

# REMOTE MAINTENANCE WORKER PROGRAM ANNUAL REPORT

State Fiscal Year 2020



*MA RMW Shyler Johnson working with Don Sheldon Jr. and Martin Cleveland, Ambler Water Plant Operators*

**Prepared by the Alaska Department of Environmental Conservation  
Division of Water  
Technical Assistance & Financing Program**



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*RMW Theo Graber inspecting the Streaming Current Detector in Nanwalek*

## Executive Summary

- ☞ The Remote Maintenance Worker Program provides technical assistance and training to operators of rural water and wastewater systems in nearly 200 Alaskan communities.
- ☞ Eleven full time and one-half time RMWs are employed by regional health corporations and funded through grants administered by the Alaska Department of Environmental Conservation's (ADEC) Technical Assistance and Financing Program. ADEC employs three additional RMWs and an RMW Program Coordinator.
- ☞ In SFY20, the RMW program was funded by two 25/75 state/federal matching grants; the Environmental Protection Agency contributed \$2,099,871 and the US Department of Agriculture, Rural Development, provided \$360,000. The State of Alaska contributed \$700,077 in matching funds, for a total of \$3.15 million.
- ☞ In SFY20, 14.5 RMWs accomplished the following:
  - ☞ Provided over 3,200 hours of hands-on training and technical assistance to 97 communities;
  - ☞ Completed 184 routine village trips to 97 communities;
  - ☞ Completed 65 emergency trips;
  - ☞ Fielded nearly 7,900 phone calls from communities requesting assistance.
- ☞ Eighty RMW-supported communities had properly certified primary operators at the close of SFY20 and 33 villages also had backup operators certified at the correct level.
- ☞ No community served by the RMW program experienced catastrophic failure of their water or wastewater system.



*TCC RMW, Bryan Roesing, assists Koyukuk's water operator, Dewaine Dayton, to install a cleanout outside the water treatment building.*

## THE REMOTE MAINTENANCE WORKER PROGRAM

The Remote Maintenance Worker (RMW) Program was initiated in 1981 to provide onsite training and technical assistance to operators of water and wastewater utilities in rural Alaskan communities. State and federal agencies had been expending considerable funds to design and construct safe sanitation facilities in rural Alaska, only to have systems fall into disrepair or fail due to insufficient local technical skills, lack of preventative maintenance, and improper operations. By employing skilled and knowledgeable RMWs to provide training and assistance to community operators, the RMW Program aimed to build local operational capacity and avert catastrophic failure of utility systems.

The State of Alaska, Environmental Protection Agency (EPA), US Department of Agriculture - Rural Development (USDA-RD) and the Indian Health Service (IHS) have invested over two billion dollars in rural Alaskan villages to provide safe drinking water and sanitary sewage disposal. In the thirty-nine years since its inception, the RMW Program has worked diligently to protect this investment. Today, the Program includes 14.5 RMWs serving nearly 200 communities throughout the State. Five regional health corporations provide RMW service through grants administered by the State and three additional RMWs are employed directly by the Alaska Department of Environmental Conservation (ADEC).

The Mission of the RMW Program is: *To develop the capacity of rural Alaskans to operate and maintain their local sanitation facilities in a manner that protects the health of rural residents and the village environment, while safeguarding state, federal, and the community's investments in water and sewer infrastructure.*

In support of this mission, RMWs offer relevant on-the-job and classroom training; provide routine on-site preventive maintenance assistance to local operators to ensure that sanitation facilities and system components do not fail prematurely; and respond to water and sewer emergencies to maintain service and prevent catastrophic infrastructure failures. Further, RMWs promote the importance of the utility operator's role in protecting public health, in an effort to elevate the status of the position as one deserving merit within the community. In coordination with the Rural Utility Business Advisor Program (RUBA), housed in the Alaska Department of Commerce, Community, and Economic Development's Division of Community and Regional Affairs (DCRA), RMWs strive to bring operators, administrators, and community leaders together to address the overall capacity of the utilities, including technical, managerial and financial aspects.

Among the many accomplishments of the RMW Program are improved record keeping by utility operators, increased level of operator certification, increased hours of on-the-job training, and an overall increase in capacity for communities to address the needs of their utilities, both on a daily basis and in emergency situations.

## FEDERAL FISCAL YEAR 2020 ACCOMPLISHMENTS

The RMW Program is funded by grants from the EPA and USDA-RD, each of which require a 25% State match. As a whole, the program received \$3.159 million in State Fiscal Year 2020 (SFY20); \$2,099,871 in EPA funds, \$360,000 in USDA-RD funds and \$700,077 in State matching funds.

A total of \$2,075,325 in RMW grants were awarded to the following regional non-profit health corporations: Bristol Bay Area Health Corporation (BBAHC), Maniilaq Association (MA), Norton Sound Health Corporation (NSHC), Tanana Chiefs Conference (TCC), and the Yukon Kuskokwim Health Corporation (YKHC). Additionally, the State continued to provide RMW service to the Aleutian, Pribilof and Kodiak Islands, Kenai Peninsula area, Southcentral, and Southeast Alaska.

A historical perspective of RMW grant funding is presented in Appendix A. On a state-wide basis, the average annual cost of the RMW Program per primary community served in SFY20 was approximately \$16,576.

### **Reporting Period**

The RMW grant was initially awarded under the State Fiscal Year (SFY). However, in May 2020 the State requested and was approved for a grant extension through September 30, 2020. For reporting purposes, due to the extension, the outcomes within this report will show data for SFY20 and the fourth quarter of the Federal Fiscal Year (FFY) 2020. For simplicity, this period will be referred to as SFY20.

### **Technical Assistance Outputs**

RMW sub-grants require RMWs to provide a basic level of service that emphasizes routine training trips, preventive maintenance, emergency response, and other capacity building technical assistance activities. Grant requirements aimed at building local capacity include developing, revising, and implementing preventive maintenance plans; providing classroom instruction to village operators that will prepare them for certification exams; providing hands-on, on-the-job training; and participating in community level meetings that target overall utility management capacity improvements.

