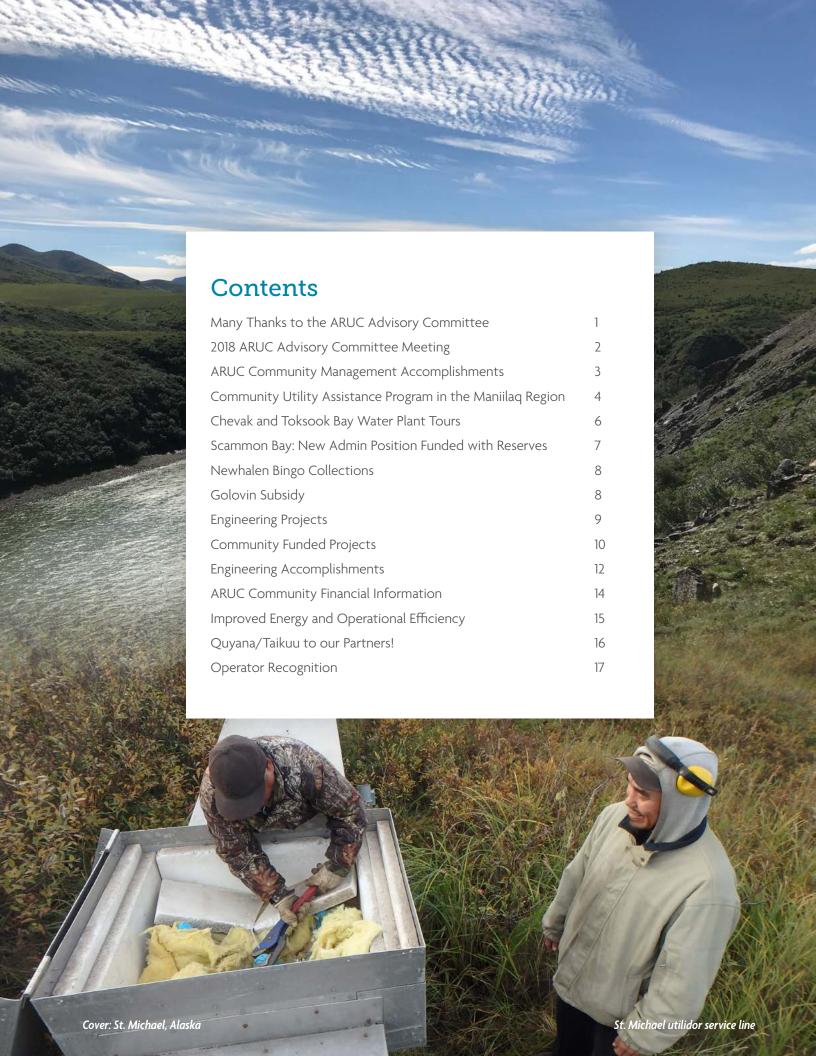
2018 ARUC Report on Activities

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM











Many Thanks to the ARUC Advisory Committee

The Alaska Rural Utility Collaborative 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 ARUC Advisory 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.



2018 Advisory Committee Meeting attendees:

Thomas Sinka, Goosma Nickoli, Alvin Pedersen, Henry Anelon, Dale Stotts, Wanda Custer, Marian King, Johnny Lind, David Walker, Carlie George, Larson Hunter, Joe Iya, Cecilia Aloysius, Jerilyn Kelly, Bobbi Andrews, Carlie Sallison, John Gust, Agnes Moses, Sheila Minock. Priscilla Moses

2018 ARUC Advisory Committee Meeting

The ARUC Advisory Committee met in Anchorage April 12-13 and discussed financial updates, system operations, reviewed the uniform operating ordinance, and met with their assigned project management and regional manager teams.

During the meeting, the advisory committee passed two ARUC program-wide revisions modifying the ARUC operating ordinance and the local operator pay scale.

