



UAA College of Engineering
UNIVERSITY of ALASKA ANCHORAGE



UAA Professional Development
Seminar Series

The Alaska Water-Sewer Challenge

Presented by: Chase Nelson, P.E. (DOWL) and
Heather Gross, P.E. (Summit Consulting)



There are over 3,300 rural Alaskan homes that do not have access to running water or a flush toilet. The Alaska Department of Environmental Conservation, in coordination with tribal, state, and federal agencies, developed the Alaska Water and Sewer Challenge in an effort to develop a better and more affordable way to deliver drinking water, hygiene water, and sewage disposal to unserved homes in Alaska. Phases I and II developed concept designs; Phase III included the construction and operation of a prototype system for a period of 9 months. Three teams participated in Phase III using different treatment technologies: UAA, DOWL, and Summit. This presentation will describe the approach, results, challenges and take-aways experienced by the DOWL and Summit teams in developing prototypes to address every use provided by a piped system: a source of potable water for drinking and cooking, a toilet and blackwater system, hygienic water for hand washing, showering, toilet flushing, and cleaning, and a system for treating graywater and reusing for hygiene purposes.

Chase Nelson joined DOWL 10 years ago and currently leads its rural development group, working on water and sanitation projects in Alaska's rural communities, and lesser developed parts of the world. He is an avid volunteer with Engineers Without Borders and Habitat for Humanity, and loves to travel and work directly with the communities. Previous clients include the Alaska Department of Environmental Conservation- Village Safe Water, the cities of Bethel, Emmonak, Kotzebue, Thorne Bay and Craig, and many tribal health organizations and governments.

Heather Gross, P.E. is a civil engineer with 14 years of experience designing water and sewer systems for rural Alaska communities. In addition to the Alaska Water and Sewer Challenge, her recent projects include the Buckland Water and Sewer System, and Preliminary Engineering Reports for various water and sewer improvements. She received her degree in Environmental Engineering at Montana Tech, where her coursework also included hydrogeology and groundwater flow modeling.

Friday, February 9, 2018
11:45 am - 12:45 pm
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