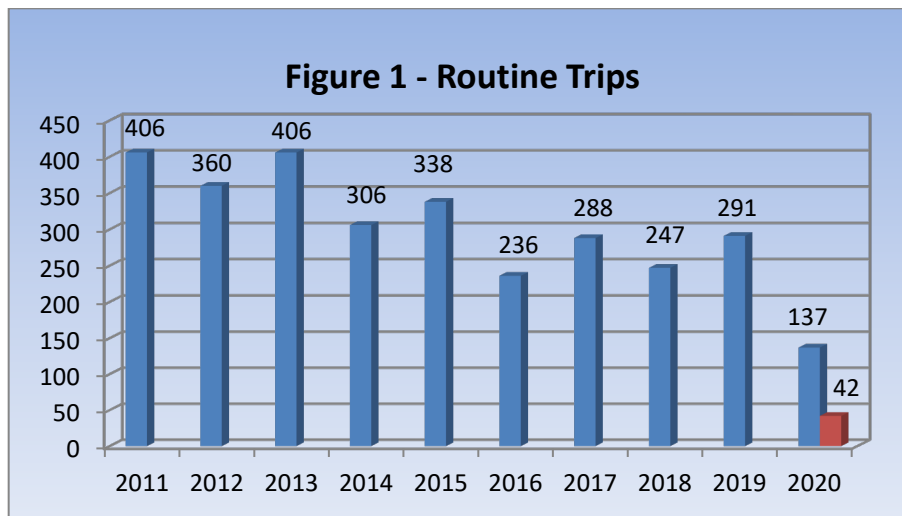
The following measurable outputs related to onsite and technical assistance were completed in SFY20:

#### **Routine Trips**

Within each region, RMWs are assigned to provide support to specific communities. The majority of communities served are considered “primary,” meaning that they receive regular and routine RMW assistance. Additionally, each region has a small number of “advisory” communities to which RMWs provide support. Advisory communities are generally those that do not have community water or wastewater systems, utilize individual drinking water wells and on-site wastewater systems, and/or have very few residents. Other advisory communities may have the capacity to successfully operate their utilities without regular RMW assistance. RMWs are expected to visit each of their assigned primary communities based on the needs of the community. This allows flexibility for the RMWs to make trips to communities where their services are most needed. Unexpected emergencies, weather delays, and scheduling conflicts are all common obstacles to completing routine trips.



In SFY20, the RMW Program expected to make between 350 and 400 routine trips. In total, the RMWs made 184 routine trips during this reporting cycle. The reduced number of trips is attributable to the COVID-19 pandemic.



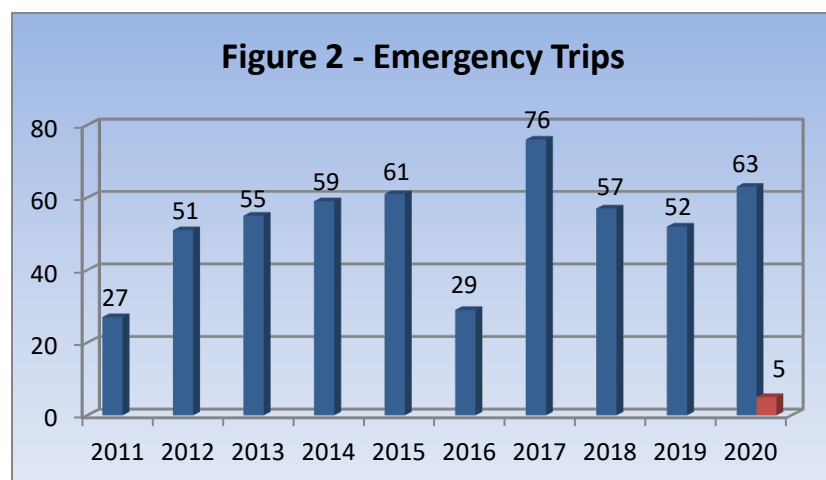
#### Routine Trips

Projected: 350-400  
 Achieved: 179  
 SFY20: 137 trips  
 4<sup>th</sup> Qtr FFY20: 42 trips  
 10 Year Average: 278

#### Emergency Trips

Emergency trips are made to address situations which would otherwise result in failure of some or all of a community sanitation system. By focusing on proper operations and maintenance, RMWs strive to reduce the need for emergency trips. However, turnover of both operators and system managers, as well as high operational costs coupled with a lack of local economy, often hinders the best RMW efforts. Further, emergencies are frequently precipitated by extreme natural conditions; common circumstances which warrant RMW emergency trips are spring flooding and winter freeze ups.

It is difficult to project the number of emergency trips that will be required during any given year; however, the ten year average between SFY11 and SFY20 is 49 per year. During this reporting period, RMWs made 68 emergency trips.



#### Emergency Trips

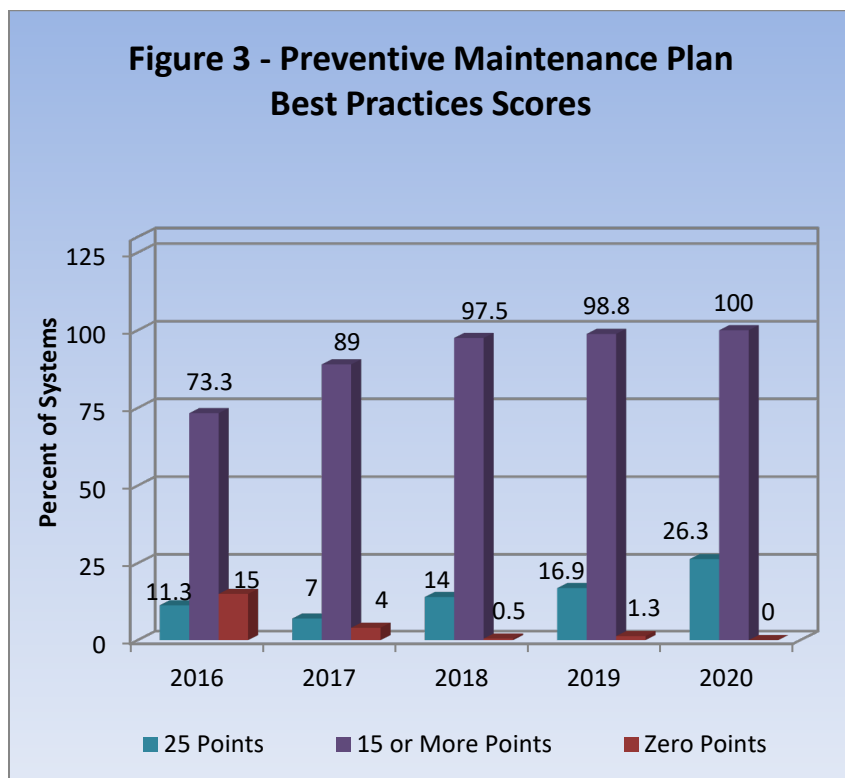
Projected: <30  
 Necessary: 68  
 SFY20: 63  
 4<sup>th</sup> Qtr FFY20: 5  
 10 Year Average: 49

### Preventive Maintenance Plans

Preventive maintenance (PM) plans are critical tools for ensuring proper maintenance of water and wastewater systems. In turn, PM plans help protect public health, improve system reliability, and prolong the lifespan of aging systems. Additionally, PM plans serve as an important management tool for community administrators when determining staffing requirements, as well as actual operation and maintenance costs. Historically, RMWs have assisted operators in developing and revising PM plans, particularly following system modifications.