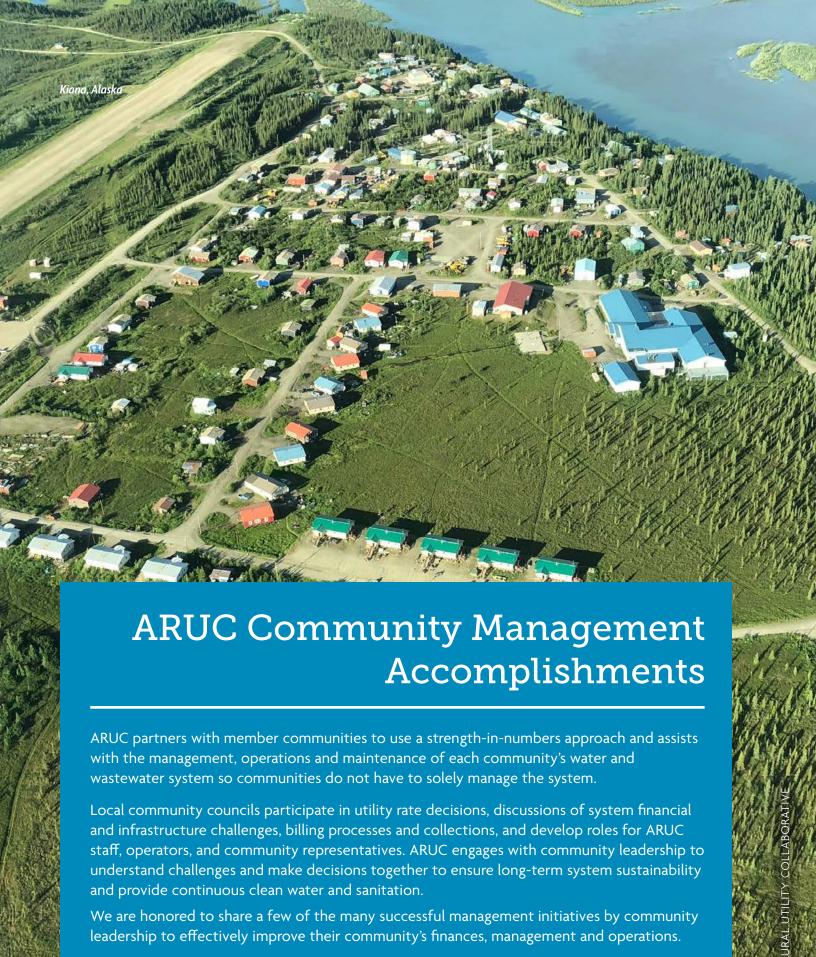
ARUC's operating ordinance was revised to more clearly define the customer and utility owner's water service line responsibilities. Arctic boxes (pictured at right), which contain the service line connection to the home, are often found to be the area most prone to freezing and disrupting service during the cold winter season. With that in mind, the committee revised the ordinance to note that the utility owner is fully responsible for water line arctic boxes, meaning local operators will ensure arctic boxes are maintained and contain sufficient insulation to ensure continuous service throughout the winter.



Next, the advisory committee discussed and voted to update the local water plant operator (WPO) pay scale to account for inflation, as well as explore the future implementation of additional pay by geographic location factor (GLF). GLF pay rates vary between 28-31 percent of base pay depending on each community's location and high costs of living throughout rural Alaska. Each community will now have the opportunity to utilize the new pay chart and decide on the inclusion of GLF pay within their respective community.

The advisory committee appreciates and recognizes the important role of operators and ensures they have access to adequate pay, training opportunities and increased technical support within the ARUC program. Water plant operators are essential to prolonging the life of each system and protecting public investment while providing a more affordable, clean, and reliable water and wastewater system. Thank you, operators!







Community Utility Assistance Program in the Maniilaq Region

The Northwest Arctic Borough (NAB) region has some of the harshest and coldest winters in the state and some of the highest water and wastewater rates. To address this, NAB approved the allocation of \$1.85 million from their general fund to create the Community Utility Assistance Program (CUAP).

The goals of the CUAP are to:

- Subsidize average residential water and sewer rates by two-thirds.
- Reduce the cost and number of emergencies through proper preventative maintenance performed by operators.
- Provide regional training and support for operators and administrators.
- Increase construction grant possibilities for communities through increasing best practice scores.

To achieve these goals, NAB provides the following:

- Funding for all water and wastewater operator labor wages and benefits.
- Purchasing each community's water and sewer system heating fuel.
- Payment for community monthly utility billing service.
- Training funds for operators and administrators.
- Funding to hire a regional utility coordinator to provide assistance to operators and help run the program.

