

## Proposal Template

# Climate Change Preparedness in the North Program AND Climate Change and Health Adaptation Program

For more information on these funding programs, visit these websites:

**CCPN** <https://www.aadnc-aandc.gc.ca/eng/1481305554936/1481305574833>

**CCHAP** <https://www.sac-isc.gc.ca/eng/1536238477403/1536780059794>

This *Proposal Template* is a guide to show what information must be included in your application. Proposals can be completed by using this form directly OR by using another format that is best for you.

### PROPOSAL CHECKLIST:

1. Cover page
2. What do you want to do?
3. Why do you need to do it?
4. Who will you work with?
5. How will you achieve your goals?
6. Workplan
7. Budget
8. Additional details
9. Letters of support
10. Resumes (see note in section 9)
11. Submit your proposal to the regional Climate Change Community Liaison / Research Coordinator AND [aadnc.adaptnord-northernadapt.aandc@canada.ca](mailto:aadnc.adaptnord-northernadapt.aandc@canada.ca)

There is no deadline to apply. *Project Ideas* and *Project Proposals* may be reviewed multiple times in a year. Your regional Climate Change Community Liaison / Research Coordinator can tell you the next review date in your region. They can also tell you about the funding programs, provide support as you develop your project idea and proposal, and review and give feedback on drafts. Please contact them at the numbers below.

SEND YOUR COMPLETED APPLICATION TO THE COMMUNITY ADVISOR FOR YOUR REGION		
<b>Merran Smith – Yukon</b> 867-393-9200 ext 9244 <a href="mailto:Merran.Smith@cyfn.net">Merran.Smith@cyfn.net</a>	<b>Miki Ehrlich – NWT</b> 867-873-8359 <a href="mailto:miki@nwtac.com">miki@nwtac.com</a>	<b>Christina Béland– Nunavut</b> 1-867-975-2524 <a href="mailto:climatechange@qhrc.ca">climatechange@qhrc.ca</a>
<b>Adam Gardner – Nunavik</b> 819-491-7227 <a href="mailto:agardner@krc.ca">agardner@krc.ca</a>	<b>– Nunatsiavut Dennis</b>	

1. Cover page

Cover Page Table

<b>PROJECT TITLE:</b>	<b>Coastal Hazard Assessment in Kugluktuk and Shoreline Evolution Analysis</b>
<b>MAIN CONTACT or PROJECT LEADER</b>	<b>Name:</b> Kimberley Young <b>Organization:</b> Hamlet of Kugluktuk <b>Job title or role:</b> Senior Administrative Officer <b>Mailing address:</b> P.O. Box 271 Kugluktuk, NU, X0B 0E0 <b>Phone:</b> (867) 982-6505 <b>Email:</b> sao@kugluktuk.ca
<b>LEAD ORGANIZATION FOR THE PROJECT</b>	Hamlet of Kugluktuk
<b>COMMUNITY/ COMMUNITIES INVOLVED IN THE PROJECT</b>	Kugluktuk
<b>BRIEF SUMMARY OF PROJECT (2-3 sentences)</b>	<p>The Hamlet of Kugluktuk is seeking support to begin implement Coastal Hazard Assessment in Kugluktuk and Shoreline Evolution Analysis which is crucial to address continuous coastal erosion occurring alongside the riverbanks of the old cemetery site located along the Coppermine River that connect in the Coronation Gulf, and to address coastal changes shoreward of the breakwater along the entire coastline.</p> <p>The Hamlet of Kugluktuk has chosen to partner with the integrated geoscientist team (from POLAR and UQAR). The team has an expertise both in permafrost and coastal studies, and members are experienced of the nature of Climate Change impact in the Arctic and of Nunavut from their previous and current experience conducting study and research around the territory. This project implementation will take two-year phase anticipated in the year 2021-2023 for the purpose of enough time needed to conduct a research that will provide a successful outcome as the coastal erosion in Kugluktuk implicates various causes of environmental activities related to climate change.</p> <p>The outcome of this project will lead to the identification of possible solutions to preserve the old cemetery which holds a sentimental landmark for residents of Kugluktuk.</p>