With the implementation of the Operations and Maintenance Best Practices, RMWs have been tasked with assisting communities in the development of adequate and appropriate PM plans, as well as confirming that the required PM is accomplished. Communities that have a written PM plan, perform PM on schedule, and submit completed records to the RMW quarterly for verification receive 25 best practices points. Utilities that have a written PM plan, but PM performance and record keeping are not consistent receive 15 points. Utilities that either have no PM plan, or do not perform PM, receive no points.

During this reporting period, 95% of RMW supported communities were expected to achieve PM scores of at least 15, with 10% expected to achieve scores of 25. At the end of the reporting period, 156 of 156 communities (100%) scored 15 PM points or more and 41 (26.3%) scored 25 points. No communities received zero points.



#### PM Plans

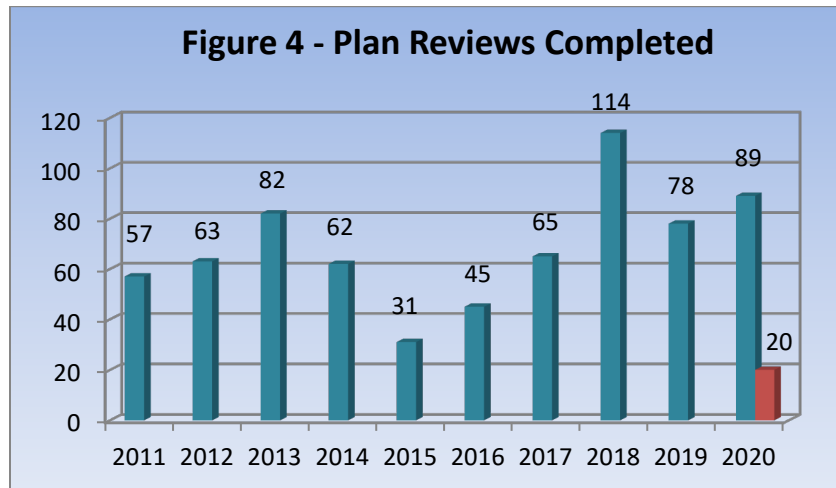
*Projected: 90% score of 15+  
Achieved: 100% scored 15+*

*Projected: 10% score 25  
Achieved: 26.3% scored 25*

### Plan Review

RMWs offer a unique perspective to the plan review process for utility system construction projects, combining their understanding of the communities and their hands-on experience with water and wastewater treatment in rural Alaska. Whenever possible, RMWs participate in plan reviews, primarily providing comments from the operations and maintenance perspective.

The RMW Program anticipated participating in 15 plan reviews, but actually completed 109.



#### Plan Reviews

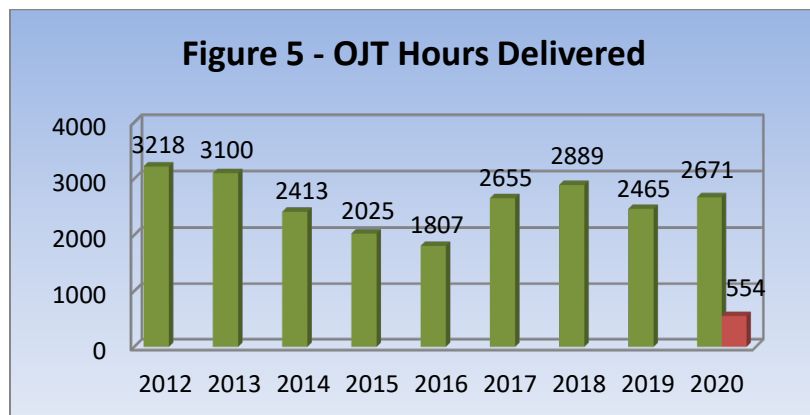
Projected: 15  
 Achieved: 109  
 SFY20: 89  
 4<sup>th</sup> QTR FFY20: 20  
 10 Year Average: 70

### **Operator Training and Certification Outputs**

Grantees are obligated to work directly with local operators and utility managers to address operator certification requirements. The following are measurable outputs completed by the RMWs during SFY20 related to operator training and certification:

#### On-the-Job Training (OJT)

During both routine and emergency visits, RMWs work directly with operators to impart knowledge necessary for proper operation and maintenance of their utilities. This one-on-one guidance within the context of the operator's specific plant is one of the most valuable aspects of the RMW Program. The RMW Program projected delivering 1,200 hours of OJT to operators. The RMWs greatly exceeded this projection by administering a total of 3225 hours of OJT during the reporting period.



#### OJT Hours

Projected: 1,200  
 Achieved: 3225  
 SFY20: 2671  
 4<sup>th</sup> QTR FFY20: 554  
 9 Year Average: 2,644

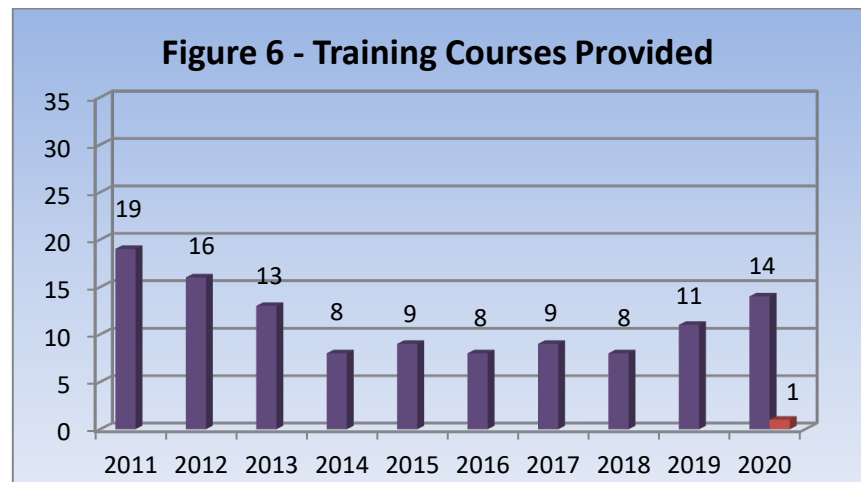
#### Training Courses



RMWs are required to coordinate and deliver entry level training courses within their region to help operators prepare for taking certification exams. The RMWs anticipated providing 10 training courses, but offered 15 courses. Several Introduction to Small Water Systems trainings were held, as well as training on the following topics: Water Treatment, Water Distribution Level 1, Wastewater Lagoons, Electric Motor Controls Troubleshooting, Wastewater Collections Levels 1 & 2, Lab Instruments Calibration Procedures, Cla-Val PRV Troubleshooting and Maintenance, Chlorine Gas Handling and Safety, Pumps and Pumping, Fire Hydrant Service-Flushing, Lift Station Training, and OSHA Safety.