Residential Water and Sewer Rates

Community	Pre-CUAP Rate	Percent Subsidized	CUAP Rate
Ambler	\$210 per month	66%	\$71.40 per month
Buckland	\$175 per month	66%	\$59.50 per month
Deering (Sewer only)	\$105 per month	66%	\$35.70 per month
Deering (Water only)	\$.25 per gallon	66%	\$.085 per gallon
Kiana	\$140 per month	66%	\$47.60 per month
Kivalina	\$.05 per gallon	City of Kivalina already subsidized rates	\$.05 per gallon
Kobuk	\$200 per month	66%	\$68.00 per month
Noatak	\$138 per month	Have not joined program	\$46.92 per month
Noorvik	\$157.50 per month	66%	\$53.55 per month
Shungnak	\$180 per month	66%	\$61.20 per month
Selawik	\$250 per month	66%	\$85.00 per month

Residents have expressed great appreciation for NAB's CUAP program. They now pay two-thirds less each month for their water and wastewater services, with collections increasing on average from 88 percent pre-CUAP to 179 percent post-CUAP. Collections over 100 percent means payments have been made on past due balances or prepayment of service.

"Thank you for facilitating the recent reduction in price. Please continue to provide service at a low cost." – Shungnak

"Keep up the good work for our villages." – Ambler "Continue good work to all staff." – Shungnak "Thank you for your service." – Deering

"I love my new water and sewer bill, don't change it or you can make it lower, thanks to the borough. Thank you." - Shungnak



Operators in CUAP training: John Roy Ramoth; Darrell Brown; Arthur Amaktoolik; Floyd Mills; John Williams; Shyler Johnson; George Goldy; Ricky Watson; John Gillam; Hank Henry; Gilbert Snell; Chris Dankmeyer

In addition to residential rate reductions, commercial and school accounts also received subsidized rates by 50 percent with thanks to the CUAP program.

Commercial Water and Sewer Rates

Community	Pre-CUAP Rate	Percent Subsidized	CUAP Rate
Ambler	\$480 per month	50%	\$240 per month
Buckland	\$525 per month	50%	\$262.50 per month
Deering	\$450 per month	50%	\$225 per month
Kiana	\$420 per month	50%	\$210 per month
Kivalina	\$0.30 per gallon	50%	\$.15 per gallon
Kobuk	\$400 per month	50%	\$200 per month
Noatak	\$1200 per month	Have not joined program	\$1200 per month
Noorvik	\$375 per month	50%	\$187.50 per month
Shungnak	\$540 per month	50%	\$270 per month
Selawik	\$800 per month	50%	\$400 per month

School Water and Sewer Rates

Community	Pre-CUAP Rate	Percent Subsidized	CUAP Rate
Ambler	\$4800 per month	50%	\$2400 per month
Buckland	\$7500 per month	50%	\$3750 per month
Deering	\$1800 per month	50%	\$900 per month
Kiana	\$4500 per month	50%	\$2250 per month
Kivalina	\$4000 per month	50%	\$2000 per month
Kobuk	\$3000 per month	50%	\$1500 per month
Noatak	\$7500 per month	Have not joined program	\$7500 per month
Noorvik	\$7500 per month	50%	\$3750 per month
Shungnak	\$3520 per month	50%	\$1760 per month
Selawik	\$15000 per month	50%	\$7500 per month







Toksook Bay water plant tour

Chevak and Toksook Bay Water Plant Tours

Chevak

In April 2018, the Kashunamiut School District invited ARUC staff and Chevak's water plant operators (WPO) to attend their job fair to discuss career journeys and tour the water treatment plant with the school's sixth graders. Students learned about the business and engineering career fields as well as how operators work hard every day to provide clean water to the community.

"I am very grateful and very appreciative that the ARUC staff, along with our local operators, were able to attend the Kashunamuit School District job fair in Chevak to provide information on our water and sewer operations. Especially for our children, being exposed to learning opportunities like engineering work and the business aspect of the system. Showing our children the important infrastructures and learning about them is very beneficial for them to know what it is that makes our water and sewer run to provide services to our community. Not only that, it gives some children something to remember when they start thinking of their careers. That they have options to go to college and come back to work as an engineer or operator," said Richard Tuluk, Chevak City Mayor.