	The old cemetery area needs a lasting effect of man-made construction in the soon future and this accomplishment will be based on this project's findings.
<b>PROJECT START &amp; END DATE</b>	<b>June 2021-June 2023</b>
<b>AMOUNT OF FUNDING REQUESTED</b>	<b>\$ 287,100.00</b>

## 1. Goals and objectives of the coastal hazard project

### ***1.1 Goals and objectives of the coastal project***

The Community of Kugluktuk is in need of addressing the coastal erosion and possible future environmental hazard that relates to climate change impact which is occurring particularly along the mouth of the Coppermine River that connects in the Arctic Ocean where the Old Cemetery is particularly located. The old cemetery (also called as the “graveyard island”) has more than likely been established since the inception of Kugluktuk (formerly known as “Coppermine”). Preliminary analysis show that the island shoreline is retreating (Fig. 1) constantly, although we still don't know exactly what are the controlling factors. More than 50 m or erosion has been observed since 1950 in some places.

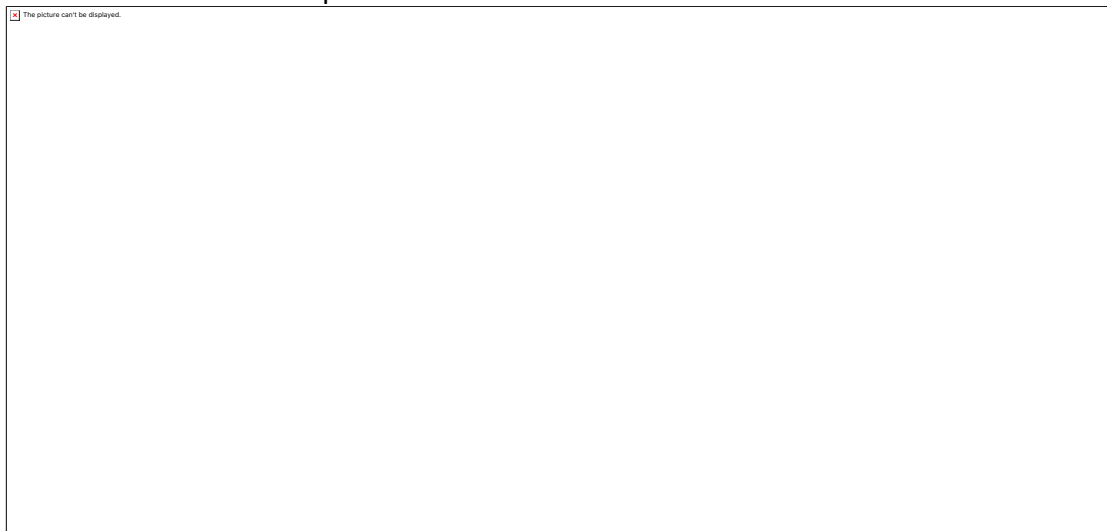


Figure 1. Location of the study area along the coast of Kugluktuk and the Coppermine River. The Hamlet of Kugluktuk is the voice for the community, therefore, partnering with the team of geoscientists (from POLAR and UQAR) to implement a two-year phase of research project in the community planned to be conducted in the year 2021-2023 (following rules and restrictions

against pandemic spread of Covid-19 issued by the Department of Health Government of Nunavut if until this mentioned timeline still applicable).

The main goal of this project is to produce a coastal/estuarine shoreline evolution analysis based on remote sensing analysis and community-based monitoring of the coastline and river banks.

### ***1.2 What is a successful project for Kugluktuk***

A protected old cemetery shoreline along the Coppermine River, the awareness and knowledge of the community and its members to better understand the climate change and its impact, the capacity building it can create within the community and other beneficial effect of this project such as the merge of traditional and scientific knowledge for the community to be resilient facing environmental hazards and the positive effect to the economy in Kugluktuk is the main goal of the implementation of this project.