**Trainings**

Projected: 10  
 Achieved: 15  
 SFY20: 14  
 4<sup>th</sup> QTR FFY20: 1  
 10 Year Average: 11.6



## **SFY20 Baseline and Program Outcomes**

Building upon the baseline data established at the end of SFY19 (see Appendix B), the SFY20 RMW Grant Work Plan defined anticipated outcomes for the year. End-of-year data for SFY20 was summarized (see Appendix C) and the following is a comparison between the projected and the end-of-year outcomes.

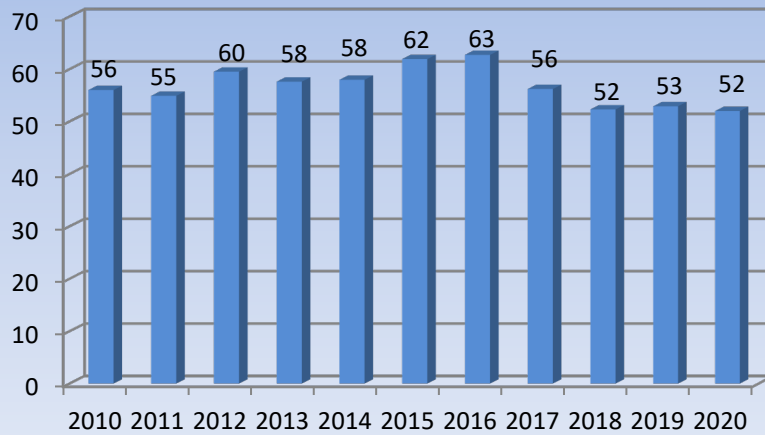
### **System Failures**

The RMW Program anticipated no catastrophic system failures in the RMW-supported villages as a result of operations and maintenance (O&M) deficiencies. At the completion of this reporting period, no such failures had occurred. This is largely as a result of preventive maintenance training of operators by RMWs, constant communication between the RMWs and operators, and timely response by RMWs when assistance was requested.

### **Operator Certification**

The RMW Program aimed to ensure that a minimum of 60% of RMW supported communities have a primary operator certified at the required water treatment level. At the end of the reporting period, 52.3% of the communities had properly certified primary operators. Eighty village systems have operators certified at the correct level of their plant as of the end of the reporting period; an additional 34 systems have primary operators certified at some level.

**Figure 7 - Percent of Systems with Primary Operator Certified at the Correct Level**

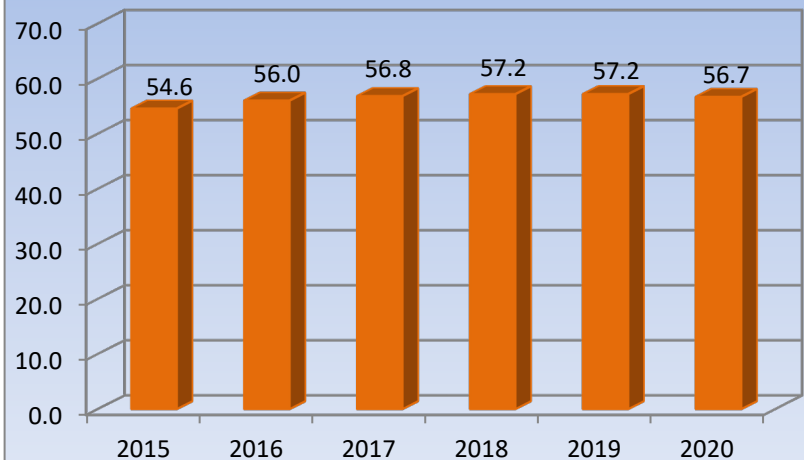


**Primary Operator Certification**

Baseline: 52.9% (81 of 153)  
End-of-year Target: 60%  
Outcome: 52.3% (80 of 153)

In SFY19, a new intended outcome of the RMW Program, that the 10 year average of the percent of RMW-supported communities with a primary operator certified at the required water treatment level will increase each year, was established.

**Figure 8 - 10 Year Average of Percent of Systems with Primary Operator Certified at the Correct Level**



**SFY20 10 Year Average of Primary Operator Certification**

Baseline: 57.2%  
End-of-year Target: > 57.2%  
Outcome: 56.7%

The RMW Program also aimed to increase the number of RMW-supported communities with a backup operator certified at the required water treatment level by 3%. At the end of the reporting period, 33 systems had backup operators certified at the correct level of the plant and another 33 systems had backup operators certified at some level.

