

# CLIMATE CHANGE ADAPTATION ACTION PLAN

## CLYDE RIVER, NUNAVUT



Hamlet of Clyde River  
Ittaq Heritage and Research Centre

*In partnership with*

Canadian Institute of Planners  
Natural Resources Canada

## Clyde River Climate Change Adaption Action Plan

The community of Clyde River has prepared this plan to better prepare for changes that have started or might happen as a result of climate change. It is understood that this is a first step in a long journey to help the community adjust to climate change. Future steps will be based on new research, knowledge and experience obtained by the community.

The plan includes three parts; the desired results [goals], the methods that will be used to achieve the desired results [strategies] and the specific steps that will be taken [an action plan]

### What are our desired results [goals]

- ✓ Clyde River shows the ability to effectively prepare and adapt to climate change
- ✓ Effective partnerships between the community and decision makers and scientists in the territorial and federal government
- ✓ Our knowledge is shared with other communities and organizations
- ✓ Clyde River is seen as a model learning centre in preparing for climate change
- ✓ Scientific research that contributes to the community.
- ✓ The people of Clyde River are informed of the local issues regarding climate change

### How will we achieve our desired results [strategies]

- Develop and use better information to guide the future physical development of Clyde River.
- Review our community land use plan with new information on climate change issues
- Equip and train our residents in methods to increase their safety while out on the land.
- Develop and implement a tourism plan to enhance the community as an attractive destination for visitors and tourists including cruise ship passengers.
- Record our knowledge and experiences with changing travel and hunting conditions.

- Attend meetings and conferences to share our knowledge, promote our community and learn from others.
- Continue to support the research being done by Natural Resources Canada in a way that benefits both parties

**What- specific actions are we taking [action plan]**

See attached table for our current action plan. We will review progress on our action plan on a regular basis and update our action plan every fall. Ittaq will assume the responsibility to monitor progress made in carrying out the actions and to start the annual review of the action plan.

## CLYDE RIVER CLIMATE CHANGE ADAPTATION ACTION PLAN

#	Action	Issue	Results	Resources
<i>Hamlet of Clyde River</i>				
A	Consult with Power Corporation to brace electrical poles by piling boulders at the base of the poles	Unstable electricity poles due to changing permafrost	All electrical poles have been reinforced	Use heavy machinery to collect and lay down boulders. Seek funding from Power Corporation
B	The community plan will be amended, if necessary, to identify areas suitable or unsuitable for construction in the townsite because of existing and future soil and terrain conditions.	Changing permafrost conditions	Construction will be encouraged in areas where the soil/terrain conditions are best able to support long term development. Construction will be discouraged away from areas that may become more unstable because of possible long term permafrost changes.	Obtain detailed GIS mapping from Natural Resources Canada. CGS funding to review and update community land use plan
C	Identify and map areas that may be affected by rising sea levels. Amend if necessary community plan and zoning bylaw. Do not issue any long term leases in affected areas.	Rising sea levels	No new buildings in areas that may be below or near possible future sea level.	Hamlet to determine elevation of key sites along shoreline. Hamlet to consider this issue when updating community plan and zoning bylaw.
D	Identify and map on land use plan a second road access to hamlet from airport road	Rising sea levels	If the existing access road ever becomes threaten by rising sea levels, the Hamlet can build another road that fits well into the community layout	CGS funding to review and update community land use plan