#### **2. Rationale: Summary of recent scientific research and problems on natural hazard around Kugluktuk**

Multiple natural hazards impact the community and daily activities around Kugluktuk, and climate change introduces major uncertainties in selecting effective adaptation strategies to make the community more resilient to a changing environment. Scientific and participatory research helps us in reaching new development opportunities. For example, over the past 3 years, permafrost researchers from POLAR and ULaval have been studying the permafrost conditions along the ATV trail in the territorial park near Kugluktuk in close relation with community members. In 2019, they expanded the scope of the project to the new access road that is being built by the Hamlet, and will improve access to the park from the community. With this project, the community and scientists wanted to better understand how permafrost conditions, climate warming and landslides are involved in the degradation of the ATV trails and erosion of the banks along the Coppermine River. However, this project only focused on the fluvial/inland component of natural hazards affecting the socio-economic development of Kugluktuk. The main goals were to identify which sections of the trail and the road are more sensitive to damage by permafrost thaw, to find technical solutions to mitigate the impacts of the trails on the tundra and to reduce the effects of permafrost degradation on the trail and the access road. Absolutely no works have been carried out along the coastal and estuarine sections of the community. Still, various major hazards are affecting the coastline and human infrastructure and heritage are at stake.

Since we are in a zone of continuous permafrost, permafrost degradation is likely also playing an important role in the erosion processes along the coast. The knowledge and data acquired over the past 3 years may be helpful to address the coastal erosion problem. As discussed during preliminary discussions with CIRNAC representatives, POLAR and UQAR scientists, and Kugluktuk's EDO and SAO, coastal erosion around Kugluktuk seems to be the result of complex processes that needs to be addressed prior any decision about selecting adaptation strategies and land management. As seen on Figure 2, which is a drone picture taken from the cemetery, the unconsolidated cliff is actively eroding but the driving factors are not understood. However, we clearly see the presence of ice lenses exposed to hydrodynamic (waves, water levels) and subaerial processes (freeze-thaw cycles, precipitation, air and ground temperature). The role of sea ice and ice dam at the river entrance could also be important and needs to be addressed. Coastal and estuarine evolution around Kugluktuk is therefore not just a matter of eroding

sedimentary cliffs, or potential changes in wave climate or river dynamics, it is also potentially highly affected by permafrost degradation.



Figure 2. Pictures taken from a drone flight over the cemetery. Source: Kugluktuk SAO and <https://dnvphoto.zenfolio.com/p377049475/he9d89a3b#he9d82490>.

Coastal erosion in general along the coast was considered not extreme by recent works from the Geological Survey of Canada. However, we should keep in mind that the last long-term analysis was made in 2012 for the years 1950 – 2008. Therefore, recent shoreline trends are not known. It should be noted that during the 50s, the imagery resolution was not ideal. New technologies have been available recently to update the coastline evolution analysis, which makes it possible to establish new trends in shoreline behavior for the entire region: not just with satellite imagery, but also with field monitoring including both community members and scientists. There is a need to understand coastal processes and hazards on the continental side, but also along the islands, where the old cemetery is located. These islands have never been properly studied in terms of coastal processes, such as the slumping and sediment avalanching that we can see on the pictures (Fig. 1), but in fact it has been conclude in a 2012 report from GSC that the islands could be disappearing. This project would be the first to bring some understanding of what is happening with these islands, and therefore to help in thinking about proper land-management for a more resilient community. We would implement a research project that would gather many data and traditional knowledge, and these data would serve as inputs to validate coastline models. At the end, these models could be used to select proper adaptation strategies among many possibilities, not just referring to structural, immediate response using man-made protection, but also in terms of long-term expectations for the future of Kugluktuk. It should be noted that unlike other arctic communities, Kugluktuk (and Cambridge Bay) will potentially experience a 50 cm sea level

rise by 2100 (James et al., 2009), which is certainly to be taken into account for land-management in Kugluktuk. Extreme erosion has been seen along the river banks where the old cemetery is located, reaching more than a meter per year. This project will be a great opportunity to help in better understanding this dynamic and the coastal impact that hard protection induces to our coastline (near the breakwater) in a context of changing sea levels, storm impacts and degrading permafrost.