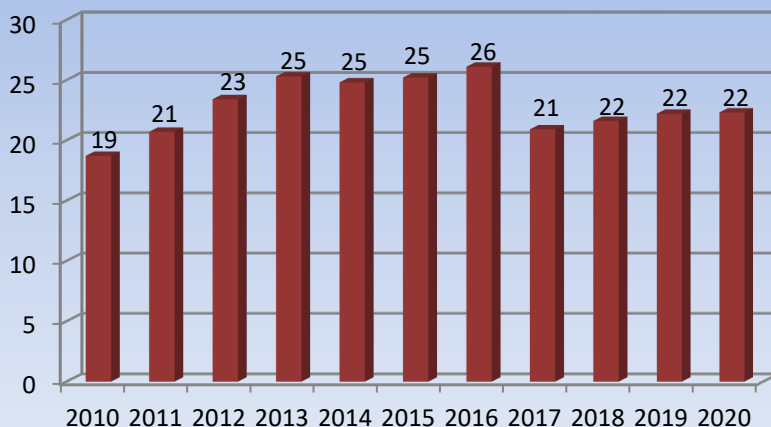
### **Backup Operator Certification**

*Baseline: 22.2% (34 of 153)*

*End-of-year Target: 25.0%*

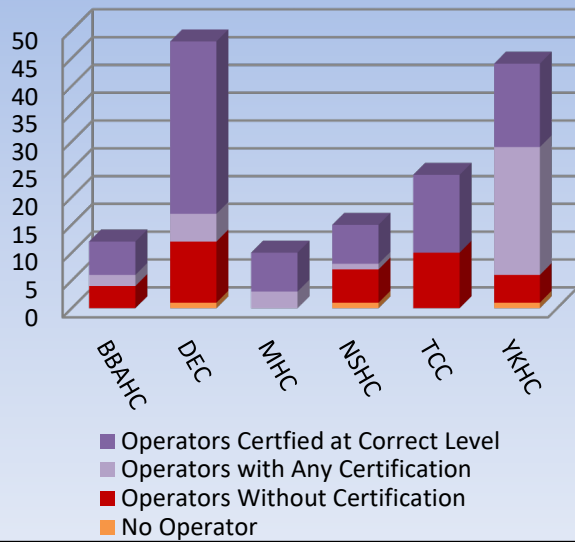
*Outcome: 21.6% (33 of 153)*

**Figure 9 - Percent of Systems with Backup Operator Certified at the Correct Level**

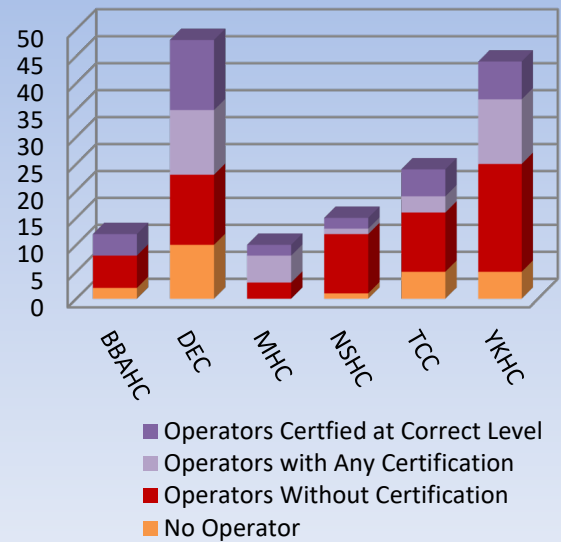


Operator certification requirements are directly related to the complexity of the water system. Many rural Alaskan communities rely on water sources that require complex treatment and, therefore, an operator with a high level of certification. More than half of the communities served by the RMW Program have water treatment systems that require an operator at a Level 1 or higher. In addition to successfully completing the required certification exams, operators must have some amount of post-secondary education in order to attain these certification levels. *Figure 13* demonstrates that as system classification increases, so does non-compliance with operator certification requirements.

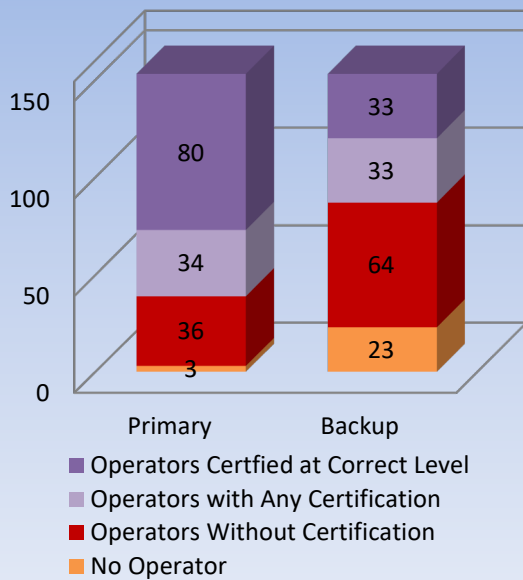
**Figure 10 - Primary Operator Certification Levels by Region**



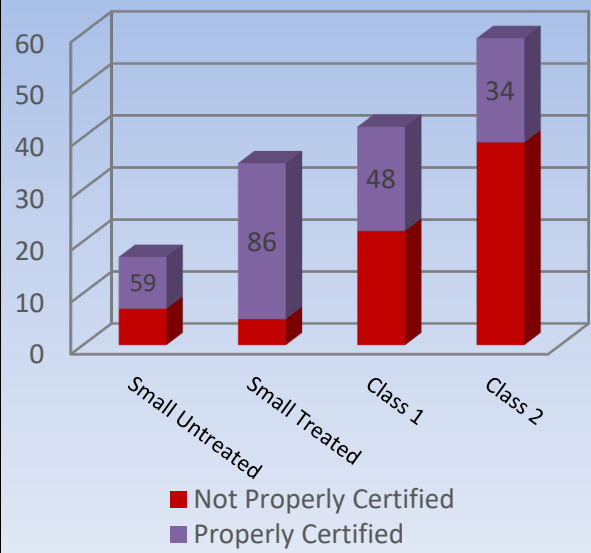
**Figure 11 - Backup Operator Certification Levels by Region**



**Figure 12 - Operator Certification Levels Statewide**

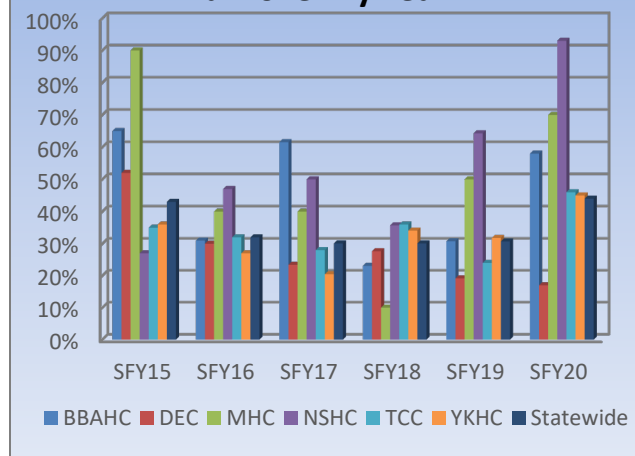


**Figure 13 - Primary Operator Certification by Classification**

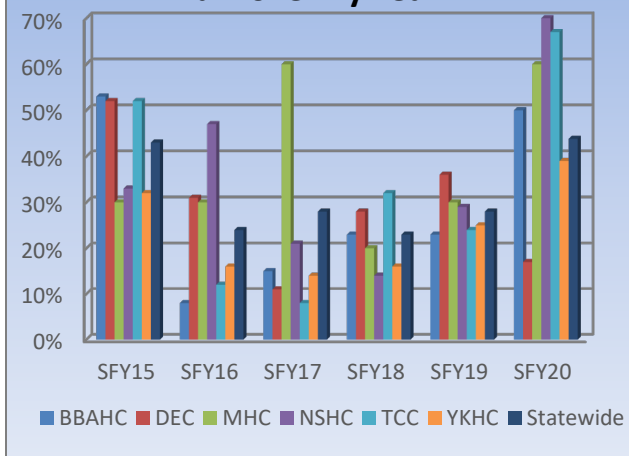


Operator turnover has been, and continues to be, a significant obstacle in the effort to increase operational capacity of rural utilities. During SFY20, 44% of RMW communities experienced at least one change in primary operators; 44% also experienced a change in backup operators. In many cases, these communities had several instances of turnover in both the primary and backup operator positions. Turnover varied from region to region, with some experiencing as much as 93% turnover in primary operators and backup operators. Statewide, communities experiencing turnover of primary operators increased from 31% in SFY19 to 44% in SFY20; turnover of backup operators also increased from 28% to 44%.