Toksook Bay

In December 2018, Toksook Bay's Water Treatment Plant Operator, Richard Curtis, invited the ninth grade science class to their water treatment plant for a tour of the entire facility. The class learned about the water treatment process and the engineering involved, ensuring the water plant remains functional and operational throughout the year. They learned how heat tape helps to keep pipes thawed in the winter to prevent freeze-ups and where their water comes from. The class was attentive and asked several questions throughout their visit.

"I am proud to know that the science class had a tour of the water treatment plant to learn about the system and understand how water and sewer service is provided to our community. I hope additional school tours will encourage students to learn more in science, engineering and mathematics," said Sam Chanar, Toksook Bay City Mayor.

The ARUC program and each of its member communities feel it's important to engage and inspire the next generation to gain knowledge and learn the importance of education not only to find their passion and careers, but also to give back to their communities in any way they can. A big thank you to the communities of Chevak and Toksook Bay as well as the Kashunamiut and Lower Kuskokwim School Districts.





Scammon Bay: New Admin Position Funded with Reserves

In 2017, Scammon Bay recognized the need to add a new administrative position to assist operators with administrative efforts such as increasing customer collections, tracking service outages, discussing payment assistance options with customers, and other essential duties at the city office. Normally in a community, WPO responsibilities do not end at the maintenance of the water plant, but also include collections efforts and customer interaction. Adding an administrative position lets WPOs focus on the continual operations of the water plant, allowing them to be in the field more, repair leaks, complete summer projects, repair service lines and other critical system tasks.

In 2018, Jessica Hunter was hired by the city to fill the position, fully funded by Scammon Bay's water and wastewater reserve account.



"Jessica goes above and beyond her duties when it comes to water and sewer. She gives courtesy calls to customers who are falling behind on payments to avoid being shut off, assisting them with payments or payment plans. She takes local calls for customers that have issues with their services, from being frozen to leaks or clogs or any other issues that need our attention. She tracks problems on a board and is on top of the water and sewer operators to make sure they are fixing the problems. She also monitors and tracks operators work hours that are beyond scheduled hours or if they have taken leave and verifies that their submitted timesheets reflect what she's recorded. It is hard to imagine providing the level of service that we do in our

community without Jessica. I would attribute much of our success to efforts that she puts into it," said Larson Hunter, City of Scammon Bay Administrator.

Through Jessica's efforts, residential year-to-date collection rates increased from 101 percent in December of 2017 to 122 percent in December of 2018. Collections over 100 percent means customers are either paying past due balances or making utility service payments in advance.



Newhalen Bingo Collections

In April 2014, Newhalen passed a resolution implementing a \$20 fee prior to playing bingo if that person had an unpaid balance on their water bill. The amount paid would then be sent in to apply towards their water bill balance, sparking a financial turnaround of their system. As a result, Newhalen collections improved from a \$99,000 negative balance to a positive reserve account of over \$8,000 for system emergencies and needed parts replacement. While each community may require different solutions, Newhalen's example serves as an important and unique approach to collections that works for their community.

Community leadership throughout each of the 27 member communities continue to generate new and innovative collections ideas, and the ARUC advisory committee and staff are always happy to assist with the development and implementation of community-specific strategies to increase reserves and achieve a turnaround like Newhalen's.

Golovin Subsidy

Since 2012, the City of Golovin has received funding from Norton Sound Economic Development Corporation (NSEDC) and the Golovin City Council decides how it is distributed.

The City of Golovin has provided a subsidy to pay customer accounts for the past six years. The first subsidy totaled \$32,250. In 2018, this amount has grown to \$83,313, which helped lower monthly water and sewer rates from \$180 to \$110 during this period. This subsidy plays an integral part in more affordable water and sewer rates in the community of Golovin.



Engineering Projects

Engineering projects in ARUC communities focus on 3 major goals:

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

In 2018, the ARUC engineering team and local operators worked to achieve these goals through implementing projects such as community funded solar installation, remote monitoring, arctic box rehabilitation and service line connections. We continue to partner with ARUC member communities in order to secure additional grant funding for repair or replacement of existing challenges, ensuring continuous and safe service is provided to our customers.



Community Funded Projects

Community funded projects are water and sewer projects that are 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, but allow for the operators and local leadership to review, prioritize and decide what is best for their community when it comes to the water and wastewater system.



