



Hall Beach Nunavut

Summary Climate Change Adaptation Action Plan

March 2008

This summary plan was prepared by Christine Callihoo of Hemmera and Dan Ohlson of Compass Resource Management in partnership with the *Municipal Corporation of Hall Beach* and the *Hall Beach Climate Change Adaptation Steering Committee*.

The project was implemented in partnership with the Canadian Institute of Planners, Natural Resources Canada and with participation from the Climate Change Coordinator with the Department of Environment, the Government of Nunavut.

Cover: High-resolution QuickBird satellite image of Hall Beach and vicinity, courtesy of Natural Resources Canada. Contains material copyright Digital Globe.

EXECUTIVE SUMMARY

Like most Arctic communities, Hall Beach is already experiencing the effects of climate change, and there are further changes projected. Both temperature and precipitation are projected to rise steadily over time, with the most significant increases occurring during the fall and winter seasons. Further concerns relate to the possibility of increases in climate variability and extreme events. Perhaps most importantly, the extent of sea ice in the Hall Beach region is projected to decrease steadily over time and the trend toward later freeze up and earlier melt is expected to continue.

These projected climate changes are of considerable concern in the community. Through a combination of research and consultation, priority impacts have been identified with respect to infrastructure and community well-being:

Potential Infrastructure Impacts

- Shoreline erosion
- Building integrity
- Water supply and sewage disposal

Potential Community Well-being Impacts

- Travel and hunting safety
- Food security
- Emergency preparedness

In order to initiate local-level adaptation measures, representatives from the Canadian Institute of Planners, in partnership with Natural Resources Canada, worked with the Hall Beach Climate Change Adaptation Steering Committee to develop this Climate Change Adaptation Action Plan. The action plan outlines a series of research, monitoring, planning and implementation activities to address the identified potential climate change impacts. Primary responsibilities for each activity have been identified and an initial priority rating has been included.

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1.0 ACTION PLAN

The Hamlet of Hall Beach Climate Change Adaptation Action Plan provides the opportunity to integrate traditional community knowledge and scientific research on climate change impacts to improve community planning and adaptation capacity working with community decision-makers and the community at large in Hall Beach.

In order to ensure a localized approach to realizing the full potential of the Action Plan, the first suggested priority is to formally recognize the role of the Climate Change Adaptation Steering Committee (Adaptation Committee) with select members of the Hall Beach community able to represent specific interests within the community.

The Adaptation Committee plays a very important role by enabling the Hall Beach community to participate more directly in the decision-making process. The Adaptation Committee will make recommendations to Hamlet Council that reflect the individual and collective knowledge and thinking of the committee, particularly from a citizen perspective.

The Adaptation Committee may also be tasked with isolating potential sources of funding to assist in the implementation and monitoring of the Action Plan. Potential sources of funding may include:

- 1) International Polar Year (http://www.ipy-api.gc.ca/index_e.html)
- 2) Indian and Northern Affairs Canada (http://www.ainc-inac.gc.ca/clc/adp/index_e.html)

Further to the formal recognition of the Adaptation Committee by all levels of government, is the allocation of sustained funding in order to enable to Adaptation Committee to carry through on specific tasks in the Action Plan including:

- Engage at the school level providing tools such as teaching modules.
- Provide relevant and appropriate information to the community via the local radio and potentially through a proposed monthly newsletter.
- On-the-ground, ongoing monitoring in partnership with NRCan to allow for an increase in the opportunity for skill development.

The following table (identified as Table 6 in the *Hall Beach Climate Change Adaptation Action Plan*, March 2008) provides each priority topic identified, and is complimented with the activity (categorized into research, monitoring, planning, awareness-building and implementation) and details, as well as identifying the key department / organization responsible for primarily carrying through on the activity (and further supported by the other relevant levels of government including the Hamlet of Hall Beach) and the level of priority based on the assessment of community requirements.