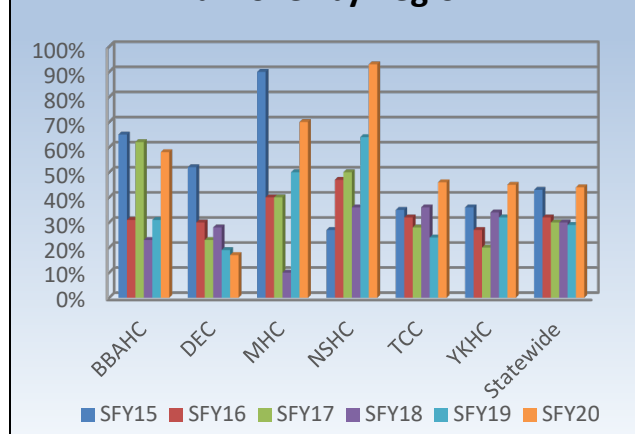
**Figure 14 - Primary Operator Turnover By Year**



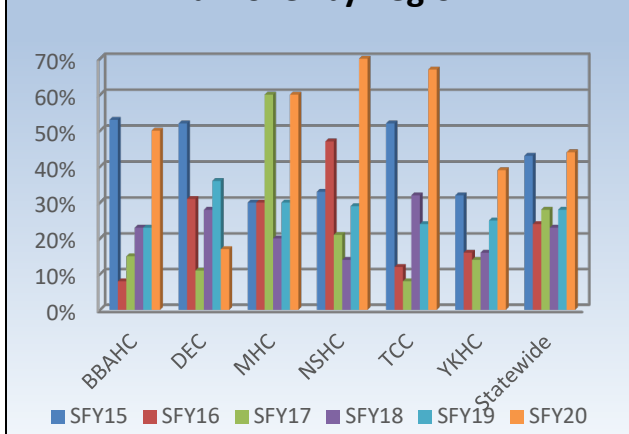
**Figure 15 - Backup Operator Turnover By Year**



**Figure 16 - Primary Operator Turnover by Region**



**Figure 17 - Backup Operator Turnover by Region**

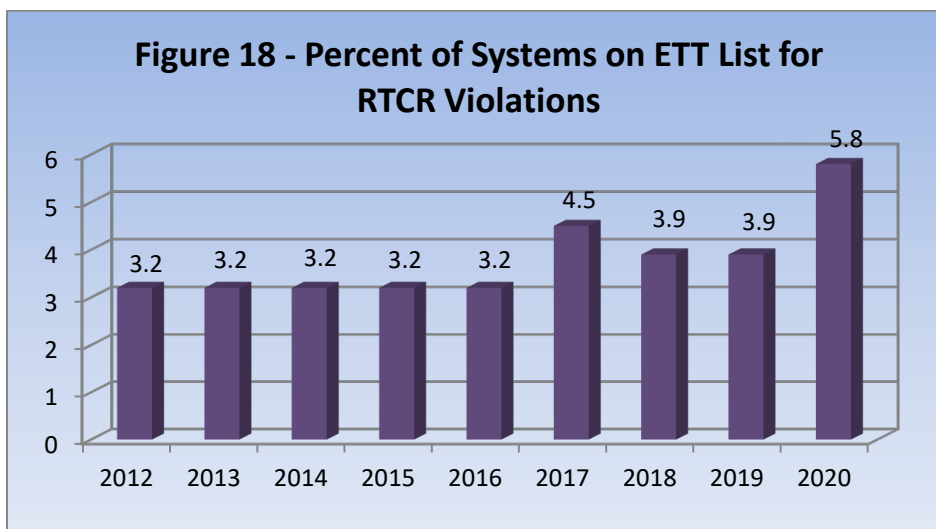


For certificates that expired on December 31, 2019, three primary drinking water operators and one backup operator from RMW-supported communities lost their certifications due to a lack of required Continuing Education Units (CEUs); two other primary operators and one backup operator obtained the required CEUs, but have not yet paid the renewal fees. In these cases, both the RMWs and the Operator Certification and Training (OpCert) Program had been in contact with the operators to encourage them to take appropriate measures for retaining certification. Other factors that impact operator certification may be beyond the control of the RMW program.

## Compliance

Remote Maintenance Workers spend considerable time working directly with operators to ensure that they possess the knowledge and skills required to safely operate and maintain their systems. In addition, RMWs dedicate significant time and effort to assisting water system personnel, from operators to administrators, in meeting regulatory monitoring and reporting requirements.

The RMW Program projected that less than one percent (1%) of RMW-served villages would be on the Enforcement Targeting Tool (ETT) list for violation of the Revised Total Coliform Rule (RTCR) at the end of SFY20. At the close of the year Akhiok, Akutan, Clark's Point, Diomed, Emmonak, Nelson Lagoon, Platinum, Saint George, and Shageluk were on the ETT list for failure to monitor and report as required by the RTCR. This represents 5.8% of RMW served communities. It is likely that implementation of the RTCR, with slightly modified requirements from the TCR, has contributed this increase in violations.