Noorvik

Noorvik funded utilidor replacements, helical pile installations and sewage discharge pump replacements with their community reserves. Noorvik has a large reserve of \$240,000 as well as a high collection rate for fiscal year 2017, which allowed them to fund the projects and also have a total net positive income for the year.

The utilidor project replaced 200 feet of utilidor insulation and supports. The old insulation was aging, absorbing water, and its functionality was waning. The utilidor plays an important role in making sure lines stay thawed, allowing easy access for WPOs to fix problems as they arise in the system before they become widespread.





Toksook Bay

In 2018, Toksook Bay installed a fence around the water plant and water storage tank to help better define the area the two buildings occupy. The fence serves as a boundary and stops people from entering property where heavy machinery operates, keeping both the system and the community safe.

Savoonga

Savoonga operates an above ground system. This means the pipes, lines and system all operate above ground. These systems are more susceptible to changes in permafrost due to climate change, causing the piping levels to shift. In the past to help with this issue, lumber supports were built to help stabilize the utilidor.

The soil in Savoonga is comprised of clay, high ground water and saturated soil, making it impractical to install piping in the ground. This also means lumber supports tend to deteriorate rather quickly. A new method called helical piles was proposed. Helical piles are a type of support where metal pipes are driven into the ground. However, a thick layer of volcanic rock was discovered when drilling to install the helical piles, eliminating the possibility of installation without huge expenses.

Because this project was community funded, this obstacle was discovered before fully investing in the project, saving the community tens of thousands of dollars.

ARUC engineers and Savoonga operators are currently testing new methods to help stabilize the utilidors in Savoonga. The flexibility of community funded capital projects allows for these tests without having to apply for a grant or take out a loan.





Engineering Accomplishments



Solar Power

In summer of 2018, the Newhalen operator teamed with ARUC engineers to install 20 solar panels on the roof of the water treatment plant, which went online fall of 2018. These solar panels are estimated to save the community approximately 10,269 kilowatts of electricity, or \$5,134 annually. Solar panels are a relatively recent technological adaptation, which collect and convert sunlight into energy to be used to power various electronics, including the water plant's lights and electric heating. Prior to the installation of solar power, Newhalen's water treatment plant used approximately 52,125 kWh annually.

"This will provide the City of Newhalen some savings and most importantly the solar power will provide our community with clean energy to power our water. The City of Newhalen is proud to be one of the first communities in the Lake Iliamna area to participate in clean energy," said Gladys Askoak, City Administrator of Newhalen.



Circulating Pumps

In order to avoid frozen pipes in the winter, circulating pumps keep water moving throughout the system, lowering the chance of water idling and freezing. This constant motion is an important aspect of keeping the system and individual water service lines flowing during Alaska's freezing winter temperatures.

Homes in Ambler, Kobuk, Saint Michael, Shungnak and Russian Mission received new circulation pumps. These new installations ensure homes endure the winter and provide a more efficient and cost-effective way to receive continuous water service.



Sewage Discharge Pumps

Sewage discharge pumps push sewage from the utility vacuum collection tank to the sewer treatment lagoon. It is important to remember that urine, fecal matter and toilet paper are the only flushable matter; anything else flushed down the toilet can clog an individual's pipe, along with the community's entire system.



ichael pump house boiler on/





First-time New Service Line Connections

Twelve customers received brand new water and/or sewer service lines in eight ARUC member communities; three in Toksook Bay, one in Shungnak, one in Scammon Bay, one in St. Michael, one in Noorvik, two in Chevak, one sewer-only line in Newhalen, and two sewer-only lines in Tyonek. As a result, 12 more families have access to safe water and sanitation services, and eight communities have more customers to keep the rates low.

Remote Monitoring

Newhalen, Deering, Kotlik, Kiana, Golovin and Scammon Bay installed or upgraded their remote monitoring systems in 2018. Remote monitoring is an invaluable tool in our communities and with these new installations, 17 ARUC communities now have remote monitoring. This allows operators, remote maintenance workers and our team in Anchorage to observe numerous variables that affect water plant operations such as changes in temperatures, water levels, water speed, etc.

For example, in Kiana, the force main pump did not shut off after an hour and a half, which caused a leak in the pipe. With the sensor data, we can see that the pressure increased, which ultimately caused the pipe to burst. We can also see where the operator shut the pump off to make repairs and then turned it back on. The pump again failed to shut off, which increased the pressure and caused a second pipe leak. In addition, we could tell that both pumps were failing because pump one was constantly running, as pump two was non-operational for months. With this information, we determined the force main pumps needed to be replaced and immediately ordered new pumps.