### 3. Project justification

#### **1. Why is this project needed? How do you know about this need?**

With this research project to be implemented in Kugluktuk, different areas will be addressed:

The significant amount of the shoreline/riverbanks eroding along the Coppermine River where the old cemetery is located, year by year it starts creating fear to the Kugluktukmiut and has been predicted for future reallocation of this valued landmark in the community. The Community aims to preserve the original location of the old cemetery for the younger Kugluktukmiut generation to treasure.

Protecting this land area as early as it should be with proper assessment and careful study with the help of geoscientific and traditional knowledge merged together, will help avoid the reallocation of the old cemetery. Also, there are more areas affected within the community. To stabilize the river banks alongside of the old cemetery area, to engage the community and Kugluktukmiut is another beneficial way to establish capacity building and a better way to adapt to climate change, land management and resiliency through both traditional and scientific aspects.

#### **2. Have steps been taken in the past to understand or solve this issue? If so, what were they, and were they effective? Why or why not?**

Past general study and analysis of the coastal erosion in Kugluktuk from the Geological Survey of Canada was made back in 2012 based in the years 1950-2008. In the past three years, from POLAR and ULaval, permafrost conditions research project in the territorial park took place. However, the shoreline area of the old cemetery has never been properly studied among of the potential causes of the erosion. Gathering data from these studies will no longer be ideal, not even enough for valid basis for land management and technical solutions to protect the said area.

#### **3. Is this a new or existing project? If it is an existing project, describe the previous work completed and why more work is required.**

This project would be the first to bring some understanding to both community and geoscientists by doing on site research, direct field monitoring and merging together of traditional and scientific knowledge towards proper land management and adapting to climate change for a prepared and resilient community.

#### **4. How is your project linked to climate change? What are the climate change impact(s) you want to address?**

1. Sediment avalanching of the riverbanks along the old cemetery location.
2. Permafrost conditions that leads to soil degradation areas in Kugluktuk due to warming climate in the Arctic.
3. Slumping (of soil surfaces) around the old cemetery areas, sediment avalanching of the riverbanks along the shoreline.

These are of the major coastal processes being observed and concluded by some pre-existed research and study around Kugluktuk. Further assessment and analysis will be conducted along

the coastal area to understand other factors of natural hazards and climate change with this proposed research project anticipated in the year 2021-2023.

#### 4. How will this project help your community or region adapt to a changing climate?

This research project will ensure the community understanding to the significance and benefit of the community capacity building, through community engagement that will be facilitated to introduce awareness of Kugluktukmiut, the “in the field” experiences of some selected members with the geoscientists which will be included in the project workplan.

The gathered data of both traditional and scientific knowledge will be documented and compiled as reports that are shareable for its purpose, for recommendation basis from proper land management, to structural solutions and transfer of knowledge of climate change preparedness and adaptation for community that faces same situations in the region and in the territory.

#### 5. Who will you work with?

##### **Project Team**

<b>Project Team Table</b>			
Team member	Organization or affiliation	Expertise, qualifications	Role in the project
<b>Name: Kimberley Young</b> <b>Title: Senior Administrative Officer</b> <b>Phone: (867)982-6505</b> <b>Email: sao@kugluktuk.ca</b>	Hamlet of Kugluktuk		<u>Project Coordinator</u> <u>Administrator of Funds</u> <u>Primary contact person</u>
<b>Name: Marissa Mercurio</b> <b>Title: Community Economic Development Officer</b> <b>Phone: (867)982-6502</b> <b>Email: edo@kugluktuk.ca</b>	Hamlet of Kugluktuk		<u>Secondary contact person</u> <u>Assisting to facilitate workshops and other Capacity Building activities in the community</u> <u>Coordinate/assist on behalf of the project team to liaise with community members to be assigned in shoreline field monitoring</u> <u>Help keep track of equipment inventory to be entrusted within the Hamlet premises or to be used in the field/project location</u>
<b>Name: David Didier</b> <b>Title: Professor in geography</b> <b>Phone: 1-418-318-0143</b>	Université du Québec à Rimouski	<u>PhD. Geography.</u> <u>Coastal hazards monitoring and modelling, waves, flood mapping,</u>	<u>Coastal science expertise.</u> <u>Coastline evolution analysis (master student supervision) and modeling.</u> <u>Waves and water level</u>

