

Alaska Arctic Policy Commission Implementation Recommendation 3A



Joint Meeting of the House
Committee on Economic
Development, Tourism, and
Arctic Policy and the Senate
Committee on the Arctic

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Environmental Conservation

Recommendation 3A

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Foster the delivery of reliable and affordable in-home water, sewer, and sanitation services in all rural Arctic communities

Progress in Alaska Village Sanitation

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- For half a century, we've focused on getting rid of the honey bucket.
- Much progress has been made:
 - ▣ 30 years ago, fewer than 25% of rural Alaska households had running water and flush toilets.
 - ▣ In 1996, 55% of rural homes had piped or covered haul service.
 - ▣ Today, approximately 85% of rural homes have indoor plumbing (over 90% if regional hubs are included in the calculation).

“Centralized” Approach Since 1970

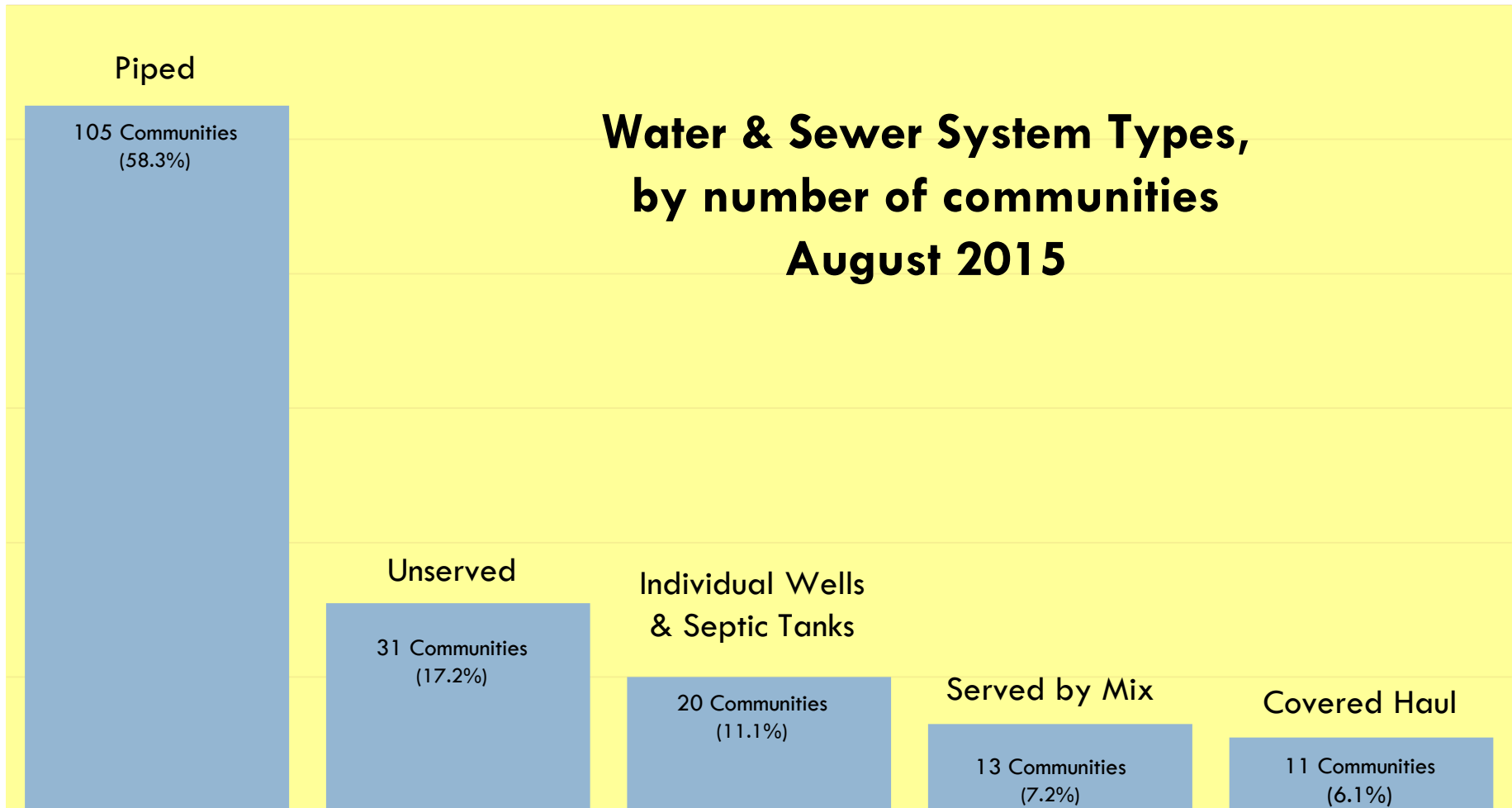
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- ❑ 100% water treatment to full regulatory compliance (regardless of ultimate use)
- ❑ Storage of large quantities of water, usually requiring heat addition
- ❑ Distribution of treated water to individual homes via pipes or haul vehicle, usually requiring heat addition
- ❑ Collection of all household sewage for lagoon disposal, usually requiring heat addition