### RTCR ETTs

Baseline: 3.9% (6 of 154)  
End-of-year Target: < 1%  
Outcome: 5.8% (9 of 154)

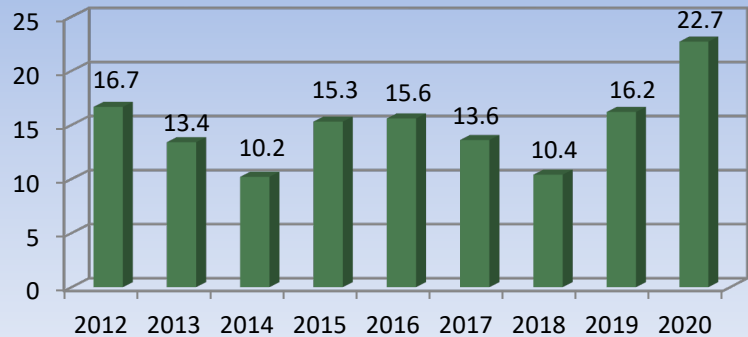
The RMW Program projected that less than ten percent (10%) of RMW-supported villages would be on the ETT list for any operation-related violations not related to the RTCR. Thirty-five systems, or 22.7% of RMW-supported systems, were on the ETT List for violations including failure to conduct quarterly or annual chemical monitoring, maintain adequate chlorine residual, or report daily chlorine and turbidity monitoring results. The reported communities included Akhiok, Akutan, Alakanuk, Anvik, Atmautluak, Chuathbaluk, Clark's Point, Deering, Diomed, Emmonak, Goodnews Bay, Grayling, Hydaburg, Karluk, Kasaan, Koliganek, Kongiganak, Kwethluk, Kwigillingok, Manokotak, Manokotak Heights, Nelson Lagoon, Newtok, Nightmute, Nunam Iqua, Platinum, Quinhagak, Ruby, St. George, Scammon Bay, Shageluk, Sleetmute, Tetlin, Tuluksak, and Tuntutuliak.



**FFY20 Operation-Related  
ETTs**

*Baseline: 16.2% (24 of 154)  
End-of-year Target: < 10%  
Outcome: 22.7% (35 of 154)*

**Figure 19 - Percent of Systems on the ETT  
List for Operations Related Violations**



Many factors that affect a community's capacity to deliver water and wastewater services in rural Alaska are beyond the control of the RMW Program. These factors often create situations that make progress difficult to quantify. Oftentimes, maintaining the ground that has been gained since program inception or from one year to the next is considered a success. Turnover of community leaders and operators, poor economic health of rural communities, competing forms of village government, and local institutional deficiencies, along with cultural and socioeconomic factors, can be formidable roadblocks to progress. Another factor that directly impacts the success of sanitation systems and the RMW Program is the necessity for many systems to become increasingly complex in response to new regulatory requirements. This often results in operators having significant technical capacity deficits. In addition, increasing energy costs often diminish the amount of local funds available for adequate operations and maintenance.

The RMW Program has established goals that are realistic, yet challenging, to meet. While not all of the targets were met in SFY20, improvements were made in most areas and no significant deterioration in previous progress occurred. In light of the dynamic nature of the work, and addition challenges faced due to the COVID-19 pandemic, these results should be considered successful.

## FEDERAL FISCAL YEAR 2020 PROGRAM HIGHLIGHTS

The RMW Program is dynamic by nature, but SFY20 has been an especially challenging year given the travel restrictions and isolation practices accompanying the arrival of COVID-19. However, despite the challenges, the RMWs were proactive in providing quality service to their communities.

In October 2019, MA RMW Shyler Johnson resigned. After a vacancy of two quarters, in March 2020 the position was filled by Bruce Nelson. Prior to RMW Johnson's departure, the MA RMW Program provided training to two new NSHC RMWs as they assisted the community of Gambell. RMW Johnson successfully showed the new NSHC RMWs how to assist the community with preventative maintenance plans, address electric control problems, and assess the failing insulation on the water storage tank.

In January 2020, YKHC had a shift in positions. RMW supervisor Brian Lefferts accepted the interim position as the Community Health and Wellness Director and Bob White accepted the position as RMW supervisor. Mr. White continues to serve as one of the five YKHC RMWs along with managing the program. Prior to officially accepting the position, Mr. White has assisted in RMW supervisory functions for several years.

In March 2020, DEC RMW Matt Bradbury resigned. The position was filled in October 2020 by Clay Cook. In December 2020, the Remote Maintenance Worker, Capacity Development, and Operator Certification Programs, with assistance from the Drinking Water, Wastewater, and RUBA Programs created a 2020 Monthly Calendar as a resource for communities. The calendar highlights important dates and time-sensitive tasks for municipal water plant, city clerk, and bookkeeping staff. The calendars also include reference pages with important contact information and descriptions of key programs that support Alaska's public water and wastewater systems.

In September 2020, BBAHC RMW Supervisor Rex Spofford submitted his resignation. The position remains vacant despite recruitment efforts. Bryan Reed, the Support Services Division Manager, has taken on the duties of RMW Supervisor position, in addition to his regular duties, during the vacancy.

The NSHC RMW program had significant changes during the reporting period. NSHC reorganized to create a new Sanitation department, which assumed the oversight of the RMW program. Two new RMWs, Stosh Labinski and Richard Kuzuguk, were hired in January 2020. At that time, RMW Luke Smith transitioned from an RMW position to a newly formed NSHC O&M Specialist position. In March 2020, Sean Lee was hired as the Sanitation Manager for the new department and became the NSHC RMW supervisor.

At the beginning of the 2nd quarter of the reporting period, TCC RMW Kurt Cook resigned, taking with him a level 4 wastewater certification and valuable wastewater experience. There was lack of interest in the position for several months, possibly due to other large commercial projects underway in the area. However, at the end of March 2020 Fred Withrow, who is a journeyman electrician but new to the water treatment field, was hired.

As always, each of the regions responded to unique and challenging situations in SFY20. Due to the pandemic, the RMWs had to constantly assess and reassess ways to assist communities. This curtailed routine village travel starting in March 2020 as each village had different travel restrictions, quarantine requirements, and exceptions for service providers such as RMWs coming into the village. At minimum, all communities required RMWs to have negative COVID test results before traveling to the communities.

The following are just a few examples of RMW successes during the past fiscal year.

### ***Bristol Bay Area Health Corporation***

*Despite the RMW supervisor turnover, the BBAHC RMW Program remained consistent in the delivery of both emergent and routine services throughout the year. RMW Kenny Parker continued handling the delivery of service for BBAHC.*

*In August 2020, the City of Manokotak had multiple positive coliform samples. RMW Parker assisted the city in isolating the problem. DEC assisted the BBAHC RMW supervisor in creating a work plan and equipment needs list to shock chlorinate the system. RMW Parker assisted the city operator in shocking the system, and dechlorinating and flushing the system.*

### ***Department of Environmental Conservation***

*In April 2020, the community of Nondalton had a series of problems when the spring thaw coincided with heavy rains, causing their lift station pump to fail and overflow into the nearby lake, as well as washing out roads and a creating a sudden increase in distribution system leaks from erosion. Due to Covid-19, RMW Theo Graber was unable to travel in person to assist, but he created a systematically laid out work plan that was easy to follow and broke down the large issues into smaller, easier-to-handle, action items that the local crew were able to carry out. Due to RMW Graber's assistance, local operators were able to locate and repair a major leak that had been eluding the community for years and thus reduced their water consumption by almost a quarter.*



