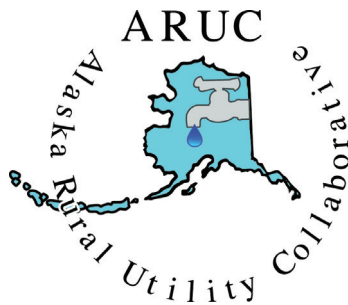


ALASKA RURAL UTILITY COLLABORATIVE

# 2019-2020 REPORT ON ACTIVITIES



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Aerial shot of Savoonga

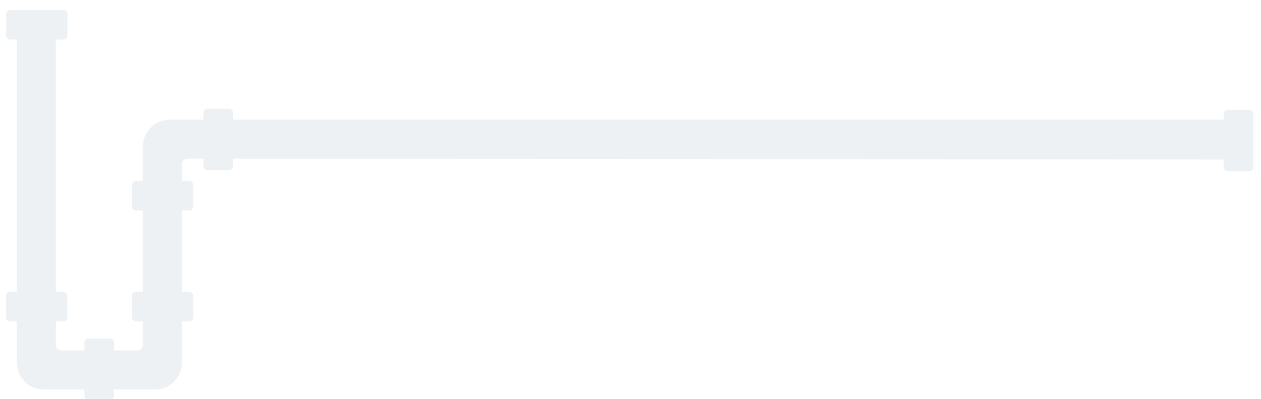
# ABOUT ARUC

The Alaska Rural Utility Collaborative (ARUC) is an Alaska Native Tribal Health Consortium (ANTHC) program created to assist and empower its member communities to manage, operate and maintain water and sewer systems in rural Alaska. Each member community's system is operated as a stand-alone, non-profit business; money from local customers, generated from user fees and local community and regional support, must be enough to pay the system's direct expenses and build a reserve account. ARUC services include helping set water and sewer rates in each community, billing local water and sewer customers, providing guidance to local water plant operators and more.

Through active management, operations and maintenance support, ARUC continues to pursue its goals of maximizing the public health benefits of sanitation facilities and building local community capabilities. Through reliable sanitation, ARUC focuses on preventive health services.

Communities in the ARUC program protect public health and residents' quality of life by:

- Ensuring qualified staff operate and maintain facilities to provide high-quality drinking water and safe disposal of sewage.
- Providing emergency response.
- Extending the useful life of water and sanitation system through preventive maintenance, thereby saving millions of federal and state dollars in replacement costs.
- Hiring and training water plant operators and backup staff in each community and offering good wages and benefits.
- Setting rates with community council agreements: Each community's rates are set to be self-supporting and rates vary per community.
- Working with ANTHC engineers, operations and maintenance specialists, utility managers and grant specialists to support the utility at no additional cost to customers.



# ARUC ADVISORY COMMITTEE



ARUC Advisory Committee Meeting

## Many Thanks

The ARUC Advisory Committee serves a valuable role as the liaison between ARUC and participating communities. Each community selects a member to be on the ARUC Advisory Committee. The committee meets four times a year, once in person and three times via teleconference, to represent their communities and provide direction on water and sewer operations and rates. The committee met in person in Anchorage in 2019, but due to the COVID-19 pandemic, the 2020 in-person meeting was canceled.