Table: Action Plan Summary				
Topic	Activity	Details	Responsibility	Priority
Shoreline Erosion	Research	Complete implementation of the coastal impact assessment: <ul style="list-style-type: none"> historical air photo interpretation of shoreline stability near-shore seabed mapping sounding and final assessment of coastal change: processes, rates of change, areas at risk 	NRCan team	HIGH
		High-level feasibility study of technical options: Sea wall, breakwater, beach nourishment, etc.	GN: Community and Government Services	HIGH
		High-level feasibility study of relocation options: Westward, new location to north, to Igloolik, etc.	GN: Community and Government Services	HIGH
	Monitoring	Implement a program of local observations during storm surge events, including: <ul style="list-style-type: none"> Event dates, times, and durations Wave height, direction wave period Maximum run-up level on beach and time Photos from same point for each storm 	HB CC Adaptation Committee (support from NRCan team)	HIGH
		Implement a program of sea ice monitoring, including: <ul style="list-style-type: none"> Date and times of freeze-up and break-up Height, length and extent of onshore movement of ice pile-up ridges Photos 	HB CC Adaptation Committee (support from NRCan team)	HIGH
	Planning	Discontinue issuing any new lots along or near the beach.	Hamlet of Hall Beach	HIGH
		Identify necessary zoning changes for next Official Community Plan revision.	HB CC Adaptation Committee / CGS	HIGH
		Determine a safe setback for zoning.	Hamlet of Hall Beach	HIGH
		Identify potential sites for long term relocation: Westward expansion, new location to north, to Igloolik, etc.	HB CC Adaptation Committee / CGS	MED
	Building Integrity & Electricity Distribution	Research	Investigate potential to get involved in NRCan's Permafrost Monitoring Network	NRCan
Investigate whether alternative building support /anchoring systems are necessary: <ul style="list-style-type: none"> get surficial geology maps investigate alternative technologies 			HB CC Adaptation Committee / CGS	LOW
Collect historical records on wind speed and analyze for trends.			NRCan / HB CC Adaptation Committee	MOD
Monitoring		Establish program for local observations including: frequency, timing and extent of high wind events, etc.	HB CC Adaptation Committee	HIGH

Table: Action Plan Summary (continued)				
Topic	Activity	Details	Responsibility	Priority
Water Supply	Research	Consult NRCan Community Watershed Assessment project team members on how to conduct a high-level water budget assessment.	NRCan	MED
	Monitoring	Formalize and expand the monthly water quality testing program to test for contaminants.	HB CC Adaptation Committee / CGS	HIGH
Travel and Hunting/ Fishing Safety	Planning	Develop a marked travel route to Igloodik (consider building inukshuks out of used barrels).	HB CC Adaptation Committee / CGS	HIGH
	Planning	Improve access to navigation and communication equipment (e.g., additional GPS, radios, satellite phones, emergency beacons, etc.) Provide training in use	HB CC Adaptation Committee	MED
	Planning	Investigate the purchase of bigger boats		MED
	Planning	Establish a youth training program with a combination of traditional (IQ) and new knowledge: <ul style="list-style-type: none"> • Historical weather signs (IQ) + New CC predictions • Traditional hunting practices + New requirements • Appropriate clothing & Technology use (e.g., GPS, satellite phones, etc.) 	HB CC Adaptation Committee	MED
Emergency Prep.		Need to identify a central meeting location and stock with emergency supplies.	HB CC Adaptation Committee	MED
Energy Efficiency	Research	Investigate how to apply for 're-heat' (CO-gen) funding.	Hamlet of HB / CGS	MED
	Implementation	Develop and launch a community awareness program, based on the Wah Ti example in NWT.	HB CC Adaptation Committee / CGS	MED

2.0 NEXT STEPS

The *Hall Beach Summary Climate Change Adaptation Action Plan* process has provided the 'first steps' for guiding future development and decision making by Hall Beach senior staff and elected council.

The following factors are seen as essential to the effective implementation of the Adaptation Action Plan:

- The establishment of the Climate Change Adaptation Committee;
- The long-term commitment by the Hamlet Council and community members to the implementation and monitoring of the Adaptation Action Plan;
- Recognized leadership;
- Resources including financial, physical and human;
- Community and political support;
- A realistic appraisal of the current situation within the community;
- A desire to build on the accomplishments and efforts of the past;
- An inclusive process (everyone is welcome to participate) and the ability to work as a team;
- A strong commitment and the ability to take the required time to work through the various stages of the Adaptation Action Plan; and,
- A commitment to use the plan as a tool and to modify and make adjustments as required ('a living plan').

The above factors have been shown to be essential to any successful implementation process, as well as, and perhaps most importantly, the commitment of at least one Hamlet member to serve the primary role in the planning and implementation process.

The conclusion of the Adaptation Action Plan serves as a new beginning for the Hamlet, providing the priority implementation requirements to prepare the Hall Beach community for current and future climatic changes.