*RMW Steve Evavold discussing operations with the Seldovia operators*

## **Maniilaq Association**

*The Maniilaq RMW Program assisted the community of Kiana in addressing lift station pumps that were inoperable. The RMW program located the required parts in Kotzebue and assisted in getting one pump going, which stopped sewage from being released into a local river. Additionally, the Maniilaq RMW program coordinated with the Alaska Native Tribal Health Consortium (ANTHC) Tribal Utility Support group and engineers to address Selawik's flooded water process control panel. The group helped locate parts from other components of the Selawik water treatment plant and replaced relays to get the panel up and running.*



*ANTHC staff Mickey Jorgenson, MA RMW Shyler Johnson, RMW Supervisor Chris Cox, DCRA RUBA staff Margaret Hansen, and ANTHC staff Chris Dankmeyer.*

## **Norton Sound Health Corporation**

*In February 2020, NSHC RMW Richard Kuzuguk stepped up in the first month in his new role of RMW in an astounding manner, when he responded to a major sewer blockage and subsequent sewer line freeze up in Gambell. RMW Kuzuguk made a trip to Gambell and assisted the community operators diagnose the issue and begin jetting. The jetting operation lasted for 52 hours and had to keep going around the clock to prevent a sewer freeze-back.*





*NSHC RMW, Richard Kuzuguk, assisting with the installation of an electric chain hoist*

*Additionally, to help combat the COVID-19 pandemic, NSHC created a hand washing station instruction manual for their communities. Materials to construct the hand washing stations can be obtained, and are easily replaceable, in rural communities. NSHC shared the instruction manual with the other regional RMW Programs.*



*An assembled hand washing station*

## **Tanana Chiefs Conference**

*SFY20 was a significant year for TCC Office of Environmental Health and the RMW program. A very long cold snap during the winter contributed to sanitation system emergencies in several villages and moderate problems in many more. Three TCC villages experienced water main loop freeze ups, which was an unprecedented event for the region.*

*As the COVID 19 pandemic began to affect Alaska in late February, many community health clinics were already experiencing weather-related disruptions to their sanitation systems. Since properly functioning sanitation systems are critical to infection control measures, the State RMW program, with EPA concurrence, made an unusual exception to the grant requirements and allowed RMWs to work on village clinics that had water and sewer problems. This allowed TCC to restore water and sewer service to five clinics that had freeze damage, leaks, heating problems, or frozen sewer service lines.*



*Lee Meckel, TCC RMW, providing flow meter training*



*Fred Withrow, TCC RMW, at the well house in Beaver*

## **Yukon Kuskokwim Health Corporation**

*Cheformak's water system distribution loop froze in February 2020 due to a problem with the heat-add for the well. RMW McIntyre was able to troubleshoot the heat loop and assist the operators in getting the well back online. Within just two days, he was able to train the operators sufficiently in how to use the jetting equipment so that they were able to thaw the rest of the distribution line independently.*

*In March 2020, Toksook Bay had a storm that damaged the power lines to one of the well heads, causing the well intake building to freeze. This took out the majority of the water production capabilities and caused the line to freeze between the well intake and the water plant. RMW White was able to mobilize out to the community with parts to rebuild the well intake building and restore the water connection to the raw water transmission line. RMW White worked with local operators to locate and install heat trace on each end of the transmission line so it could start thawing. The treatment system was then adjusted to be able to continue operating on just one well. After this adjustment, they were able to slowly start increasing the level in the water storage tank. The raw water line thawed in about six weeks using just the heat trace and without the need for any further work.*



*In Spring 2020, Pilot Station contacted RMW Westlock and reported a water leak at an unknown location. With the water level dropping in the water storage tank, RMW Westlock had leak detection equipment shipped from Bethel. Due to COVID-19, RMW Westlock was unable to travel but was able to instruct the operators over the phone on how to use the leak detection equipment to locate the leak and make the repair.*

*Additionally, the YKHC Office of Environmental Health and Engineering, with assistance from the RMW Program, developed a Bleach and Water Project. The project had two aspects. The first was to produce and distribute bleach in villages with limited or no access to commercially available bleach. This was accomplished by assembling and shipping bleach-making kits to villages. The kit included a 32-gallon trash can, personal protective equipment, mixer, siphon pump, and directions. The kit was used to mix Chlorine in a 5% solution using the calcium hypochlorite already available in most village water plants. The villages then filled empty bleach bottles that were shipped to them and distributed them to each household. If a village did not already practice chlorination of their water, YKHC also shipped them a bucket of calcium hypochlorite. The second aspect of the project was to provide an extra 5-gallon water bucket to homes without running water. Villages were asked to distribute the buckets to homes that were not served by municipal sanitation systems and help those residents get access to more water.*

*By increasing the water available for cleaning in homes, as well as providing a means of disinfection of surfaces, YKHC aimed to reduce the chance of spreading the coronavirus among the villages. The RMW Program's contribution to the project included the cost of the supplies for the project.*



YKHC RMW Shane McIntyre assisting Chefnak operators



YKHC RMW Bob White assisting the Kwethluk operators

## **A LOOK FORWARD AT FEDERAL FISCAL YEAR 2021**

Moving into FFY21, the RMW Program will continue to search for novel methods to assist communities and build local capacity, particularly in light of the ongoing COVID-19 pandemic. As always, the RMW Program will strive to implement program improvements to increase efficiency and effectiveness, as well as continue to improve partner relationships with organizations that also serve rural Alaskan communities, including VSW, RUBA, Operator Certification, and ANTHC.

As an example, the RMW Program has been assisting the Operator Certification Program with the System Specific Training and Certification (S<sup>2</sup>TC) Program. The S<sup>2</sup>TC Program will include 13 training modules and certification exams that will be used to train and certify operators of systems that have been chronically out of compliance with operator certification requirements. Five training modules, and their associated exams, have been completed on the topics of regulations, surface water characteristics, direct filtration, corrosion control, and disinfection. The completed modules will be beta tested with operators in Kake and Hydaburg in early 2021. Work on the remaining eight modules is ongoing.

Additionally, to promote communication and cooperation between RMW regions, each week the regional RMW Programs will be submitting a brief summary of each region's issues to the RMW Program Manager. Issues to be reported include freeze-ups, recovery issues, and other circumstances that impact utilities and public health. The RMW Program Manager will compile the information, then share it with all RMW regions and the DEC leadership.