## 2019 Meeting

The ARUC Advisory Committee held its annual meeting in Anchorage on April 25-26, 2019, to discuss business and financial updates, system operations, and to meet with ANTHC project management and regional manager teams. Seventeen of the 26 ARUC member communities were in attendance.

Since ARUC's inception in 2008, each community has made significant efforts to build reserve accounts to fund replacement of critical spare parts for community utility systems and to make emergency repairs. To date, 96 percent of member communities have fully funded reserve accounts.

At the 2019 meeting, the committee discussed funding related to preventive maintenance plans (PMPs), operations and maintenance (O&M) manuals, remote monitoring systems, and community-funded capital projects.

- PMPs provide operators with a daily, weekly, monthly, bi-annual and annual list of tasks to help maintain various components throughout their systems. O&M manuals inform and assist operators with all systems related to their water and wastewater systems.
- Remote monitoring allows operators, community leadership, remote maintenance workers and the ARUC operations team to observe numerous variables that affect water plant operations, such as changes in temperatures, water levels, and water speed. These systems have proven to be invaluable in protecting community water utilities from major disasters and costly repairs.
- Community-funded projects are water and wastewater projects either partially or completely funded by a community's reserve funds. Locally funded projects provide immediate and innovative solutions to challenges within the system and allow for the operators and local leadership to review, prioritize, and decide what is best for their communities water and wastewater systems.



# COMMUNITY MANAGEMENT ACCOMPLISHMENTS

ARUC partners with member communities to use a strength-in-numbers approach and assists with the management, operations and maintenance of each community's water and wastewater system so communities don't have to do it alone. Local community councils participate in utility rate decisions, discussions of system financial and infrastructure challenges, billing processes and collections, and develop roles for ARUC staff, operators, and community representatives.

ARUC engages with community leadership to understand challenges and make decisions together to ensure long-term system sustainability and provide continuous clean water and sanitation. We are honored to share a few of the many successful management initiatives by community leadership to improve their community's finances, management and operations.

## **ARUC reconnects customers and waives late payment fees during pandemic**

On March 24, 2020, a quorum of ARUC communities voted in favor of reconnecting customers who had been previously disconnected from water and sewer services due to nonpayment, waiving late payment penalties and pausing the disconnections of services. As handwashing and household cleaning are among the most important methods of preventing the spread of infectious disease, ARUC Advisory Committee members saw the importance of helping families protect themselves from COVID-19.

Local water plant operators reconnected homes in accordance with COVID-19 guidelines. The dedication and hard work of community and Tribal leadership and staff made this temporary policy change reality and helped protect the health and well-being of ARUC community residents during a challenging time.



Clarence Wood-Griepentrog, Kevin Black and Bruce Nelson boosting morale in Ambler during an emergency.

# OTHER NEWS

## Operator Recognition



Scott Kingeekuk (left) accepting his Operator of the Year award from Chris Cox.

### ARUC Operator Wins 2019 Operator of the Year

The Alaska Rural Water Association (ARWA) presented its 2019 awards during the 21st Annual Training Conference held from October 21-24, 2019 at the Sheraton Hotel and Spa in downtown Anchorage. These awards are presented to member systems and operators that have done an outstanding job in the water and wastewater field. The recipient of the ARWA Wastewater Operator of the Year award was Scott Kingeekuk from Savoonga.

The ARWA Wastewater Operator of the Year award recognizes an operator's outstanding dedication to wastewater operations in their community. ARWA stated: "Scott is certified as Level 1 in Wastewater Collection and Wastewater Stabilization Pond. He provides good supervision of his staff and regularly maintains the two-lagoon wastewater system, pumped lagoons, submits required samples, and assisted in conducting a sludge level evaluation of the lagoons."