#	Action	Issue	Results	Resources
E	Review all new building and land development proposals to minimize snow drifting problems	Increasing precipitation and, severity of storms and more surface drainage issues	All new buildings and roads will be designed to reduce snowdrifting	Ongoing Hamlet review of development applications
F	Prepare simple guidebook on snowdrifting for hamlet and developers to use when making building decisions	Increasing precipitation and, severity of storms and more surface drainage issues	Hamlet councillors, staff and builders making informed decisions	Obtain collection of material from CIP team Funding support from Nunavut Association of Municipalities to undertake project
G	Hamlet to document existing snow management situation, including updating 1992 snowdrifting mapping	Increasing precipitation and, severity of storms and more surface drainage issues	Understand the financial costs of snow removal and winter road/driveway maintenance. Update snowdrifting mapping and place information in digital format. Learn how snowdrifting patterns have changed over time.	Elisha to calculate annual hamlet costs for snow removal. Elisha to update 1992 snowdrifting map. Seek funding from CGS to have map information plotted in AutoCAD/GIS format information
H	Travel and learn how City of Iqaluit deals with snow management	Increasing precipitation and, severity of storms and more surface drainage issues	Better knowledge of the actions the Hamlet can do to handle snow management issues	Seek travel funding from CGS for one trip to Iqaluit
I	Support NRCan to install permafrost monitoring stations in the community	Changing permafrost conditions	Understand below ground temperatures and how this may affect buildings and earthworks	NRCAN
J	The design of future infrastructure should incorporate the potential for significant changes to permafrost	Changing permafrost conditions, higher temperatures, increased precipitation and severity of storms	Buildings and earthworks designed and constructed to take into account	Collaborate with GN Housing Corporation, GN Community Government and Services and Nunavut Association of Municipalities
K	Maintain and monitor surface drainage system Prepare community drainage plan for increased surface runoff	Increasing precipitation, surface drainage issues and changing permafrost conditions	Existing system properly maintained to prevent blockades and overflows New culverts are sized to allow for increased water flows	Obtain forecasts from NRCan about future water volumes

#	Action	Issue	Results	Resources
L	Train Hamlet staff on basic use of geographic information system (GIS)	Take advantage of new information and technologies	Hamlet able to use, print and add to GIS information to be provided by NRCan	Provide in house training. Obtain software. Collaborate with NRCan to determine how and when training should be provided.
M	Review and update emergency measures plan to take into account climate change	Increased severity of storms, uncertain ice and travel conditions	Community has well developed responses. Quicker emergency responses	In collaboration with LHO and RCMP
N	Conduct energy audit and plan for municipal buildings and facilities	Reduction of greenhouses gases created due to hamlet operations	Reduce greenhouse emissions Save dollars hamlet pays for fuel and electricity Set example for other community organizations	Hamlet to seek funding from GN
O	Provide broader coverage of communication equipment outside of town for FRS, CB, HF and radio	Uncertain ice and travel conditions. Increased risks to personal safety. Need for quicker and better sharing of information	Residents able to obtain and pass on information on travel and ice conditions as well as emergency situations Extend the range of current communication equipment	Hamlet with HTA and Search and Rescue Committee
<b><i>Ittaq Heritage and Research Centre</i></b>				
P	Provide first aid training using traditional Inuit methods on an ongoing basis	Increased severity of storms, uncertain ice and travel conditions. Increased risks to personal safety	Residents better able to perform first aid and to use available resources	In collaboration with first aid trainers
Q	Self-rescue training and tools (for falling through thin ice)	Concerns about people falling through thin ice; lack of training or tools available for self-rescue; few or no snowmobile suits that help people float in water	People are able to rescue themselves if they fall through the ice; people have ice picks to take when they go out on the land	Training in collaboration with Rangers and/or Hunters and Trappers; ice picks obtained through GN funding, sponsorship, or home-made; floating snowmobile suits obtained through GN funding or sponsorship

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R	All people going out on the land will use GPS to help with navigation	Uncertain ice conditions, changing landmarks and severe weather	Fewer people becoming lost or disoriented Safer travel Quicker emergency responses	Training and GPS units provided. Funding will be sought from the GN; training could be done in collaboration with HTO
S	Collaborate with NRCan to continue local research on climate change	Insufficient knowledge about local implications of climate change	Better knowledge and decision making based on scientific studies of local conditions	Natural Resources Canada
T	Share local knowledge and research with other communities and organizations about community adaption actions	Insufficient knowledge about implications of climate change and effective adaption actions	Learning from other communities Introduce new ideas to community Promoting Clyde River	Seek funding support for travel to other communities
U	Consider climate change when preparing tourism strategy	Concerns about viability of tourism (especially tourism dependent on animals such as sport hunting and whale watching)	Tourism strategy (or economic development strategy) speaks to the viability of industries in a changing climate	Ittaq, HTA, and Hamlet to work together when tourism strategy or economic development strategy is being prepared / updated
V	Develop a tourism plan to promote cruise ship tourism	Increasing temperatures and changing ice conditions	Employment and business opportunities Sharing cultural and Inuit traditions	As part of economic development strategy
W	Prepare audio and video tapes of elders speaking about their knowledge and experiences.	Insufficient knowledge about local implications of climate change	Record existing knowledge from elders about	
X	Develop a visitor centre	Visitors including scientists having limited knowledge about the community	Visitors appreciating the culture and heritage of Clyde River	Partner with and seek funding from Government of Nunavut
Y	Training on preferred methods of burying meat	Concerns with long-term illness due to meat poisoning in warm weather or hunters purposely accelerating meat fermentation	Support for traditional Inuit ways; continued safe burial of meat	Training delivered in collaboration with HTO

