Arviat Climate Change Community Engagement: 2014

Summary Document

SUMMARY OF ACTIVITIES

Community engagement activities were held in Arviat from August 25 to 29, 2014 with relevant stakeholders, to gather and share information on how permafrost is shifting in Arviat. Discussions focused on how infrastructure is affected by changing permafrost and how these changes influence current and future development in the community. These activities engaged members of the community, including the Hamlet of Arviat, local businesses, the housing sector, elders, and youth. The consultations are part of a larger Government of Nunavut (GN) led project to map the suitability of land for future development in seven Nunavut communities. The GN is working with project partners, including Memorial University of Newfoundland (MUN) through ArcticNet, Nunavut Tunggavik Incorporated (NTI), and the Arviat Wellness Centre. The overall goal of the project is to consider climate change impacts on our communities and to develop adaptation measures that deal with these changes.

MEETINGS WITH HAMLET, LOCAL BUSINESS OWNERS, AND HOUSING DECISION MAKERS

Project partners (see page 4 for complete list) met with stakeholder groups who work in the planning and development of land in Arviat. The GN shared preliminary results of the land suitability map developed for Arviat. This map shows how the ground is moving and ranks land into suitability classes based on ground stability. The MUN team described their ongoing research on landscape hazard mapping in Arviat. The Hamlet of Arviat described past experiences in developing land and the local challenges for site selection and preparation. The business sector described the impacts of permafrost on their buildings and showed interest in learning more about adaptation measures for new building design. The Nunavut Housing Corporation (NHC) outlined their role in infrastructure design and construction in communities and the constraints imposed by budgets, timelines, and available knowledge on ground conditions.

Partners and stakeholders discussed the suitability of future development areas and the rationale for choosing one area over another within the community (for example, areas that would be challenging engineering-wise, too close to sewage treatment areas, too costly to service, etc.). Two topics that got a lot of attention during meetings were foundations and building design.

Foundations: Discussions around different foundation types showed the following: most groups find pile foundations to be ineffective, space frames to be somewhat effective (but expensive), and screw jacks and pad and wedge foundations to be most effective (although an older technology).

Building design: Groups discussed the standardization of building design in Nunavut, and suggested that buildings must be designed for different community environments across the territory, instead of a 'one-fits-all' housing design for all communities.

The meetings also had discussions around the decision-making process and the various steps in planning and development, including: land zoning, land survey, lot preparation, and building construction. Limitations were mentioned such as fiscal spending timelines, short construction seasons, and unclear decision-making pathways. It was clearly identified by all groups that a lack of clear communication between many of the key decision-makers involved in planning and construction has created challenges, especially during times of critical decision making.

YOUTH ENGAGEMENT ACTIVITIES

Youth engagement activities on climate change and permafrost were held throughout the week. Activities were held at the elementary, middle, and high schools. Discussion topics included: introduction to climate change, what is permafrost, and what are tools for keeping buildings secure from shifting permafrost. Depending on the age group, students participated in hands-on activities, including building model houses on thawing permafrost to see how the houses withstand the changes.

ELDER CONSULTATIONS

Elders noted that the landscape has drastically changed, especially within the community limits and along the coast. They associated these changes with the development of the community and the significant disruptions to the natural drainage areas. They also noted that the newer houses in town appear to be experiencing more problems than many of the older homes. They discussed their experience with increased wall cracking and shifting house foundations,

typically requiring repair work to be done in both the spring and fall when the ground is thawing and freezing, respectively.

COMMUNITY-WIDE ACTIVITIES

Community events were held throughout the week to ensure information was made available to the public, and to provide different methods to engage Arviarmiut in the project. The Arviat Wellness Centre interviewed project partners on two community-wide radio shows, which also featured a call-in Q and A session.

Additionally, an information night was hosted for the public and featured several presentations on the project and the premiere of a short documentary on the project developed by the Arviat Youth Media team. Individuals were also invited to participate in a survey that asked opinions from community members on the effects of climate change and shifting permafrost on their community. Results from the survey show that community members are interested in learning more about the effects of permafrost on infrastructure and how to plan for these changes.

CHALLENGES WITH BUILDING IN ARVIAT

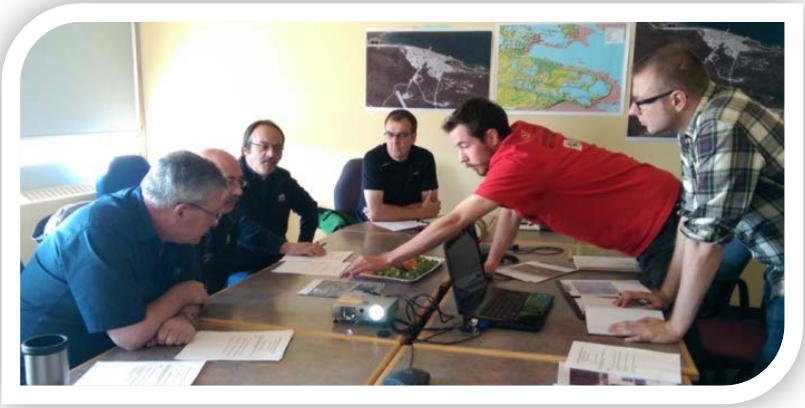
Throughout the weeklong discussions, key challenges were identified around the planning, development, construction, and maintenance of infrastructure in Arviat. They include:

- High demand for housing, putting pressure on timelines time for planning and construction of new infrastructure developments;
- No accounts of hitting bedrock, making the use of pile foundations ineffective for the terrain type in Arviat;
- Arviat is “built in a bowl”, which limits natural drainage and requires that building land be created from in-filled ponds and wetlands; and
- Multiple agencies and tight timelines in the infrastructure development process limit effective co-ordination and planning.

FUTURE CONSIDERATIONS

There is great momentum for continued integration of climate change research and local knowledge into community planning practices. This project identified challenges with community infrastructure planning and raised awareness of potential climate change impacts on future development. It also emphasized the need for continued partnership, knowledge sharing, and establishment of best practices across all levels of decision-making. In order to adequately incorporate climate change adaptation measures into community planning, the following considerations were gathered from stakeholders and project partners:

- The GN will continue to update stakeholders during the remaining years of the hazard mapping project and will continue to facilitate discussions on how to incorporate adaptation measures into community planning
- The GN, the Hamlet of Arviat, and NHC will continue discussions around the planning and development processes. The MUN team will work with partners and stakeholders to map the decision making processes from initial community planning to final building construction to help facilitate effective communication and collaborative decision making where useful. In addition it will be important to:
    - Ensure clear roles and responsibilities
    - Identify clear timelines at all decision-making steps
    - Determine where new information is required (i.e. best practices for building on permafrost in Arviat) and inform relevant parties on their data needs
- Identify geotechnical expertise where needed to help with knowledge gaps (e.g. drainage concerns).
- Share existing resources and databases relevant for development in Arviat with all project partners and stakeholders (e.g., geotechnical reports, permafrost data, community plan and zoning bylaws and other planning documents). These should be housed centrally online.
- Continue to engage teachers at all school levels; conduct educational outreach similar activities in future communities.



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