ARUC local operators and community members attending the ARWA training, included:

- Charlotte Nayagak, Chevak
- John Atchak, Chevak
- Larry Small, Goodnews Bay
- Roy Roberts, Goodnews Bay
- Bernard Edwards, Holy Cross
- David Walker, Holy Cross
- Wilbur Tonuchuk, Kotlik
- Paul Evan Jr., Lower Kalskag
- John Jay Tretikoff, Newhalen
- Blunka Blunka, New Stuyahok
- Wassillie Gust Jr., New Stuyahok
- Paul Lamont, Pitkas Point
- Charlie Pleasant, Quinhagak
- Carlie George, Scammon Bay
- Noel Uttereyuk, Scammon Bay

Additionally at the 2019 ARWA conference, Lower Kalskag and Holy Cross tied for third place for best-tasting water in the state. All water submittals are scored based on water clarity, odor and taste. Congratulations to Lower Kalskag operators Zackar Littlefish and Paul Evan Jr., and Holy Cross operators Dave Walker and Bernard Edwards.

# OTHER NEWS

## CARES Act Funding Application

In the spring and summer of 2020, many Alaska communities received funding from the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) to assist communities in dealing with the COVID-19 public health emergency. With that funding, several ARUC communities provided individual customers funding grants towards their water and sewer payments from the summer until the end of the year. These individual grants for water and/or sewer services ensured that all residences had the necessary water services for proper sanitation during the pandemic. Leaders in several ARUC communities recognized the expenditure of CARES funds for monthly services was one of the best ways to ensure health hygiene and mitigate the risks of the virus for families.

Several ARUC communities also applied CARES Act funds to other projects, including:

- **Deering:** Purchased plumbing supplies, arctic boxes, water heaters and insulation to ensure sanitation and water inside community homes. The total, including labor, was around \$24,000.
- **Kobuk:** Purchased plumbing supplies, arctic boxes, water heaters and insulation for community homes, totaling around \$67,000.
- **Kotlik:** Purchased assistance with payroll fees, labor, supplies, chemicals, ordering fees and freight to ensure sanitation of water services inside homes. The total was around \$83,000.
- **Newhalen:** Authorized the purchase of plumbing supplies, pumps and hoses, to ensure sanitation and water inside community homes. This expenditure totaled around \$1,000.
- **New Stuyahok:** Purchased plumbing supplies, safety supplies, a generator, tools, pour foam, freight and insulation to ensure sanitation and water for community homes. The final total was around \$10,000.
- **Noorvik:** Purchased labor, parts, freight and fuel used during spring reconnection efforts to ensure sanitation and water was provided to community homes. Total expenditures were around \$10,000.
- **Savoonga:** Purchased plumbing supplies, safety supplies and air vacuum kits to ensure community households had water and sanitation services. The total was around \$19,000.
- **Shungnak:** Helped complete a community-funded project to replace a heat exchanger by paying for supplies, freight, equipment and labor, totaling around \$105,000.
- **Upper Kalskag:** Purchased equipment and freight to correct a discharge issue in the wastewater lagoon. The remainder of the labor, payroll fees and other costs were covered with state grant funding. The total for the purchases was around \$28,000.

# ENGINEERING ACCOMPLISHMENTS

Engineering projects in ARUC communities focus on three major goals:

- Reducing energy, fuel and operational costs.
- Increasing the number of customers through service connection construction.
- Providing operator guidance and assistance for issues that may arise during normal operation.

In 2019-2020, the ARUC engineering team and local operators worked to achieve these goals through related projects. We partner with ARUC member communities to secure additional grant funding for repairs or replacement of existing system challenges, ensuring continuous and safe service is provided to our customers.

## 2019 Community-funded Projects

Community-funded projects are water and wastewater projects partially or completely funded by a community's reserve funds. Big or small, every project has a positive impact on a community. Not only do these locally funded projects provide immediate and innovative solutions to challenges within the system, they also allow for the operators and local leadership to review, prioritize and decide what is best for their community water and wastewater systems.

Member community-funded project highlights in 2019:



**New Stuyahok** used reserve funding to install seven corporation, or corp, stops to water service lines. Corp stops are an invaluable tool for local operators and community collection efforts. If a customer's line is frozen or backed up, corp stops allow the operator to isolate that particular line to the main before it becomes a system-wide issue. In addition, if a customer is delinquent on their utility payments, it allows operators to discontinue service until payment is received.



