- Alaska has more coastline than the rest of the United States combined (more than 34,000 miles).
- Alaska has the lowest population density in the nation at one person per square mile.
- If New York City had the same population density as Alaska, only 16 people would be living in Manhattan.

- Temperatures (January):
  - Barrow:
    - AVE High: -7.3 °F
    - AVE Temp: -13.4 °F
    - AVE Low: -20 °F
  - Fairbanks:
    - AVE High: 1.1 °F
    - AVE Temp: -7.9 °F
    - AVE Low: -16.9 °F
  - Sitka:
    - AVE High: 40.5 °F
    - AVE Temp: 36 °F
    - AVE Low: 26 °F

- Temperatures (July):
  - Barrow:
    - AVE High: 48 °F
    - AVE Temp: —
    - AVE Low: 34 °F
  - Fairbanks:
    - AVE High: 73 °F
    - AVE Temp: —
    - AVE Low: 52 °F
  - Sitka:
    - AVE High: 61 °F
    - AVE Temp: —
    - AVE Low: 48 °F
- Anchorage: 300,000
- Fairbanks: 33,000
- Juneau: 33,000
- Sitka: 9,000
- Homer: 5,500
- Soldotna: 4,700
- Dutch Harbor: 4,500
- Valdez: 3,800
- Seward: 2,800
- Girdwood: 1,800
- Haines: 1,375
Please put toilet tissue in the toilet

Por favor poner papel higiénico en el inodoro

Mangyaring ilagay ang pandewing sa banyo

Fadin gali tishka musquasha

S'il vous plaît mettez du papier hygiénique dans les toilettes
Subsistence Living
• Over 3,300 rural Alaska homes lack running water and a flush toilet.
Water Quality

Thomas et al. 2016
Journal of Water and Health

Water use increased from 1.5 to 25 gallons/person/day lead to declines in illnesses:

- 16% respiratory
- 20% skin
- 38% gastrointestinal
Alaska Water Sewer Challenge

- The Alaska Department of Environmental Conservation, in coordination with tribal, state and federal agencies,
- spearheaded a research and development effort to find better and more affordable ways to deliver drinking water and sewage disposal services to rural Alaska.
- Develop and demonstrate an in-home water/wastewater system alternative that will enable a minimum of 15 gallons per person per day of available water that
  - is of high quality suitable for all in-home non-potable uses,
  - minimizes water that must be hauled into and out of the home, and
  - is cost effective and sustainable in Rural Alaska.
Welcome Home!

- Drinking Water System
- Kitchen Sink
- Washer/Dryer
- Bathroom Sink
- Shower
Living in Remote Alaska (Kipnuk, AK)

Photos by Liz Hodges-Snyder for Alaska Water Sewer Challenge
Sanitation for Villages

- ANTHC’s PASS
  - Portable Alternative Sanitation System
- Trial in Kivalina, Alaska
1. **Rain catchment system.** With an average rainfall of 7-inches between May and October and an 800 square foot home with a catchment area of approximately 1,200 square feet, it is possible to recover nearly 3,000 gallons at 60% collection. This can be used to supplement the quantity of water hauled to the home.

2. **Water storage tank.** The 100-gallon, gravity-fed tank does not require electricity.

3. **Low flow sink and waterless urinal.** The sink (0.25 gallons per minute) and urinal conserve water while providing for hygiene and sanitation needs.

4. **Greywater tank.** The greywater tank purges urine and greywater from bathroom sink into a buried seepage pit located adjacent to the home when full.

5. **Integrated ventilation.** An energy-efficient combined ventilation system dries the waste, reduces odors, and ventilates the home.

6. **Separating toilet.** Waste is separated into liquid and solid components where the liquid is disposed of into the seepage pit and dried solids are disposed of in the landfill.

7. **Water treatment system.** The water treatment system incorporates membranes and chlorination for point-of-use treatment to ensure the water is safe to drink—independent of the water quality of the source or potential contamination through hauling and storage practices.
Reaching Rural Members

- Host Annual Statewide Conference in Anchorage
- Annual Southeast Alaska Operator Training Conference
- Annual Northern Region Operator Training Conference
- Host Monthly Luncheons
  - Webinars
New and Potential Rural Members

- One AWWA Operator Scholarship
- Award two separate individuals a $1000 scholarship per person.
- Scholarship award can be used for certification/licensure, two-year water related associate degree, technical school program, professional training program, books and manuals, and operator related conferences.
- Each scholarship recipient will also receive a one-year AWWA Operator membership.
One AWWA Operator Scholarship

**ELIGIBILITY/GUIDELINES**

- Applicant must be a current water operator or seeking to enter the water operator profession.
- Applicant must be pursuing an Operator’s License or Certification, two or four-year degree related to the water operator profession, or professional development.
- Disbursement of the funds will be made directly by the Section to the financial office of recipient’s college, university, or technical school.
- Items related to books, manuals, conferences, professional development courses, and other eligible expenses will be reimbursed to recipient upon presentation of eligible receipts.
- Applicant must reside or work within the geographical boundaries covered by the sponsoring Section.
- Acceptance of scholarship constitutes permission to use recipient’s name and scholarship story for purpose of promotion.
One AWWA Operator Scholarship