Email: David_Didier@uqar.ca		erosion, remote sensing analysis, shore-based video analysis	measurements. Field work along the coast. Community outreach and participatory research projects.
Name: Stéphanie Coulombe Title: Permafrost scientist Phone: 867-983-6676 Email: stephanie.coulombe@polar-polaire.gc.ca	POLAR	PhD. Geography. Permafrost analysis. Core and soil analysis.	<u>Permafrost and local expertise.</u> Resources, equipment/instrumentation available to study and monitor the erosion. Involve the youth in the project (summer job, training, etc.) and do outreach in the community.
Name: Thomas Buffin-Bélanger Title: River geomorphologist Email: Thomas_Buffin-Belanger@uqar.ca	UQAR	PhD. Geography River geomorphology and hazards	<u>River science expertise.</u> Kinetics of river corridor, fluvial ice dynamics
Name: Enda Murphy Title: Senior Research Engineer Phone: 343-571-1408 Email: Enda.Murphy@nrc-cnrc.gc.ca	NRC (National Research Council Canada)	<u>Coastal engineering.</u> Fluid mechanics and dynamics, numerical simulations, sediment transport, hydrodynamics.	<u>Coastal engineering expertise.</u> Contribution in wave and sediment transport modeling in the nearshore and around coastal structures.

### ***Project Partners***

<b>Project Partners Table</b>		
Partner contact	Organization or affiliation	How this partner will support the project
Name: Geoffrey Clarke Title: Director of Lands, environment and Resource Development Phone: (867) 982-3310 Email: dirlands@kitia	Kitikmeot Inuit Association (KIA)- Kugluktuk, Nunavut	To participate community engagement/capacity building in the community To help to recruit community members to be deployed at the project site and to be involve of the in-town project activities such as Hunters, Bear monitor, Elders, translator.
Name: Amanda Dumond Title: Manager Phone: (867) 982-4908 Email: kugluktuk@kwrb.ca	Kugluktuk Hunters and Trappers Organization (HTO)	To participate community engagement/capacity building in the community To help provide some vehicles (boat, ATVs/on the land equipment) to be used to accomplish project activities



Name: William Patch Title: Manager, Community Planning Phone: (867) 982-7465 Email: wpatch@gov.nu.ca	Community and Government Services (CGS) (Government of Nunavut)	To provide mapping sources if needed To provide recommendations and suggestion of future project plan to stabilize the old cemetery (graveyard island”) shoreline. To receive project research outcome report shareable to the community, region and the territory
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### ***Community Engagement and Capacity Building***

#### **6. What steps have already been taken to engage partners and community members in the development of this proposal?**

Previous works on permafrost included community engagement and awareness. We also had many discussions including the partners and some community members. The idea will be to also organize public meetings prior fieldwork in order to include both traditional and scientific knowledge in the study.

#### **7. How do you plan to engage your community members in the project?**

Employment will be created for Kugluktukmiut that involves training for this project such as but not limited to:

1. Elder/s- to be present during community meetings/ discussions during project introduction, project updates and for the project closure.
2. Translator- to be present during discussion on scheduled community meetings/ in between stages of the project, or in every presence of elders.
3. Instrument installation – this job description to be offered to some postgraduates that are currently unemployed
4. Participatory research using cell phones and time lapse cameras (installation of cameras to record time lapsing on the project site)- this job description to be offered to some postgraduates that are currently unemployed
5. On the field assistance-Bear monitor/s – this employment to be offer to Hunters with recommendations from HTO/KIA

#### **6. Provide details on any plans to get youth engaged or involved in the project. How will youth contribute to project goals, and how will they benefit from the experience?**

The idea would be to bring selected community members on the field and explain the processes on the coast. It would be necessary to have a community-led field work to get high-frequency measurements of coastal changes during the year, not just during the field works conducted by scientists. We will deploy monitoring stations with and implement a work plan to be carried with drones.

