prevent freezing due to the permafrost. This solution has resulted in a sustainable method of re-use, which is cost-efficient for the village community.

For more information: <http://www2.epa.gov/small-and-rural-wastewater-systems/alaska-native-villages-and-rural-communities-water-grant-program>

1. Alaska Department of Environmental Conservation, Village Safe Water Program summary; <http://dec.alaska.gov/water/vsw/pdfs/vswbrief.pdf>
2. Robert C. Holman, Anianne M Folkema, Rosalyn J. Singleton, John T. Redd, Krista Y. Christensen, Claudia A Steiner, Lawrence B Schonberger, Thomas W. Hennessy, James E. Cheek (2011), 'Disparities in Infectious Disease Hospitalizations for American Indian/Alaska Native People', Public Health Reports. 2011 Jul-Aug; 126(4): 508-521, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3115210/>
3. Thomas W. Hennessy, Troy Ritter, Robert C. Holman, Dana L. Bruden, Krista L. Yorita, Lisa Bulkow, James E. Cheek, Rosalyn J. Singleton, Jeff Smith (2008), 'The Relationship Between In-Home Water Service and the Risk of Respiratory Tract, Skin, and Gastrointestinal Tract Infections Among Rural Alaska Natives', American Journal of Public Health, Vol. 98, No. 11. <http://www.ncbi.nlm.nih.gov/pubmed/18382002>