Flexible Service Connections and Arctic Box Replacement 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. Failing arctic boxes have notoriously been the weakest and most vulnerable part of the water system causing individual service line outages.

The new flexible connections have upgraded materials made of aluminum, high-grade insulation, and water resistant insulation that is better for arctic climates. Differential ground movement causes damage to arctic boxes, often misplacing and pulling them away from homes, and the flexible design helps mitigate those forces.

ARUC Community Financial Information

ARUC's partnership with the 27 member communities continued to make significant financial improvements throughout 2018. During fiscal year 2018, community revenue was about \$767,000 higher than expenses, meaning ARUC communities collected adequate revenue to pay their system's expenses and put money into their reserve accounts.

Of the 27 ARUC communities, 20 communities have fully funded cash reserves, five have positive but unmet cash reserves and two have no cash reserves.

Having a reserve account available for critical replacement parts, bulk fuel purchases, and emergencies, such as freezeups and overages in labor, is vital to keeping rates as low as possible for our customers. This means our communities are less reliant on outside funding sources to make needed system repairs. In FY18, communities began to leverage their cash reserves as match money to get system projects funded, or for community funded projects.

As always, ARUC and its 27 member communities together will continuously work towards improving finances, building reserve accounts and ensuring all users have access to safe water and sanitation services for the life of each system.

ARUC FY18 Operating Revenue and Expenses

Revenues collected from each community are used to pay that community's system expenses. Expenses include water plant operator labor, electricity, fuel, parts, supplies, regulatory testing, billing service fees and much more. ARUC management staff costs are funded by ANTHC, grants and federal funds.

ARUC FY 2018 Operating Costs

Community-funded projects ARUC management costs ARUC management costs Paid by community Aruc management costs Aruc management costs Aruc management costs Paid by community Community operating costs paid Aruc management costs Paid by community Said b

29%

4%

Total:

