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## Spotlight on Workforce Solutions

# Distance Learning Helps Alleviate Workforce Issues in Alaska

**A**laska is the country's largest state, making up one fifth of the nation's land mass. It spans more than 2,400 miles east to west and more than 1,420 miles north to

south. With a population of just 670,053 people as of July 2006, only 160,000 of its 365 million acres are inhabited. More than one third of these

people live in or near Anchorage, Alaska's largest city. More than 1,700 regulated water systems supply drinking water to Alaska residents. Most of these systems are very small, and many are in remote areas. In addition, Alaska has a very limited road system and has daunting challenges with freezing temperatures and snow.

This combination of factors creates major challenges to finding, training, and retaining the skilled operators needed to provide safe drinking water and maintain compliance with US Environmental Protection Agency (USEPA) regulations.

With the can-do spirit common among the hardy people of Alaska, these challenges have evolved into solutions. Given the remoteness of water providers, the preponderance of very small systems, and a vastly distributed workforce, Alaska has found ways to deliver quality utility training to individuals who are unable to attend classes in person.

One example is the University of Alaska Southeast's Environmental Technology (ENVT) Program, a Web-based distance learning program. Developed under a 1995 National Science Foundation Grant, ENVT is helping to reduce the gap between the need for knowledgeable, technically capable utility operators and the available pool of skilled, certified people to fill those positions. This gap is similar to that faced by most utilities today.

ENVT is designed to prepare interested, capable individuals for utility work and careers. It is targeted toward individuals who

- have the qualifications and seek certification,
- have the necessary skills but are unaware of utility opportunities,
- are seeking careers in the water/wastewater profession but face challenges in gaining access to certification training, or
- are already working for utilities and are seeking advancement but have little or no access to training and certification preparatory courses.

The ENVT program was developed by John W. Carnegie, who initiated the program at the univer-



**Sam Nickerson, an operator in Klawak, is learning important lab procedures at the University of Alaska Southeast's Environmental Technology Program chemistry/microbiology lab on the Sitka campus.**

sity's campus in Sitka, Alaska. ENVT offers a fundamental background in environmental technology with an emphasis in the water and wastewater career field. Today, program admission is guaranteed to all Alaskans who have earned a high school diploma or completed the General Educational Development (GED) test. ENVT often takes advantage of the skills and experience of water professionals by using them as instructors.

The program has had more than 400 students register for courses since it was approved by the University Board of Regents in 1997. ENVT offers three options, each geared toward a different audience and outcome: occupational endorsement, a certificate, and an associate of applied science (AAS) degree.

- Occupational endorsements are designed to provide specific occupational training and require a minimum of 15 credit hours that are fully transferable toward the environmental technology certificate and the AAS degree in environmental technology. This program introduces the students to the environmental curriculum and satisfies the educational requirements for level-one certification in whichever endorsement they choose.

- The certificate program emphasizes technical operations and takes one year for full-time students to complete. Certificate coursework is a minimum of 30 credit hours. Students successfully completing this program meet the educational requirements for level-one certification in water

treatment, water distribution, wastewater collection, and wastewater treatment and may also qualify for entry-level employment in water/wastewater utilities or as environmental technicians. The certificate also fulfills the first year of course work required for the ENVT AAS degree.

- The AAS degree offers fundamental background in environmental technology with an emphasis in the water and wastewater career field. This program requires a minimum of 60 credit hours. Successful completion of the AAS degree provides the education necessary to meet the post-secondary education requirements for state of Alaska level-three operator certification. Currently, the degree can only be earned by Alaska residents, although nonresidents can take classes. Plans are under way to get approval for nonresidents to earn degrees in the near future.

Students successfully completing any of the three programs are well qualified to progress to water operator positions and possess the basic knowledge to pass required certification testing. In addition, each of the three course options is applicable as continuing education for existing operators who need to maintain their certification.

Almost all of the ENVT classes are offered through distance learning—a critical feature in reaching across Alaska’s vast landscape and into remote locations. With the exception of a few lab courses currently being converted, the program is entirely accessible online. This provides 24/7 access so students can participate and complete assignments as convenient and at their own pace within the class schedule for assignments and exams. If a student does not have personal Internet access, he or she can take

## ENVT Through a Student’s Eyes

The University of Alaska Southeast’s Environmental Technology (ENVT) Program is making a difference, as demonstrated by the success of Greg Wagner. Wagner was awarded Alaska’s 2006 Small Water System Operator of the Year. Wagner earned his associate of applied science degree in environmental technology, studying from his home in the remote village of Anaktuvuk Pass in Alaska’s Brooks Range.