#### **7. How will your project help build local capacity? Will there be training or other forms of learning/building skills and knowledge? What groups or people are your focus for this?**

The project team will reach out to the whole community through advertised public meetings with invitations to local partners (KIA, HTO, Hamlet Council) before the proceedings of project

activities. Informational updates during the project timeline, or even the process after the goal of this project is accomplished.

This project will reach its focus on Elders, Local Hunters, Women, Post Graduates, High School Students for promoting training employment to Kugluktukmiut who are willing to collaborate and contribute their skills on the project, geographical tools demonstrations, handling informational materials to be given to elementary students to feed their young minds to gain scientific knowledge based on age appropriate level of understanding.

**8. What specific new tools/knowledge/methods will your community gain to increase the ability to better understand and adapt to the impacts of climate change?**

With the assistance of the geoscientist team, some project related presentations will be introduced to the community. A plan to engage schools to admit school tours about actual climate change which is a best opportunity for the students to experience for additional knowledge. Demonstration and utilization of scientific and geographical instruments will be introduced for Kugluktukmiut who will be deployed during and after the research project implementation. Opportunities of hands-on experiences will be delivered through monitoring and adaptation process as mentioned on some other parts of this application proposal.

With the help of the community, a first coastal/estuarine observatory will be implemented along the Coronation Gulf coast. Community members will contribute to the site selection where to install the system, but also be involved in maintenance and data management. This system will create new knowledge on coastal processes that will need to be included into future coastal management, but will help in 'seeing' the actual changes happening along the coast. A new online platform will be produced to visualize the camera views and inform on wave climate and water levels. These tools currently do not exist for the community.

9. How will you achieve your goals?

***Activities/Results***

**10. Describe the activities that will take place during your project. Be sure to describe how each activity is connected to your project objectives.**

***Community participation***

1. Community presentations in different approach such as community meetings (facilitate discussion that tackles climate change and its environmental impacts, the existence and purpose of the Coastal Hazard Assessment in Kugluktuk and Shoreline Evolution Analysis project in Kugluktuk, its introduction and its project updates)
1. The involvement of elders and local partners during project discussions to keep the Inuit tradition be respected during the project implementation
2. Local employment recruitment for community members
3. Workshops and training to the deployed Kugluktukmiut for the aim of transfer of knowledge

***Technical works***

To better understand the coastal changes and cliff retreat along the river bank, installations of geotechnical tools/instruments at the project sites will take place. We will acquire accurate records of waves, water levels, cliff temperature, sea/river ice dynamics, seabed/estuarine bed

dynamics, and long-term evolution of shoreline/cliff migrations. These data are needed for providing reports that include scientific facts, information and recommendations for proper land management and stabilization of the affected areas of coastal erosion within the community that will extend to the region and territory of Nunavut. We will also install video and photographic systems to monitor the coastal changes and permafrost monitoring on the island will be merged to the coastal/river works.

**4. Will you integrate Indigenous Knowledge/Inuit Qaujimajatuqangit into the project approach or other parts of the project? Explain how you will incorporate and protect Indigenous Knowledge and culture.**

The participation of the elder/s to community meetings, the engagement and support requested from the local partners whose focus is to ensure the preservation of Inuit people traditions and norms, these stakeholders will guide the project and the team along to the high respect and value of Inuit traditions during the project implementation.

**5. What are the expected results and outcomes of your project (for example: training, infrastructure, reports, plans)?**

1. A protected “graveyard island” in Kugluktuk that is based on both process of traditional and scientific study
2. Trainings that will be provided to deployed community members
3. A tangible report shareable to local partners (CGS, HTO, KIA) that will help represent the report for future use and consultation of communities that are affected of the same situation of coastal erosion and of similar environmental hazards

**4. What is the legacy of your project – what will be the lasting impact of your initiative for the community or region?**

A capacity building this project can model, the resiliency of the community to climate change adaptation, the knowledge to value and protect every piece of land the community owned, the adaptation strategy this project can provide and stabilized shoreline will be the best highlight that will stay in the community.