**Chevak** used reserve funding to support a recovered heat project. Heat recovery is the process of capturing excess heat from utility operations that otherwise evaporates and transferring it to places that need heat, which helps decrease heating fuel usage, lowers fuel costs and thus leads to lower monthly water and wastewater rates for utility customers. Prior to the project, Chevak typically used about 15,000 gallons of heating fuel per year, but with the implementation of a recovered heat system, it has reduced its fuel usage to about 2,500 gallons per year.

# 2019 Engineering Projects



## Solar Panels

In 2019, **Sleetmute** and **Russian Mission** operators teamed with ARUC engineers to install solar panels on their water treatment plant buildings. Sleetmute installed them on the south-facing roof and they are estimated to produce 10,500 kWh of electricity annually, saving the community up to \$7,000 in electricity costs per year. Russian Mission has a 6,500 kWh solar array on the south-facing side of the roof on their water treatment plant that saves the community up to \$4,000. Solar panels collect sunlight and convert it into electrical energy that can be used to power equipment and lights in the water treatment plant.



## New Service Line Installation

In 2019, 11 household customers received new water and/or wastewater flexible service lines in four ARUC member communities; two in **Chevak**, two in **Noorvik**, four in **Savoonga**, and three in **Toksook Bay**. As a result, 11 more families have access to safe water and sanitation services and four communities have more customers to keep the overall rates low for everyone.



Service lines at St. Michael

# 2019 Engineering Projects



## Remote Monitoring

Remote monitoring systems allows operators, city/Tribal officials, regional remote maintenance workers and our ARUC team in Anchorage, to observe variables that affect water plant operations, such as drops in temperatures, water levels, water speed and others, and take action when needed to protect water systems.

Below are a few examples when remote monitoring technology, along with local operators, helped prevent system-wide outages:

In **New Stuyahok**, remote monitoring twice alerted local operators and city administration of water plant issues before the situations became widespread. In the first instance, operators and the city were alerted to a water tank's steadily declining water level. They discovered a well pump was frozen. Operators immediately started working on the pump and within a week were able to get the pump operational. Thankfully, this issue was discovered before the circumstances became an emergency. Without remote monitoring, water levels could have reached critically low levels, creating a shortage of water for the entire community.

In the second instance, Bristol Bay Area Health Corporation noticed New Stuyahok's water treatment plant temperature was decreasing. Through ARUC, they notified local operators. The operators went out to the plant immediately and discovered there was no heat in the building due to the lack of fuel in the fuel tank. Once the fuel tank was refilled, the issue was corrected and heat in the building was restored, avoiding a potential system freeze-up or other utility plant damage.

In **Kotlik**, remote monitoring alerted local operators during a weekend that the temperature of the water returning to the plant in the main lines was low. Thanks to the alert, local operators took quick action to increase the water temperatures to the entire community utility loop and inspected each individual home line to make sure they were operational. When inoperative home lines were found, the operators, during subzero temperatures and blistering winds, thawed lines to restore water services. If it weren't for local operators being ready, coupled with the alert system provided by remote monitoring, Kotlik's entire system could have frozen, leaving the community without piped, filtered and sanitized water during the winter.

# 2019 Engineering Projects



## Flexible Service Connection/Arctic Box Replacements Efforts

Failing arctic boxes were removed in three communities and replaced with flexible connection installations at nine homes (four in **Kobuk**, three in **Kiana** and two in **Ambler**). Arctic boxes are wooden covers that protect and insulate a home's water and wastewater service line connections. However, thawing ground and permafrost can cause homes to shift, damaging the boxes and their insulation and allowing lines to freeze.

The new flexible connections contain upgraded materials, including aluminum and high-grade, water-resistant insulation that is much better suited for arctic climates. The new connections can flex with the home, preventing costly freeze-ups and service outages.



## Waste Heat Recovery Upgrade

**Kiana's** waste heat recovery system was recently upgraded. The system uses excess heat from the community's power plant to heat the water treatment plant. Work included repairing the line that transmits heated glycol from the power plant to the water plant, as well as replacing the water plant's heat exchanger, pumps and controls. Kiana's waste heat system had been inoperative for years due in part to leaks in the glycol line, but with the system up and running again, the community estimates it will save 8,500 gallons of fuel a year, or \$780 a month.



