

# Ongoing Barriers to Access Water and Sanitation in Rural Alaska



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*Alaska Native Health Board, Water and Sanitation Committee*

## **Executive Summary**

Piped water prevents disease and unnecessary suffering, and saves money and lives. Health disparities in rural Alaska persist due to lack of piped water systems. The Infrastructure Investment and Jobs Act provided \$3.5 billion to the Indian Health Service (IHS) for sanitation facilities construction for Alaska Native and American Indians, but the projects in rural Alaska still require cost contributions for the costs to serve public facilities. The State of Alaska is in a position now to support these projects through its Village Safe Water (VSW) Program, yet several barriers exist for rural Alaska communities to access this funding. Operation and Maintenance Best Practices scores and Sustainability Plan requirements prevent communities from accessing VSW Program funds, which are required to match federal funds from USDA and EPA. The result of these barriers is that our rural Alaska, predominately Alaska Native communities will miss the opportunity to leverage VSW funds to fully serve communities. We should act now to take advantage of the opportunity the IJA offers to provide lifesaving water and sanitation in rural Alaska.

## *Key Takeaways*

- Infrastructure Investment and Jobs Act funding is available now to support water and sanitation for Alaska Native and American Indian homes and is allocated over a five year period through federal fiscal year 2026.
- Alaska Village Safe Water Program Funds can help close the gap of required cost contributions for costs to serve public facilities in rural Alaska communities that receive Indian Health Service Infrastructure Investment and Jobs Act funding for Alaska Native and American Indian homes.
- Remove barriers within the Village Safe Water Program to ensure access to funding to support fully serving communities in rural Alaska.



## Introduction

Until recently, the greatest barrier to addressing sanitation facilities construction in rural Alaska was capital funding. However, the Infrastructure Investment and Jobs Act (IIJA) provided \$3.5 billion to the Indian Health Service (IHS) for sanitation facilities construction for Alaska Native and American Indians. Of the first time service projects funded this year, over 96% of the project cost was covered with this IHS funding. There is still a small component related to community buildings that are ineligible for IHS IIJA grants. Most of this can be covered by the Alaska Village Safe Water (VSW) Capital Improvement Project (CIP) Program, which receives three quarters of its funding from federal sources: the Environmental Protection Agency (EPA) Alaska Native Village Grant (ANVG) and United States Department of Agriculture's Rural Development (USDA) Rural Alaska Village Grant (RAVG). However, these federal programs require a 25% State of Alaska (SOA) match, meaning 1% of the total project cost to provide first time water and sewer service (25% of 4% considered "ineligible" for IHS IIJA) would come from the SOA.

While not specifically required by Congress, the SOA has several requirements that must be met to be eligible for funding, including an approved Sustainability Plan<sup>1</sup> and a minimum Operations & Maintenance (O&M) Best Practices score. These were developed to assess systems' current technical capacity and predict long-term sustainability to prioritize funding for projects, but they have unfortunately become barriers to access instead. Although this is a worthy goal, neither the Sustainability Plan nor O&M Best Practices accurately assess current technical capacity of systems or predict sustainability.

Planning and construction of new systems have already begun with the IHS funding. Without VSW funding, these projects will be missing the 4% contributions needed to connect public facilities, such as schools, community centers, state facilities, and health clinics, to running water and sanitation. Connecting these public facilities is the greatest way to ensure the systems' sustainability because they pay a commercial water and sewer service rate that helps the utility cover expenses. Despite years of work and requests to waive these requirements for new systems in unserved and underserved communities so that VSW funding can support first time service projects, these requirements persist for first time service.

## Background

While virtually all households in the U.S. have basic water and sewer services, approximately 20 percent of Alaska Native homes in rural Alaska are not served. Access to water and sewer services plays a prominent role in individual and public health.

Babies in communities without adequate sanitation are eleven (11) times more likely to be hospitalized for respiratory infections and five (5) times more likely to be hospitalized for skin

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<sup>1</sup> Alaska Department of Environmental Conservation. "Village Safe Water Program Capital Improvement Project Construction Project Application". Accessed on May 10, 2023. (<https://dec.alaska.gov/media/2p1btudg/fillable-cip-construction-application-2023.pdf>) [see page 6 of 7 of the application]



infections<sup>2</sup>. In villages with very limited water service, one in three infants requires hospitalization each year for lower respiratory tract infections.

