

Arctic Community Engineering – Planning for Change

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Background

The Alaska District of USACE and CRREL have been awarded funding through the USACE Silver Jackets Program, to create building standards for Arctic Communities, in this case specifically Alaska villages. The building standards are focused primarily on foundation types and methods to better resist permafrost degradation, flooding, and coastal erosion.

Many entities are already working to improve Village climate change sustainment. These include State of Alaska, USACE, FEMA, NOAA, NREL (CCHRC) BIA, ANHTC, Regional Corporations, Village Corporations, Tribes, Boroughs, UA...to name a few.

Unfortunately, we are experiencing that a gulf exists between creating low cost and effective solutions for the village economy, and the engineering experts who have the experience and training to create robust designs for changing conditions. Unfortunately engineering experts find they are not in a position to provide untried, novel designs, as these may pose liability issues the expert is unwilling to accept. There is little doubt the Arctic Engineering community can provide lower cost, more easily transported and constructed designs, which will provide climate change robustness for village new growth, reconstruction, and relocation. Repair and mitigation methodologies are also needed for emergencies after natural events such as flooding, coastal erosion, permafrost degradation, and earthquake.

We believe the time is now to bring together the collective Arctic Engineering community to:

- 1) Identify pathways to create a means for gathering expertise and providing information to the villages. Perhaps this means creating an Arctic Community Engineering Working Group or Panel.
- 2) Determine immediate solutions which have low risk and high probability for success.
- 3) Determine how the Engineering WG can interlace with existing entities (identified above) without overstepping or doubling efforts.
- 4) Determine longer term, perhaps novel solutions which have ability to provide robust Arctic community climate resilience.

We would greatly appreciate the opportunity to conduct a panel session during ICCRE 2024 to present this idea, discuss with experts, and ultimately walk away with a game plan for establishing this Engineering WG. We understand session availability and time slots may be tight and/or compete with other sessions already planned. If possible, at a minimum we would appreciate to be a portion of another session. The Silver Jackets group and the entities above will be meeting in a sidebar TBD during the ICCRE conference.