Rural Alaska Sanitation

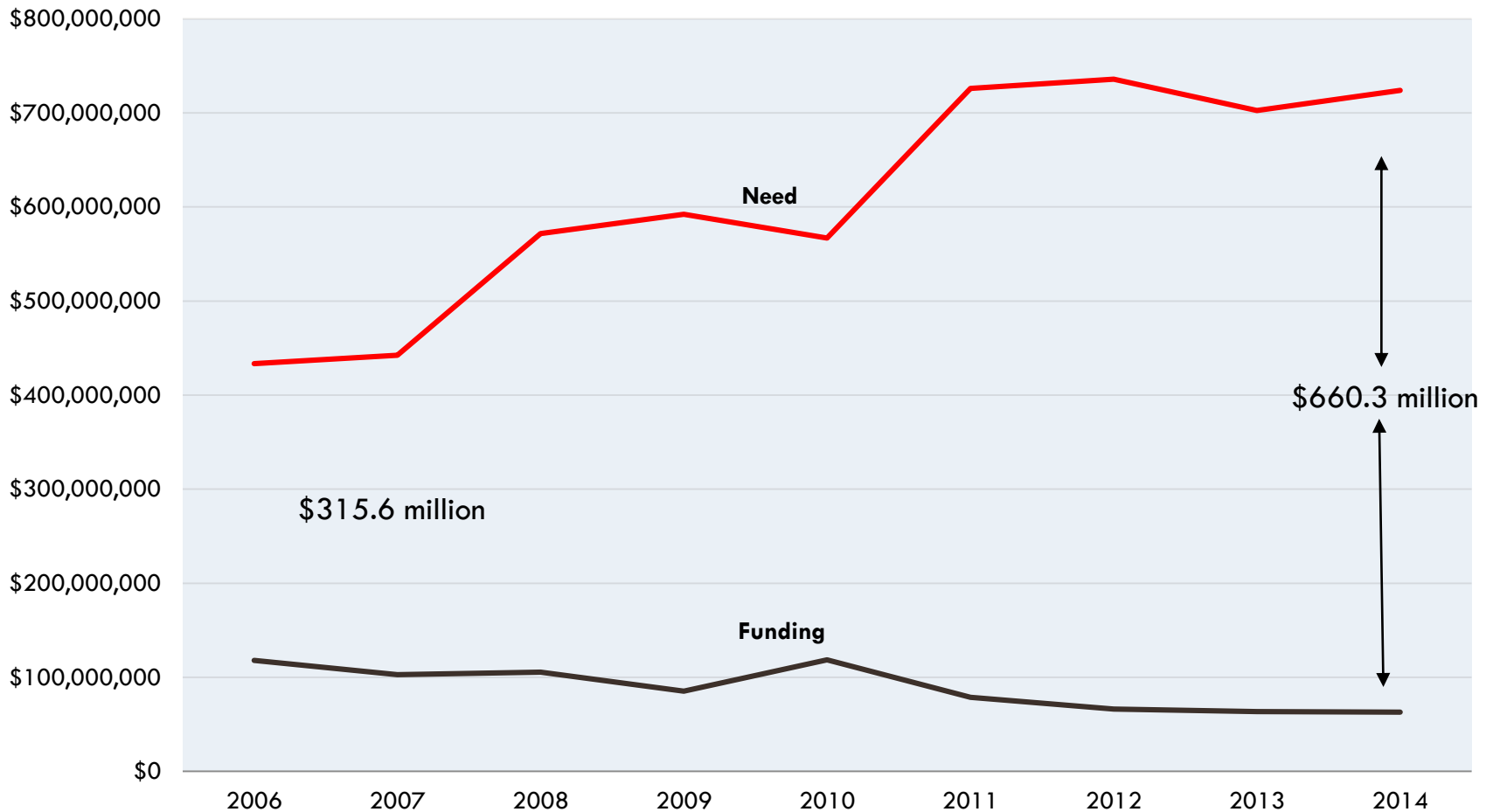
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The Growing Gap Between Critical Needs and Available Funding