Over the last 30 years, the federal government and State of Alaska (SOA) have made significant progress in bringing rural communities essential water and sewer services. Besides the IHS, the EPA's ANVG Program and the USDA RAVG Program are the two primary federal sources of first service water and sanitation funding in Alaska.

Both ANV and RAVG require a 25 percent State of Alaska funding match. The funding match is provided through the Alaska Department of Environmental Conservation's Village Safe Water Program, which also has a project management component that assists communities with project planning, design, and construction. To be eligible for first service construction funding, VSW requires an approved Sustainability Plan<sup>3</sup> and a minimum Operations & Maintenance (O&M) Best Practices score of 60.<sup>4</sup>

### Challenge

VSW maintains that their sustainability plan and O&M Best Practices requirements are necessary to meet Section 1420(a) of the Safe Drinking Water Act (SDWA) stating new systems must *"ensure that all new community water systems and nontransient, noncommunity water systems commencing operations after October 1, 1999 demonstrate technical, managerial, and financial capacity with respect to each national primary drinking water regulation in effect, or likely to be in effect, on the date of commencement of operations."* However, this statutory requirement does not prescribe how this is determined, and provides exemptions and variances. In addition, all of the unserved and underserved communities already operate existing water systems and will not be seeking approval of a new community water system. They will be seeking to install water distribution systems for their existing community water systems, which are not considered "new community water systems".

More broadly, VSW maintains that the goals of the requirements are to ensure the long-term viability of the system. Although this is a worthy goal, neither the Sustainability Plan nor O&M Best Practices accurately assess current technical capacity of systems or predict long-term sustainability of system. Best Practices scores in un-piped communities are a poor predictor of ability to operate a system, and the affordability matrix associated with the sustainability plan is an unrealistic measure of a household's willingness to pay for a service that is essential

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<sup>2</sup> Hennessy, T.W., et al. "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*. 92008 Nov; 98(11): 2072-2078. (<https://ajph.aphapublications.org/doi/10.2105/AJPH.2007.115618>)

<sup>3</sup> Alaska Department of Environmental Conservation. "Village Safe Water Program Capital Improvement Project Construction Project Application". Accessed on May 10, 2023. (<https://dec.alaska.gov/media/2p1btudg/fillable-cip-construction-application-2023.pdf>) [see page 6 of 7 of the application]

<sup>4</sup> DEC has lowered the Best Practices score to requirement to 35 for design work only for first time service; it remains 60 to access construction funding for first time service. Underserved and unserved communities can apply for and access construction funding if they have a Best Practices score of 35, but this is only to address core-facility issues for their existing level of service, and is not applicable for projects to upgrade their level of service to piped water systems.



to the health and wellbeing of their family. The State’s report on “A Framework to Assess the Affordability of Residential Water and Sewer Rates in Rural Alaska” states that “ADEC uses this framework in combination with other criteria to determine eligibility and funding levels for proposed sanitation infrastructure improvement funding for rural communities...”<sup>5</sup> Although the report acknowledges that project approval is not based solely on this framework, these requirements only serve to perpetuate longstanding health inequities and keep communities on unsustainable honey bucket and small closed haul systems, and should be eliminated.

These VSW requirements also act as a disincentive for communities to apply for funding when they know they have scores below the requirements. The fact that the State’s CIP eligibility page and the construction application both state that the applicant must have a qualifying Best Practices score prevents communities from even requesting the funding they may need. When communities do not apply, it completely eliminates any and all consideration of health impact, deficiency level, or community need from the scoring for CIP projects since those projects do not even make it to the table, and it leaves local capacity as the one and only criteria because projects in communities without the required Best Practices score are not even represented in the applications that are scored. This is a violation of the spirit of the VSW funding, the ANVG funding, and the RAVG funding, which are intended to fund the most important projects with the greatest health impact that address the most dire deficiency levels and community needs.<sup>6</sup>

Below is a more detailed analysis of these two requirements.