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Z	Find new <i>aniuvat</i> (snow caches for food storage) in the permanent snow fields	Changing temperature conditions and disappearing snow fields	Enough new <i>aniuvat</i> locations will be found to replace the number of old <i>aniuvat</i> sites lost because of melting snow	Ittaq and HTA to co-ordinate trips of elders and youth to find and document locations of new Aniuvat; possible sponsorship needed for cost of gas for snowmobiles
AA	Poster series about the adaptation plan and specific actions	Insufficient knowledge about the local implications of climate change; need for greater community-based outreach	Greater community awareness about the action plan and how they can participate in adaptation activities	Work with students for a poster competition, possibly in collaboration with the School; sponsorship or GN funding for reproduction of posters; students to distribute posters to the community
BB	GPs mapping of all cabins with emergency supplies in each cabin	Increased severity of storms, uncertain ice and travel conditions. Increased risks to personal safety	People able to easily locate cabins and supplies in times of emergency	Ittaq with assistance from HTA and search and rescue committee
<b><i>Hunters and Trappers Association</i></b>				
CC	Offer GPS units, satellite phones and floating snowmobile suits for rent	Lack of tools; need for an alternative to get expensive equipment other than owning	Resident can access important goods without having to own them	HTO to purchase GPS units and snowmobile suits with funding support from the GN, sponsorship, or both
DD	Pontoons to be available for hunters to borrow for their snowmobiles	Concerns about falling through thin ice; concerns about lost equipment; environmental impact of snowmobiles (gas, oil) in the water	Equipment can be retrieved if it falls through the ice; people do not have to spend money	Pontoons obtained through GN funding or sponsorship
EE	Find new sites that stay cold (for burying meat)	Buried meat may go rotten if the ground is too warm; concerns with long-term illness due to meat poisoning in warm weather; other unknown problems with the meat may occur	Support for traditional Inuit ways; continued safe burial of meat	HTO to organize group of elders and youth hunters to find new sites in summertime



#	Action	Issue	Results	Resources
<i>Other organizations</i>				
FF	Continue to provide public education as needed, about health implications such as bugs, bird flu and other insects	Increasing temperatures	Residents have knowledge and comfort about personal health issues related to climate change	Health Centre
GG	Maintain a regular supply of anti-toxin (botulism)	Lack of immediate ability to treat people that may have been poisoned by spoiled meat	Reduced cases of illness or death from consumption of spoiled meat	Health Centre
HH	Provide general and community specific information to students on climate change		Increased awareness of implications of climate change	School
II	Offer sunscreen and floating snowmobile suits for sale in the stores	Lack of tools available for self-rescue; few or no snowmobile suits that help people float in water	Residents are able to purchase goods needed for the changing environment	Northern Store / Aarruja Development Corporation Store
JJ	Creation of micro-business that regularly offers “country food”	Issues with hunting and fishing due to change in migration patterns and animal population; increasing tendency of residents to depend on store-bought food instead of traditional food	Support for traditional Inuit ways; more people trained in safe food handling; possibility of a new restaurant in Clyde River	Collaboration with HTO to maintain meat stocks in the community freezer; Aarruja Development Corporation to possibly provide seed funding for micro-business
KK	Monitor the supply of emergency rations, fuel and clothing in cabins	Increased severity of storms, uncertain ice and travel conditions. Increased risks to personal safety	Emergency supplies are available at all times in cabins	HTA with assistance from search and rescue committee
LL	Explore options to provide search and rescue equipment that can be used during freeze up and break up	Uncertain ice and travel conditions. Increased risks to personal safety. Need for S&R to be available in all ice and travel conditions	Community has ability to respond to emergencies in periods where ice conditions do not allow for regular forms of travel by search and rescue personnel	Search and Rescue Committee