The state’s Water/Wastewater Management Association recognized Wagner for his positive attitude, the ownership he takes of his job, and the operator certifications he has earned. The association noted his ability to “see each new problem that develops with his water system as a challenge and an opportunity to use his troubleshooting skills and the knowledge that he has.”

Wagner expressed his appreciation for the opportunities provided by the ENVT program and thanked the faculty and staff of the ENVT program for his achievements. “Without the distance education program, it would have been very difficult for me to

complete my degree,” Wagner stated. “Living in Anaktuvuk Pass, working full time, and caring for my daughter, I just wouldn’t have had the opportunity to achieve this important career goal.” Greg has gone on to pass his level-four exam and credits this recent success in part to the ENVT program.



**Greg Wagner uses the skills he developed in the Environmental Technology Program to ensure high-quality water is delivered to citizens of Anaktuvuk Pass.**



**As the outreach coordinator for the Environmental Technology Program, Tim Anderson recognizes that one of his challenges is to communicate to young people the importance of having skilled people to manage the environmental stewardship of the planet and that careers in the water industry really do make a difference.**

advantage of common-access locations, generally at state-operated schools or one of the many branch campuses of the university.

ENVT is promoted to village high school students and teachers throughout Alaska to encourage students to consider environmental career paths. Outreach is also provided to working adults seeking a new or different career and to mechanically inclined workers seeking career growth.

These programs are a good fit for the 30- to 50-year-old working adult, according to program coordinator Tim Anderson. Courses are web-based and flexible. Online assignments are due weekly and include reading, writing, and discussion components. Anderson's goal is to create "a community

of learners" by challenging students to think as professionals.

Outreach and access are essential components of building the interest and capabilities necessary to attract people to water professions. Anderson is repeating a theme heard often from the AWWA Workforce Strategies Committee. He recognizes that young people do not see the water industry as "sexy" or overwhelmingly lucrative. These careers require understanding of chemistry, biology, and engineering to manage the environmental stewardship of our planet. The challenge for water professionals is to show young people that careers in the water industry and the people who do the work really do make a difference. Programs like ENVT are doing just that.

## Alaska Training/Technical Assistance Center

Another program offered in Alaska is the Alaska Training/Technical Assistance Center (ATTAC), a US Environmental Protection Agency—(USEPA-) funded initiative that provides training and technical assistance to small public water systems. ATTAC's goal is to assist operators in developing, enhancing, and maintaining technical, managerial, and financial capacity of their systems for increased public health protection and sustained compliance with the Safe Drinking Water Act requirements. ATTAC is one of eight regional centers funded by a grant from the USEPA Office of Water. The center at the University of Alaska Southeast in Sitka, Alaska, is a cooperative effort involving three academic

units of the University of Alaska: Sitka, Anchorage, and Fairbanks campuses.

ATTAC services include operator training workshops, development of training materials, technical assistance, applied research, and coordination and promotion of training and career-enhancement opportunities. The training and technical assistance are designed to increase the capacity to operate and manage community water systems, improve technical skills, and promote public awareness of safe drinking water supplies. For more information, visit [www.uas.alaska.edu/attac](http://www.uas.alaska.edu/attac), or contact Nicole Duclos, ATTAC program coordinator at [attac@uas.alaska.edu](mailto:attac@uas.alaska.edu), (800) 478-6653 ext. 7756.



Although this article spotlights a specific program, it is just one of many in Alaska to address these needs. Other programs addressing workforce needs—in ways both similar to and different from ENVT—include initiatives of the Alaska Job Corps, the Native Corporations, the Rural Community Assistance Partnership, the National Rural Water Association, and various private providers. Training and workforce development continue to be needed as the workforce shortage approaches. There are

many innovative programs throughout North America that have been developed to address this imperative need. It is hoped that the ideas in this article will give you a model for developing or enhancing a program for your community that accomplishes some or all of the goals of this program in Alaska.

“Alaska is unique and does have some unique issues, but we have benefited from the experience of successful programs throughout the country. Perhaps some of our training efforts and ideas will be of benefit to others faced with similar challenges,” states program developer Carnegie. For more information, go to [www.uas.alaska.edu/sitka/programs/degree/envt/index.html](http://www.uas.alaska.edu/sitka/programs/degree/envt/index.html) or contact Nicole Duclos, ATTAC program coordinator at [attac@uas.alaska.edu](mailto:attac@uas.alaska.edu), (800) 478-6653 ext. 7756.

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### How You Can Help

The Management Division of AWWA, to which the Workforce Strategies Committee reports, supports the work of this committee in finding ways to assist members in addressing the upcoming workforce challenges. If you know of other solution-oriented programs we can share or if you have an interest in workforce development, we invite you to join the committee by contacting Katie McCain, committee chair, at [mccainkl@cdm.com](mailto:mccainkl@cdm.com) or (214) 707-8120.