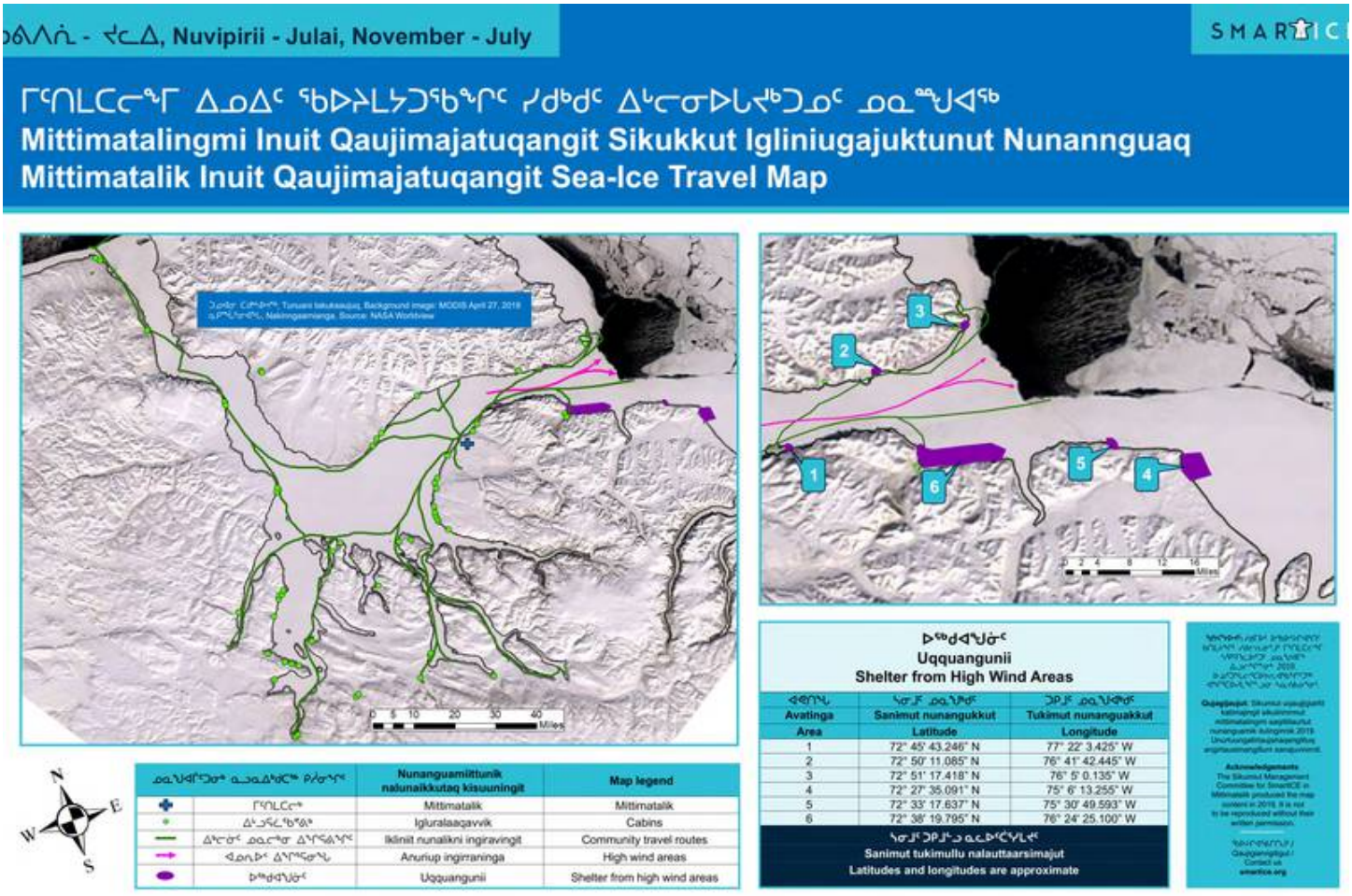
SmartICE expanding into creating sea ice maps for safe travel

Evan Careen (evan.careen@thelabradorian.ca)
Evan Careen/Local Journalism Initiative Reporter (evan.careen@thelabradorvoice.ca)
Published: Feb 26 at 6:40 p.m.
Updated: Feb 27 at 6:27 a.m.