Sunset view at Saint Michael

## 2020 Engineering Projects



### Service Home Connection

A homeowner in **Golovin** received a newly installed wastewater service line in October 2020. The project was fully funded by the Indian Health Service (IHS) for \$120,000. This project means that another family in the community has access to wastewater service, which is important for their health and provides the utility system with another paying customer to help keep rates low. ARUC engineers and utility specialists, along with the local water plant operator helped complete this project.



### Solar Array Installation

In February 2020, **Pitkas Point** operators teamed with ARUC engineers and a contractor to install a 10kW solar array consisting of 36 panels to help offset electrical costs in the community. These solar panels are estimated to save the community roughly \$5,000 a year. A U.S. Department of Agriculture (USDA) High Energy Cost Grant valued at \$75,000 provided funding for this project.



New Stuyahok sewage lagoon

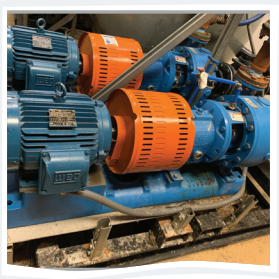
## 2020 Engineering Projects



### Flex Connections and Well Pump Electrical System

Failing arctic boxes were removed from three homes in **Savoonga** and replaced with flexible connections for water and sewer. Arctic boxes often pull away from homes and expose water lines to cold air, causing service line freeze-ups. Flexible connections provide homeowners with reliable water and wastewater service by flexing as homes shift over time. This reliability helps reduce maintenance costs and contributes to overall cost savings for the community. ARUC engineers worked with local water plant operators to complete this project in September 2020. The Denali Commission funded this project for \$114,000.

In addition, the City of Savoonga, along with the State of Alaska Infrastructure Protection Funding (IPF) program provided \$143,000 to replace and improve Savoonga's well pump electrical system. This project included restoring an electrical service line to the well house, and installing a new well pump and other major equipment.. The previous system used a long electrical transmission line that was failing, inefficient and required annual maintenance. This project was completed by ARUC engineers, operation specialists, and local water plant operators in August 2020.



### Discharge Replumb

The City of **Kotlik**, along with the State of Alaska's IPF program, funded a \$125,000 replacement and improvement of the discharge plumbing at the community's vacuum wastewater tank. The previous design caused the discharge pumps to run dry and/or clog frequently, causing outages to wastewater service and requiring increased maintenance time and costs. The new discharge piping, which is made of high-density polyethylene, has prevented the dry-run and clogging issues, requires less maintenance and allows for easier modifications in the future. The reduction in maintenance along with the increase in pumping efficiency will save the community a significant amount of money. ARUC engineers, utility specialists and local water plant operators completed the project in September 2020.

# QUYANA/TAIKUU TO OUR PARTNERS

Alaska Energy Authority  
Alaska Rural Water Association  
Alaska Vocational Technical Center  
Bristol Bay Area Health Corporation  
Bristol Bay Borough  
Chignik Lake Traditional Village Council  
City of Ambler  
City of Chevak  
City of Deering  
City of Golovin  
City of Holy Cross  
City of Kiana  
City of Kobuk  
City of Kotlik  
City of Lower Kalskag  
City of New Stuyahok  
City of Newhalen  
City of Noorvik  
City of Quinhagak  
City of Russian Mission  
City of Saint Michael

City of Savoonga  
City of Scammon Bay  
City of Shungnak  
City of Toksook Bay  
City of Upper Kalskag  
Department of Environmental Conservation  
Indian Health Service  
Lake & Peninsula Borough  
Maniilaq Association  
NANA Regional Corporation  
National Tribal Water Center  
Native Village of South Naknek  
Native Village of Tyonek  
Northwest Arctic Borough  
Norton Sound Health Corporation  
Pitkas Point Village Council  
Rural Community Assistance Corporation  
Sleetmute Traditional Council  
United States Department of Agriculture  
Village of Goodnews Bay  
Yukon-Kuskokwim Health Corporation



Chignik Lake Water Storage Tank

# CONTACT ARUC

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