APPLICATION:

- One page essay of career objectives and how this scholarship will enhance your ability for professional development and bring value to the water industry.
- Résumé
- Two letters of recommendation/reference
2017 Recipient - Sheryl Wassillie

- Igiugig
- The population is 69 people – primarily Yupik Eskimos, Aleuts, and Athabascans
- Access is to fly to a gravel strip 3000 feet long by 75 feet wide.
- Largest Salmon fishery in the world
  - Kvijack River has the single largest red salmon run in the world
My name is Sheryl Wassillie, I work at Igiugig Village Council as the Water Operator Assistant, Yupik Language Apprentice and Procurement Clerk. For the Village Council, I am currently assisting the Operator in collecting water samples following the monitoring summary in place for our new water treatment plant. I also created the sampling plans, wrote the 2015 CCR, and have helped with the monthly operator report. I am also familiar with the plant; I have made water, backwashed the system, and made polymer. I have learned so much working as the assistant and am excited to learn more. There is definitely a lot more to learn.

This scholarship will support me in becoming a certified water operator for my community. I find it interesting and am eager to learn more in the area. It would bring value to the water industry directly by allowing me to get certified and take back what I’ve learned to my rural community. The ability for growth in this specific area is enticing and am hopeful I get certified and work my way up the ladder. I’m always motivated to learn new things, have an admirable work ethic, and I would greatly appreciate it if you would consider me for the AWWA Operator scholarship. Quyana caqnek, thank you very much.
2017 Recipient Valentina Kusnetsov

- Voznesenka, Alaska
- Russian Old Believers
- There are more than 40 families living in Voznesenka.
- Although unincorporated, the community has a mayor, a community council, and a water-utility board.
- Voz Water Utility
  - Backup Operator
I am very pleased that the One AWWA is offering this scholarship and I see it as opening up wonderful opportunities for me and others. Our community of Voznesenka near Homer, Alaska is made up of families of the Russian Old Believer tradition. Most of the men in the community are employed in construction and fishing which takes them away from their families for long periods of time. The women’s role has traditionally been to remain at home and provide care for the children and others within the homes.

My objective is to earn my certificate and become the first qualified female operator in our community. I have lived in Voznesenka for the past nine years and have seen how every summer almost all our men leave for the fishing season and we are left with no backup personnel to operate the water utility system. This is a position that does not require the operator to be out of the home for the entire day, and it is within the community, which would make it much more acceptable for someone like me, a mother of three young children and a homemaker. I believe that I can help my community by passing the exams and getting my certificate, and with that step not only fulfill a needed position, but also demonstrate to the community’s women that it’s possible to pursue non-traditional roles and that we can achieve whatever we put our minds to.

I was very pleased (and also kind of surprised) to discover that the Water Utility’s board is open to hiring me, a woman, to fulfill a position at the plant. This scholarship would make it possible for me to pursue the certificate I need to work at Voz Water Utility and become a water operator in my community.
2018 Recipient Jud Kirkness

- City and Borough of Sitka, Parks and Grounds Maintenance Specialist: 2010 - Present
- South East Cedar Homes, Lead Carpenter: 2007 - 2010
- Sitka Trail Works, Crew Leader: Summer 2006
  - Managed solid waste and recyclables for off continent shipment of U.S. Antarctic program
  - operations at South Pole station.
2018 Recipient Jud Kirkness

In an information society filled with such a vast array of learning opportunities and formats, it is increasingly important for the aspiring professional to take charge of their educational track and to pursue opportunity wherever it presents itself. As a Water Operator 1 for the City and Borough of Sitka, Alaska, I have taken it upon myself to engage this new career with resolute commitment, and to make myself a highly valuable component of our team.

Of all the information I have learned and processed since beginning my Water Operator 1 position in November of 2017, it is the level of responsibility that our profession requires which keeps me constantly motivated to absorb any and all new information. The possibility of small mistakes to compound into steep consequences lends a sharp air of necessity to making sure that my education on all water system subject matter is comprehensive. Doubly so because I know my community is depending on a service that has no room for error when it comes to proper sanitary treatment of the water and timely care of its distribution system.
To Who It May Concern:

I recently got hired by the City of Newhalen ARUC as the Water Operator. This scholarship would help me to attend my first training at Anchorage on April 2-6, 2018 for the Introduction to Small Waters Systems, Provisional Level.

I will be working closely with Nick Johnson who is the Water and Sewer operator for Newhalen. This training will help me more understand the position I have taken here and better serve my community and the customers I will be serving. I hope to take the exam for certification that I have completed the first stage.
Wastewater Operator Scholarship

- AWWMA Board of Directors
  - Contemplated Funding for Operator Ingenuity Contest
  - Felt Scholarship towards training would better serve our community and rural operators
  - Provide a scholarship for Operator Training
Your Success Stories??

• How have you reached rural members?
• How have you developed new rural members?
• Have you had success in developing an Operator workforce?
• Operators- what was your motivator to get involved with WEF?
Permafrost Occurrence

Coverage in the North
85% of Alaska
50% of Canada
50% of Russia
25% of China