### **O&M Best Practices**

O&M Best Practices was developed to replace an even less effective system, the RUBA essential indicators, that required 27 “essential indicators” be met before a community could spend its construction funding. When it was proposed by the SOA in 2014, it was proposed as a useful tool to identify where technical assistance program efforts could be most effective, which is in line with the Safe Drinking Water Act’s intent. After replacing the RUBA essential indicators, it became clear that that was not how the SOA was using this tool.

In 2017 the Tribal Environmental Health Directors formally passed a resolution opposing its use as a funding eligibility criteria. Similar measures were passed by the Alaska Native Tribal Health Consortium Sanitation Facilities Advisory Committee, and ANTHC Board of Directors in 2018 and the Alaska Native Health Board in 2020. Multiple letters about these concerns have been written to the State, and still these funding eligibility requirements persist, locking the projects that address the most dire sanitation conditions out of the running for CIP funding.

Unserved communities and underserved systems are widely considered financially infeasible to operate without a subsidy. These systems have the same core facilities to maintain,

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<sup>5</sup> Alaska Department of Environmental Conservation. “A Framework to Assess the Affordability of Residential Water and Sewer Rates in Rural Alaska.” June 2020, page 7.

(<https://dec.alaska.gov/media/21759/alaska-w-and-s-affordability-model-report.pdf>)

<sup>6</sup> Alaska Department of Environmental Conservation. “Village Safe Water Program Capital Improvement Project Construction Project Application”. Accessed on May 10, 2023. (<https://dec.alaska.gov/media/2p1btudg/fillable-cip-construction-application-2023.pdf>) [see page 7 of 7 of the application for the scoring criteria]



operator certification requirements, and regulatory sampling requirements as a piped system, but without the revenue that piped customers provide. In small un-piped systems the only source of revenue is quarters from a washing machine or filling buckets at watering points, making it impossible to break even. However, the unserved and underserved communities continue to find ways to provide the washeteria and watering point services by working together and providing local subsidies to provide the services that matter to the community members.

Small systems also produce less water, but the treatment complexity on which the operator certification eligibility is based is often based on raw water quality and system demand. To qualify for a level I operator certification, an operator must have 1,950 hours of on the job experience, and 5,850 hours to be certified as a level II operator. Small unserved systems, not producing the volume seen in piped systems may only require an operator to work a couple of hours each week making it nearly impossible to accumulate the required hours to qualify for the required certification.

As you bring on paying customers from a piped utility, you build the economy of scale needed to maximize your best practice score. You can pay operators to work 40 hours a week, a bookkeeper to manage books and turn in the required reports to the Rural Utility Business Advisory Program (RUBA), and regulatory samples, all raising your best practice score.

It is no surprise that there is a direct correlation between the percentage of homes served with pipes and a community's best practice score. Unserved communities average approximately 40 points, closed haul communities average 45 points, and piped communities average 62 points. These averages and other data analyses show that it is the lack of a piped system itself that is often the cause of a low Best Practice score.

This creates a CATCH-22. Piped systems are essential if you want the economy of scale needed to have a high best practice score, but systems need a high best practice score to qualify for funding.

### **Sustainability Requirements**

First time piped service projects requesting construction funding for a project to install piped water and or sewer must have a completed Sustainability Plan approved by a Multi-Agency Review Committee<sup>7</sup>. A key component of this plan is the Affordability Matrix, which sets the maximum affordable residential rates based on the calculated affordability for the lowest quintile of the community.

If this requirement were in place when the existing piped systems were constructed, not a single piped water system in the Yukon-Kuskokwim Delta would have been constructed, including Bethel, and yet none of these systems have suffered from catastrophic failure. Also, it is unfair to hold first service projects to this requirement while not holding repair and

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<sup>7</sup> Alaska Department of Environmental Conservation. "Village Safe Water Program Capital Improvement Project Construction Project Application". Accessed on May 10, 2023. (<https://dec.alaska.gov/media/2p1btudg/fillable-cip-construction-application-2023.pdf>) [see page 6 of 7 of the application]





replacement projects in served communities to the same requirement. This only further exacerbates the inequities that the unserved and underserved communities face.