**5. How will the project’s benefits and/or activities continue when the funding ends?**

The goal to provide transferrable skills to Kugluktukmiut, the continuation of land/shoreline monitoring that will help keep lift employment particularly to some local hunters, a documented report shareable to communities to support application for adaptation measures stabilizing shoreline.

***Communication***

**6. Describe in detail how you plan to share information about the project with your community and others affected by the project. At what stages of the project will information be shared?**

Information and update status of the research project will be shared; prior to the start, throughout the project, and project closure. Through workshops and community presentation which is considerably the effective approach to deliver information for, The Hamlet and the local partners will be the point of contact to cater relative information for the communities that are in need or facing the same situation.

**7. How do you plan to share the benefits of this project with others beyond your community or organization?**

Aside from local partners such as CGS, KIA, HTO, this will also be shared to NRCan as this will serve as an update report from the previous report the GSC (Geological Survey Canada) has implemented.

**8. Identify any outcomes that will be useful to decision-makers or other communities/organizations and explain how they will be shared and with whom.**

With the report this project provides, the Hamlet of Kugluktuk will be the immediate agency that will benefit towards decision making on what application or approach to proper land management to protect the shoreline at the old cemetery ("graveyard island" ) location, also to mention, the could be of a great basis to resolve issues of other areas affected by coastal erosion in Kugluktuk. As also mentioned, this report is to be shared to other communities with the support and assistance of this research project partners.

**9. Are there any other insights or details about this proposal that you would like to share?**

The Hamlet of Kugluktuk advocates plans that can contribute for the welfare of its community, to its people. The project team envisions that this project will also leave a positive impact to the youth and their young minds as well. Incorporating delivery of information of adaptation to climate change through in-kind support of local groups and institutions, local media administered by the Hamlet will put the community understanding into a fun side like a Radio Show to host trivia question challenge, coloring and photography contest related to climate change also to adaptations. In the past summer time, the Kuggak radio station administered by the Hamlet of Kugluktuk hosted shows from different local initiatives which encouraged enthusiasm during the ongoing implementation of social distancing due to Covid-19 pandemic.

With the willingness and support of the Geoscientist team, some project related presentations are planned to introduced to the community. As well as a plan to engage schools to admit school tours about actual climate change occurring of the own community which is a best opportunity for the students to experience for additional knowledge and a sense of career encouragement for the youth.

## 6. Workplan

Prepare a workplan that lists each task or activity in the project, the timelines for each activity, expected results or outcomes, and estimated cost. The workplan table in the Excel spreadsheet is provided as a suggestion, however other formats can be used. You can modify the workplan table in the spreadsheet to suit your project, including adding lines for additional tasks and adding space for additional years.

### Project Activities

Date	Assigned Person/s	Activities
June 2021	Geoscientists/Team	<p>To travel to Kugluktuk</p> <p>To meet with the Hamlet of Kugluktuk representatives for this project (SAO, CEDO), local partners-HTO, KIA, and CGS</p> <p>To be delegated to Council Chamber Meeting and meet up with Council members to discuss and highlight the project objective</p> <p>To perform project on site visit, to witness the occurrence and observe the ice break-up in the Coppermine River and its activity that also affect shoreline erosion</p>
July-August 2021	Hamlet of Kugluktuk	Recruitment of community members to fill up employment needed on the project site
	Hamlet of Kugluktuk	To facilitate community meetings to introduce the ongoing project to address the coastal erosion along the “graveyard island” with the participation of Elders and local partners
	Geoscientists/Team	Quick tour visit at Elementary and High School to encourage to receive knowledge (grade level accurate presentation) to
September-October 2021	SAO/CEDO Geoscientists/Team Local partners KIA/HTO/CGS	

tackle awareness of Climate Change and Adaptation

November 2021-May 2022	Hamlet of Kugluktuk Geoscientists/Team Local Partners	Numerous conference call for project updates, follow up, plans and recommendations to onward project to its accomplishment in the remaining year
June 2022-July 2022	Geoscientists/Team	On-site visit, installation of additional geotechnical instruments for further research and monitoring Project update- Council meeting delegation, community meetings
June -August 2022	Hamlet of Kugluktuk	To hire summer student to be deployed for project site field monitoring and office tasks documenting project report update
June-September 2022	Project team and local partners	Community meetings for project update and latest information
October-June 2023	Project team	To process and finalize report-as the outcome from the research project
		Communications-conference call/in town meeting prior to the closure of the project
		Formalizing information to the community prior to closure of the project also regarding accomplishment of the project.