This sea ice travel map made in 2019 for Pond Inlet in Nunavut is an example of the maps SmartICE will create for all of the areas it operates in, including Labrador. - Courtesy of the Sikumiut Management Committee

Maps will contain Inuit terminology and landmarks

Being innovative and doing things differently isn't new for SmartICE — since the social enterprise began in a basement at Memorial University in 2013, it has to come up with new technologies and found ways to integrate into the northern communities it works in, while bringing traditional Indigenous knowledge into what it does.

What SmartICE does is provide data on sea-ice thickness and local ice conditions to 23 Inuit communities in Labrador and the Arctic. The company has a production facility in Nain where it teaches Inuit youth how to build the technology it uses, which has been a great success so far.

Now, thanks to a US$500,000 grant from the Climate Change Resilience Fund, SmartICE is developing a new holistic program to provide Inuit youth with the skills to create ice travel safety maps using satellite imagery and Inuit sea-ice terminology.

Trevor Bell, the founding director of SmartICE, said the need for the maps had been identified by the communities and will address what is seen by residents as a gap in service and knowledge.

Bell said there currently are sea-ice charts created by the federal government for shipping purposes in the Arctic, but they don't meet the needs of people travelling on sea ice for a number of reasons, so that's where these maps will come in.

The Sikumik Qaujimajjuti (which roughly translates to "tool to know how the ice is") project will train the company's community operators to make maps at the right temporal and spatial scale using

Inuktitut terminology and traditional knowledge of the ice, combined with SmartICE observations and satellite imagery.

The satellite imagery already exists, Bell said, and SmartICE will use the same source material as the government, but through a different lens. While it would be possible to train the federal ice analysts to make maps at the right scale for communities, he said, in reality many of those analysts have never been on community sea ice before.

“They probably have no idea what it’s like to travel on the ice and therefore it’s not appropriate. The community wouldn’t trust those maps made by somebody else,” Bell said. “When it’s made by one of their own, using their own knowledge, using their own language, using their own observations, that’s something that’s really useful for communities.”

Rex Holwell, the SmartICE Northern Production Centre and regional operations lead for Nunatsiavut, will run the program in Nain, and is learning how to make the maps.

Holwell said people out on sea ice are using topographical maps on their GPS devices, and these new ice travel safety maps will be a significant improvement.

Holwell said the technical skills the youths will learn in the community will be transferable to other work, similar to the program offered at the northern production centre in Nain, and will help them gain more traditional knowledge.

“The ice knowledge my grandfather had isn’t necessarily as embedded as it should be in my son, for example,” he said. “I have freezers full of food, we have food storage here in Nain, so that ability, that need, of travelling on the sea ice is not there for the younger generation.”

Bell said that gap in knowledge was highlighted by Inuit elders and was part of the impetus for this project. Using Inuit terminology on the maps will also help in that regard, he said, as well as add more nuanced descriptions.

In western science there are about 15 words that describe different types of ice, he said, and the terms are designed with the idea of informing a ship captain the easiest route through the ice. In Inuktitut there are up over 75 different terms for ice, depending on the region.

“There’s different terminology for different seasons, for freeze up, the dark season, break up, and those words may be a single Inuktitut word but to the people who hear or read it, it describes a feature, tells them what season it’s in, probably tells you what the weather was likely recently or tells you about safety,” he said. “Terminology is so rich and it’s so crucial to strengthen that traditional knowledge and terminology because as Inuit say, when you’re out on the ice that’s what keeps us safe.”