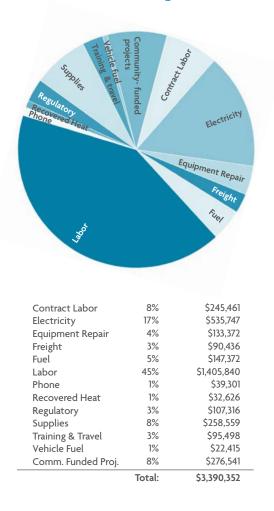
\$1,365,026

\$276,541

\$201,377

\$4,755,379

ARUC FY 2018 Expenses



ARUC management costs paid by others

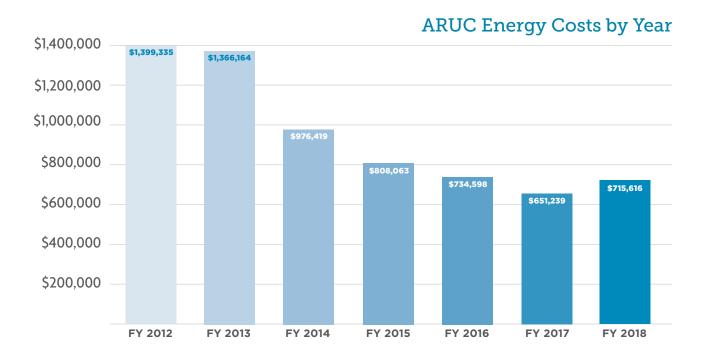
Billing costs paid by community

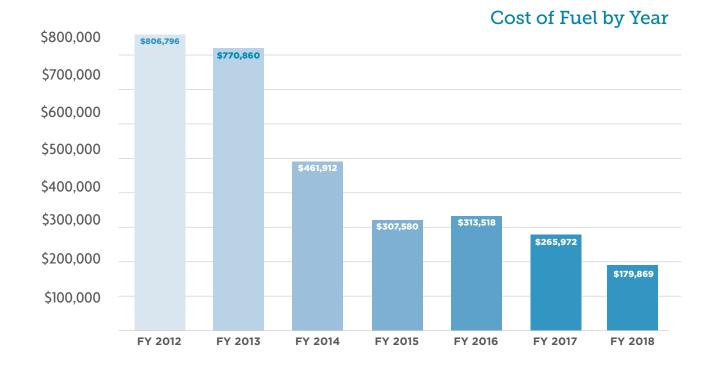
Community-funded projects paid by users

ALASKA RURAL UTILITY COLLABORATIVE

Improved Energy and Operational Efficiency

Through energy efficiency projects in partnership with ANTHC's Rural Energy Initiative, we continue to see a decline in energy expenses such as fuel as seen on the chart below. Energy costs are the second highest expense for water and wastewater facilities and within ARUC communities, energy costs decreased from 39 percent in FY12 to 21 percent in FY18. Energy projects such as heat recovery, wind-to-heat and biomass systems utilize local energy sources to offset fuel and electricity costs, saving communities money.





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

The Harvard Project on American Indian

Economic Development

Indian Health Service

Lake & Peninsula Borough

Maniilaq Association

NANA Regional Corporation

The National Tribal Water Center

Native Village of Chignik Lagoon

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



ALASKA RURAL UTILITY COLLABORATIVE

Operator Recognition 2018



Nick Johnson, Newhalen

Nick has been actively involved in not only the dayto-day operation and maintenance of the facilities but also projects: installation of curbstops on all homes without them, leak location and repair, a new lift station and an extensive refurbishment of the water plant among others. If something needs to be done, Nick will do it. - Jon Savage



Elino Bantatua, Noorvik

Elino has proven to be an extremely competent water plant operator. He maintains a positive attitude while carrying out his duties and shows genuine care and passion for providing and improving service to his community. Gunner Hodgson



Zackar Littlefish, Lower Kalskag

Zackar shows up to work on time every day, is easy to get ahold of whenever a problem arises, and consistently provides water samples for testing. His dedication to everything water plant related makes him a model water plant operator for the community of Lower Kalskag.



Jeremy Billadeau, Chignik Lagoon

Jeremy Billadeau not only assumed the role of water and wastewater operator, he is also Chignik Lagoon's power plant operator, city maintenance worker, main gas and fuel guy, pumper truck operator and refuse hauler. I am amazed at the amount of skill he has brought to the system. – Jon Savage



Stanley Michaelson, Upper Kalskag

Stanley became the local operator and showed a willingness to learn, working with the engineers on the force main's emergency thaw station. The work he completed and operation of the thaw station when the force main froze at 30 below zero was critical for the continued operation of their gravity sewer systems. – Michael Nabers



Nick Changsak, Russian Mission

Nick has been a quick learner when working with the engineers on the waste heat system and water service upgrades... I enjoyed his enthusiasm to learn about what we were doing and why, his work ethic on some of the tougher project components, and willingness to share his life stories about his family and life. – Michael Nabers



Paul J. Larson, Russian Mission

Paul has been our backup water plant operator for a few months now.... Father Larson is a respectable and very reliable person who we can depend on as our backup water plant operator.

Agnes Housler



Evan Macar, Sleetmute

Evan is active in the community operating and maintaining heavy equipment. Evan continues to go above and beyond whenever an issue arises. He is the go to guy regarding anything water related. – Frank Neitz



Darrell Brown, Kiana

Darrell's equipment operating skills have really helped address major issues on the distribution and sewer force main emergencies. Darrell has blossomed into an excellent water treatment operator. – Christopher Cox



David Walker, Holy Cross

David is passionate about public health and is constantly focused on providing safe water for everyone in Holy Cross. He is the first to show up and is always looking for ways to make the water plant better. – Frank Neitz



Arthur Art Sheldon, Shungnak

Art is a level two certified operator and brings with him vast knowledge of treatment and distribution experience. Art plans on sharing his knowledge with the other operators in the community with the hope that we can get more certified operators in place. – Christopher Cox



Sam Bartels, Tyonek

Sam has shown commitment and personal care towards each home's water and sewer service needs. He is well experienced and has been the operator for over 10 years. – Andrea Moreno

What is 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/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's services include helping set water/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 preventative health.

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 strength in numbers and emergency response
- Extending the useful life of the system through prevention and maintenance, thereby saving millions of federal and state dollars in replacement costs
- Hiring and training water plant operators and backup staff in each community with good wages and benefits
- Setting rates with community council agreements: each community's rates are set to be selfsupporting 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

CONTACT ARUC

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