## 7. Budget

Provide a detailed budget including core expenditures, administrative/management costs and funding/support from other sources. An Excel spreadsheet is provided as a suggested format. Refer to the Expense Categories tab for an explanation of what type of expenses should be

included in each category. These expense categories must be used, but you are welcome to use another format for your budget. You can modify the budget table in the spreadsheet to suit your project, including adding columns for additional partners and adding space for additional years.

**To be enclosed with this proposal**

**8. Additional details**

**10. Will a position be created with some of the funds? If yes, provide a job description and/or list of qualifications for each position being created with this funding.**

Apart from hiring a master student in geography that would go on the field with local partners and analyze the data, a position would be created in Kugluktuk. This would ensure transfer knowledge on coastal dynamics but is also necessary to implement a community-based monitoring program, including instrument deployment and data downloads, drone surveys, coastline measurements, and geographical information system database maintenance. A part-time job salary is planned during the project. The employee would take care of instruments, such as installing the underwater instruments and downloading data, and would acquire topographical information on the coast. He or she would collaboratively work remotely with researchers and students based at UQAR (Rimouski) and CHARS (Cambridge Bay). Basic understanding of GIS software (e.g. ArcGIS) and geodetic instruments (e.g. RTK-GPS, drones) is necessary, but training will be part of the job position and therefore is not a requirement. Since field work will take place on a weekly basis, the candidate is expected to be autonomous on the field and be motivated by natural processes. The project will also incorporate observations from the community members (about environmental coastal changes around Kugluktuk) and therefore the candidate will integrate both scientific and traditional knowledge in its work. He or she will work with local monitors (identified members such as hunters and trappers) that would give them information about coastal changes in pre-determined field sites farther along the coast. This information would be integrated in an Excel spreadsheet (also included in the training) and shared with partners and research team members. During the summer field work, the employee would work together with the scientists and students.

**11. Will funds be used to purchase equipment, develop training materials, and/or collect and store information (i.e. create a database)? If yes, explain the ownership of this material or data and who will be responsible for proper storage, maintenance, and management.**

The funds will be used to acquire various types of equipment and material and a computer would be provided to help community members to have access to the camera stream. Most of the equipment (such as a drone that would stay in Kugluktuk for the surveys, a computer and hard drives, etc.) would be owned by the community but some of the equipment, including moored sensors and scientific materials, such as video systems and thermal post, would be acquired for researchers.

- 12. Does your project include research or assessment of land or infrastructure? If yes, identify land ownership for any areas that will be involved. Describe your efforts to engage land owners and ensure they are supportive of the project.**

The Hamlet of Kugluktuk has consulted with the Government of Nunavut (CGS Department). They have provided some suggestions for improvement and fully support this project.

- 13. Map of study area: Please include a map of the project area that is the focus of your efforts, if applicable.**

This map shows the exact location where the project will take place (all along the coast).

Figure 3. Map of the study area.

**9. Letters of support**

1. Letters of support strengthen your proposal. You are encouraged to submit support letters from partners listed in the project partner table. We recognize that it may take considerable time to obtain support letters. If the support letter(s) is not ready upon submission of the application, please let us know when they are expected, and submit them when you receive them.

**Letter of support from partners will be submitted upon availability on the following week of the submission of this proposal.**

**10. Resumes**



2. For the person that will be managing the project and individuals who are from outside of the region, please include information on their relevant knowledge, skills and/or experience for this project. A one to two paragraph description, resume, or another format are all acceptable (up to two pages maximum).

Please submit your Proposal to the Climate Change Community Liaison / Research Coordinator for your region (see contacts on first page) and [aadnc.adaptnord-northernadapt.aandc@canada.ca](mailto:aadnc.adaptnord-northernadapt.aandc@canada.ca) You will receive an email confirming receipt of your Proposal.