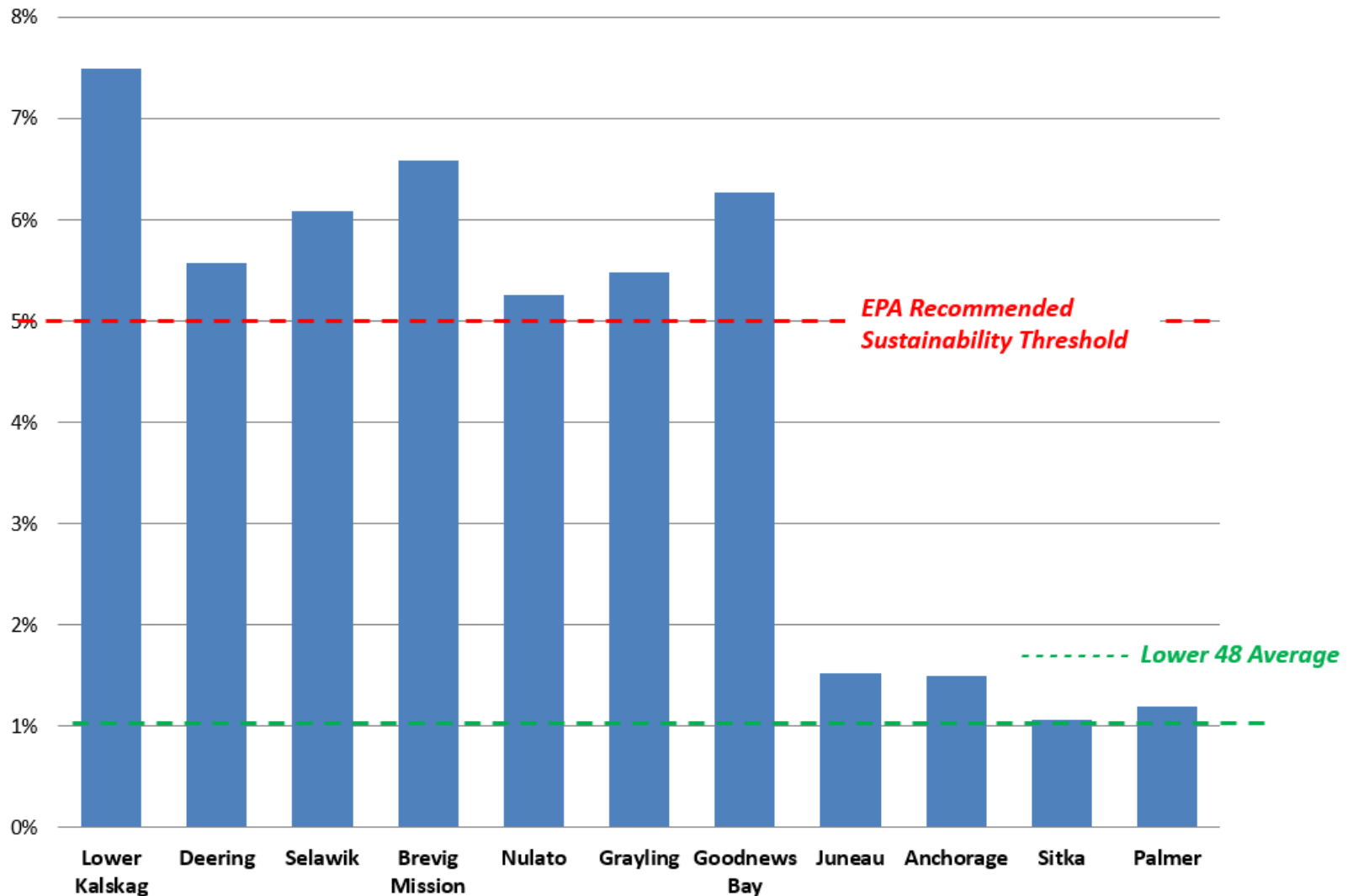
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Total Rural Sanitation Funding vs. Health-Related Infrastructure Funding Need



Water and Sewer User Fees as a Percentage of Median Household Income

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Bottom Line


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- ❑ Conventional, community-wide piped systems and truck haul systems are expensive to construct, maintain and replace.
- ❑ Many communities cannot afford the high operation and maintenance costs associated with piped or haul systems.
- ❑ Available funding is not adequate to serve remaining homes and make needed improvements.
- ❑ Innovative approaches are needed in order to address health problems associated with water and sewer system deficiencies.

