Water Innovations for Healthy Arctic Homes Conference
September 18 – 22, 2016
Anchorage, Alaska

Summary
The U.S. State Department has included a proposal submitted by the State of Alaska's Department of Environmental Conservation (ADEC) to be carried out in conjunction with the U.S. chairmanship of the Arctic Council (April, 2015 – April, 2017). ADEC in coordination with an interagency planning group is organizing an international conference to address the challenges associated with providing *Safe and Affordable Access to Household Running Water and Sewer in remote Arctic communities* in order to explore avenues for improvement. This conference will be taking place from September 18 – 22, 2016 in Anchorage, and has been named the **Water Innovations for Healthy Arctic Homes** (WIHAH) Conference.

The conference is jointly funded by the Alaska Department of Environmental Conservation, the U.S. Environmental Protection Agency, the U.S. Department of Agriculture – Rural Development Program, the U.S. Arctic Research Commission, the Centers for Disease Control & Prevention (CDC), and the U.S. State Department.

Background
In 2015, the U.S. State Department called for project proposals for the current U.S. Chairmanship of the Arctic Council. ADEC proposed a project where member countries and organizations would work together to focus on the challenge of developing *Safe and Affordable Access to Household Running Water and Sewer in remote Arctic communities*. The conference is included in the Sustainable Development Working Group (SDWG) work plan for 2015-2017 and is being tracked by the Arctic Human Health Experts Group, an multinational advisory group to the SDWG. This initiative arises from the recognition that persons living without in-home running water and sewer services suffer higher rates of infectious diseases. Improved access to sanitation services could reduce many of the health disparities suffered by rural Arctic residents.

Remote locations, harsh weather, and high transportation and fuel costs make building and operating community wide (centralized) water and sewer systems in the Arctic extremely expensive. Construction costs often exceed available government funding and cash strapped rural communities are hard pressed to keep centralized systems running. Unless alternative individual household (decentralized) technologies are implemented, many Arctic and subArctic residents may never have indoor plumbing. This situation is not isolated to Alaska. In Canada, Russia and Greenland there are an estimated 1.7 million homes that could potentially benefit from alternative sanitation technologies.

Each Arctic nation and remote community contends with the challenges of providing water and sewer service to residents in a different way. Regulations vary considerably among nations, and in some countries allowances are made in order to make running water and sewer more feasible. Other countries have elected to relocate homes or subsidize the cost of operating sanitation systems. Regardless of how these challenges have been approached, there is a need for the international Arctic community to work together on technologies that will cost less to build and operate.

Objective of the Project

The conference addresses four of the six SDWG's thematic areas including Arctic Human Health, Arctic Socio-Economic Issues, Energy and Arctic Communities, and Adaptation to Climate Change. The circumpolar conference will bring together engineers, health experts, researchers, and policy makers to discuss health benefits, challenges and solutions associated with making running water and sewer in small Arctic and Sub-Arctic communities safe, affordable and sustainable. Health care costs and benefits associated with various levels of Arctic and Sub-Arctic water and sewer delivery will be examined. A comparison of technical approaches and the different governance and regulatory frameworks and approaches utilized by Arctic nations will be discussed together with problems and solutions regarding the potential impact of climate change on sanitation infrastructure in the Arctic and Sub-Arctic.

ADEC will present information about **The Alaska Water and Sewer Challenge Project**, a multi-year research and development effort started in 2012 which focuses on decentralized water and wastewater systems. By the fall of 2016, three pilot systems will be available to demonstrate at the conference, where developers will interact with experts from throughout the Arctic to gather input on their ideas. Information about similar projects in Alaska and relevant initiatives from federal agencies will also be showcased.

Anticipated Outcomes

- Discussion of potential climate-related vulnerabilities on Arctic and Sub-Arctic water and sanitation services.
- Showcase of innovations and ideas. Exchange of ideas regarding regulatory approaches and flexibility regarding small community infrastructure.
- Conference proceedings to include current status of access to household running water and sewer in Arctic and Sub Arctic communities, comparative health data for water-related conditions measured in Arctic Nations, climate-related vulnerabilities for delivery of water and sewer services in the Arctic, conclusions and recommendations.
- Formation of work groups to continue collaborations on Improving Health through Safe and Affordable Access to Household Running Water and Sewer beyond 2017.
- Enhanced international participation for Improving Health through Safe and Affordable Access to Household Running Water and Sewer.
- Publicity about these challenges will help to inform policy makers and non-government organizations, which in turn, could help in funding future efforts.
- This project has been designed to result in benefits for residents of small remote communities throughout the circumpolar north. These benefits include an enhanced understanding among government agencies, engineers and health experts about different approaches to providing household running water and sewer services.

Conference details

Dates: September 18 - 21, 2016 Location: Anchorage, Alaska.

Target audience: arctic engineering experts, health professionals, end users in arctic communities, academic institutions, regulators and policy makers.