The framework relies on US Census data and socio-economic indicators to assess the economic burden of water/sewer bills on families. The results of that analysis are not properly contextualized at the community level, making a series of assumptions and based on national-level measures which do not adequately characterize rural Alaska.<sup>8</sup> For example, many villages in rural Alaska come from a mix of economic systems composed of subsistence and cash economies. Since many households engage in subsistence activities, their need for cash to purchase food items is likely lower than households in other parts of the US. Many of these communities also qualify for other subsidies such as the heating assistance program which is not captured in the Census data and other metrics used to develop the framework. But they do lower the cash burden for families each month, and make more money available for water/sewer.

Additionally, the metric does not capture willingness to pay, only a measure of economic burden. Published peer reviewed research from around the globe shows communities are willing to pay for services that can improve their health and standard of living. This research is supported with real life examples in Rural Alaska as well. Data from the Alaska Native Tribal Health Consortium's (ANTHC) Alaska Rural Utility Cooperative evaluated collection rates from the 29 systems they operate and found that villages in the high burden category of the State's Affordability Matrix had collection rates at 96%. Collection rates were most impacted by a system's ability to shut off customers for lack of payment, not the affordability category these systems fall into.

Most obviously though, the maximum allowable rates proposed are just not logical. For example, looking at the entire Yukon-Kuskokwim (YK) Delta, none of the existing piped water and sewer systems would have been funded if this matrix was a requirement when they received construction funding.

Residents in Eek are reportedly paying \$125 per month, but under the State's system, this project would not have been funded since the user fees are above \$45 per month. Kipnuk recently had a piped project denied because their monthly fees were estimated to be \$162 per month by the Preliminary Engineering Report, but the State's Affordability Threshold was \$39 per month. St. Mary's for example reported a monthly user fee of \$111, but the maximum allowable by the State is \$53 per month.

Overall, the average residential rate for piped water in the YK Delta is \$110 per month, but the average highest allow rates is \$49. Rates in these communities are double and sometimes triple what is considered that maximum amount allowable by the State.

Although not a single one of the existing piped water and sewer systems in the YK Delta would have been funded if this matrix were a requirement when those systems were built, these systems, including Bethel, have been successfully operating for many years, most with collection rates over 80%.

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<sup>8</sup> As noted in the Framework's own Limitations chapter.



## Conclusion

We are not claiming that sustainability is not important. Regional tribal health organizations, ANTHC, VSW and RUBA work hard with communities to build technical and managerial capacity and assist with utility operations and ensure that the systems are well-designed for sustainable operation. These are also important components of the SDWA. However, the proven health benefits of running water and safe drinking water are the main objective of the SDWA and the funding the EPA provides to assist with compliance with the SDWA. By limiting the use of the funding to communities that demonstrate capacity, the State of Alaska has made capacity the one and only aspect of the SDWA that matters. Although capacity is one important component of the SDWA, it is not meant to be the only aspect that is important. Demonstration of capacity is intended to identify which communities require the State's assistance with achieving and maintaining the capacity to comply with the primary drinking water regulations. The State's current implementation of capacity measurement is disregarding this aspect of the SDWA.

Real world data does not support the State's claims that the Best Practices or the Sustainability Plan requirements predict a system's technical capacity or their long-term sustainability of a utility. These barriers are in fact keeping our communities from being able to access or maintain a safe drinking water system. Piped infrastructure itself is the most important tool communities need to improve health and maintain systems, and are essential if we want to meet the language of the SDWA, and ensure systems have technical, managerial, and financial capacity to operate systems.

Piped water prevents disease and unnecessary suffering, and saves money and lives.<sup>9</sup> Health disparities in rural Alaska are the unintended consequences of a failure in policy associated with the State's Sustainability Plan and Best Practices requirements. These policies systematically disenfranchise poor, predominately Alaska Native Communities. With IJJA funding we are finally in a position build these long over-due systems and we should utilize available resources to close the funding gap for projects to ensure access to water and sanitation for entire communities.

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<sup>9</sup> Fuente, D., et al. "Health-related economic benefits of universal access to piped water in Arctic communities: Estimates for the Yukon-Kuskokwim Delta region of Alaska". *International Journal of Hygiene and Environmental Health*, 240 (2022). <https://doi.org/10.1016/j.ijheh.2021.113915>