“The Alaska Water and Sewer Challenge”

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**ALASKA WATER
AND SEWER
CHALLENGE**



THE ALASKA WATER AND SEWER CHALLENGE

To improve the health of rural Alaska residents, the Alaska Department of Environmental Conservation is spearheading a research and development effort to find better and more affordable ways to deliver drinking water and sewage disposal services to rural Alaska.

THE PROBLEM

- ▶ Over 4,500 rural Alaska homes lack running water and a flush toilet. Many more depend on aging and deteriorating piped and haul systems.
- ▶ Lack of in-home water and sewer service in rural Alaska causes severe skin infections and respiratory illnesses. Residents of Southwest Alaska suffer rates of invasive pneumococcal disease (IPD) that are among the highest in the world.
- ▶ To correct this public health problem, agencies have funded conventional, community-wide piped and truck haul systems. Although these systems work, they are expensive to construct and many communities cannot afford their high operational costs.
- ▶ Funding to build systems has declined severely while costs have risen sharply. The deficit between available funds and needs is over \$660.3 million.
- ▶ A different approach to delivering these services is needed.

EXISTING CONDITIONS


Some communities in rural Alaska use a household toilet facility known as a "honey bucket". A plastic bag lined bucket collects urine and feces. Then, plastic bags of feces from honey buckets are disposed in a sewage lagoon.

- ▶ For more images of existing conditions, visit the [Photo Gallery](#).

THE SOLUTION

The Alaska Department of Environmental Conservation has initiated a new project to spur worldwide research to develop innovative and cost

RURAL ALASKA PHOTO GALLERY



Key Components of Alaska Water & Sewer Challenge

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- ❑ Private sector driven – with ownership of intellectual property retained by project teams
- ❑ Performance targets include sufficient water for health, affordable operation and capital cost, constructability, and long-term operability
- ❑ Evaluation criteria also includes efforts to gather user input from communities, innovative approach to design



Alaska Rural Water and Sewer: Other Ongoing and Recommended Initiatives

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International Conference on Water and Sewer Service in Rural Arctic Communities

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- In conjunction with the U.S. chairmanship of the Arctic Council, DEC has proposed this conference.
- Conference would take place in Anchorage, in the fall of 2016.
- Engineers, scientists, researchers, educators, policy makers from across the Arctic would come together to compare challenges, approaches and ideas.
- Pilot systems being developed by the Alaska Water and Sewer Challenge would be demonstrated.

Statewide Study: Assess feasibility of piped water and sewer in all remaining unserved villages

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- ❑ Funded jointly by EPA and State of Alaska.
- ❑ Includes around 40 villages with no household services or small haul system service.
- ❑ Includes capital and operating cost estimates.
- ❑ Identifies issues such as limited water source, lack of local gravel source, access constraints, etc.
- ❑ Project oversight by Village Safe Water Program
- ❑ Feasible systems will be considered for future funding.

Connections between increased water use and improved health

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- Recent studies have shown that lack of in-home water and sewer service in rural Alaska causes severe skin infections and respiratory illnesses.
- More studies are needed to better understand the amount and different uses of water in the home that have the greatest impact on health improvement.
- Improved public education and outreach about this connection is also needed, in order to foster best water use practices in homes.

Technical Service Providers: Essential to keeping existing systems running

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- The Remote Maintenance Worker (RMW) and Rural Utility Business Advisor (RUBA) programs provide essential training and technical assistance to rural water and sewer system operators and managers throughout Alaska.
- These programs are funded primarily by federal assistance grants, which are subject to federal appropriations specific to Alaska.
- Without federal funding, these programs would be dependent entirely on state funding.

Long-Term Initiatives for Legislative Consideration

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- Local contribution for water and sewer improvements (currently prohibited by VSW statute): A small local contribution would help villages focus on only the most critical improvements, and help make possible a “micro-loan” program for smaller capital projects.
- A state-funded subsidy for water and sewer improvements would provide enhanced incentive for operation and maintenance, and extend the life of existing infrastructure – saving millions in replacement costs.

Questions?

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